GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

ADVICE NOTE
Allocation of offset site
In relation to condition 4 of this permit, 2.14 hectares of the permit holder's banked offset site at Crown Reserve 3203, Southern Brook will be attributed to the offset for this project. The nominated 2.14 hectares includes suitable foraging habitat for Carnaby's cockatoo (*Zanda latirostris*) and significant remnant vegetation within an extensively cleared area.

PERMIT DETAILS

Area Permit Number: CPS 11013/1

File Number: DWERVT18286

Duration of Permit: From 25 September 2025 to 25 September 2032

PERMIT HOLDER

Shire of Northam

LAND ON WHICH CLEARING IS TO BE DONE

Lot 1 on Plan 10174, Northam

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.41 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 25 September 2027.

2. 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.

3. 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.

4. Offset – Crown Reserve 3203

(a) Within 12 months of commencing clearing authorised under this permit, at an *optimal time* and no later than 25 September 2026, the permit holder must commence *revegetation* and *rehabilitation* of the area cross-hatched red on Figure 2 of Schedule 2, by implementing and adhering to the 'Revegetation Plan for Clearing Offset Purposes, Shire of Northam – Northam Airport Expansion Project' (Shire of Northam, 2025), including but not limited to the following actions:

(i) deliberately *planting* and/or *direct seeding native vegetation* that will result in the minimum completion criteria detailed in Table 3 of Schedule 3 of this permit and ensuring only *local provenance* seeds and propagating material are used;

(ii) undertake *weed* control activities to achieve and maintain the minimum completion criteria specified on Table 3 of Schedule 3.

(iii) install temporary fencing around the perimeter of the *revegetation* site;

(iv) water *planted* vegetation at the *optimal time* for the first two years post planting as required;

(v) establish at least three 10 x 10 metre quadrat monitoring sites within *revegetated* areas; and

(vi) install signage to educate reserve users of the *revegetation* activities being undertaken;

(vii) undertake monitoring of the areas *revegetated* and *rehabilitated* under condition 4 of this permit by an *environmental specialist* until the completion criteria listed in Table 3 of Schedule 3 have been met.

(b) The permit holder must undertake remedial actions for areas *revegetated* and *rehabilitated*, where monitoring indicates that the *revegetation* and *rehabilitation* has not met the completion criteria specified in Table 3 of Schedule 3, including:

(i) *revegetate/rehabilitate* the area by deliberately *planting* and/or *direct seeding native vegetation* that will result in the minimum completion

criteria detailed in Table 3 of Schedule 3 and ensuring only *local provenance* seeds and propagating material are used;

(ii) additional *weed* control activities;

(iii) annual monitoring of the *revegetated* and *rehabilitated* areas by an *environmental specialist*, until the completion criteria are met.

(c) where an *environmental specialist* has determined that the completion criteria, outlined in Schedule 3 has been met, that determination shall be submitted to the *CEO* within three months of the determination being made by the *environmental specialist*;

(d) where the *CEO* does not agree with the determination made under condition 4(c), the *CEO* may require the permit holder to undertake remedial actions in accordance with the requirements under condition 4(b) and repeat the actions under condition 4(c).

5. 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 2; and (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 3
2.	In relation to the offset pursuant to condition 4	(a) a description of the *rehabilitation* and *revegetation* activities undertaken; (b) the size of the area *rehabilitated* and *revegetated*; (c) the date/s on which the *rehabilitation* and *revegetation* was undertaken; (d) the boundaries of the area *rehabilitated* and *revegetated* (recorded digitally as a shapefile using a Global Positioning

No.	Relevant matter	Specifications
		System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings); (e) determinations made by an *environmental specialist*; and (f) any other actions taken in accordance with condition 4.

6. Reporting

The permit holder must provide to the *CEO* the records required under condition 5 of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table 2 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*.
direct seeding	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.
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.
EP Act	*Environmental Protection Act 1986* (WA)
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of 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.
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means native vegetation seeds and propagating material from natural sources within 50 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.

Term	Definition
optimal time	means the period from April to June for undertaking planting and seeding.
planting	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.
rehabilitate/ rehabilitated/rehabilitation	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
revegetate/ revegetated/revegetation	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.
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

C Robertson
01.09.2025
2.31PM

Caron Robertson
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

1 September 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

SCHEDULE 2

The boundary of the area within which conditions apply to be cleared is shown in the map below (Figure 2).

Figure 2: Map of the boundary of the area within which condition 4 applies.

SCHEDULE 3

Table 3. Revegetation and rehabilitation criteria for condition 4.

Criterion	Completion targets	Completion criteria	Monitoring
Vegetation – Species richness	≥80% of species planted	Minimum of four native species to be present in the revegetation area	Years 3, 4 & 5
Vegetation – density	≥70% of stems/ha planted	Minimum of 1,200 stems/ha to be present in revegetation area	Years 3, 4 & 5
Weed management	≤30% weed cover of grassy and pasture weeds. No declared weeds or exotic woody weeds present onsite	weed cover of grassy and pasture weeds to be no greater than 30%	Years 3, 4 & 5
Site maintenance	Exclusion of public access and limitation of grazing mammals.	Installation of livestock exclusion fencing and signage and repairs when necessary	Annually

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 11013/1
Permit type:	Area permit
Applicant name:	Shire of Northam
Application received:	27 March 2025
Application area:	0.41 hectares of native vegetation
Purpose of clearing:	Expansion of airport infrastructure
Method of clearing:	Mechanical
Property:	Lot 1 on Plan 10174
Location (LGA area/s):	Northam
Localities (suburb/s):	Northam

1.2. Description of clearing activities

The application is to clear an area of native vegetation to facilitate the expansion of airport infrastructure at the Northam Airport. The area proposed to be cleared is in remnant vegetation adjacent to the existing airport runway and other airport facilities (see Figure 1, Section 1.5).

1.3. Decision on application

Decision:	Granted
Decision date:	1 September 2025
Decision area:	0.41 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 B),
- relevant datasets (see Appendix G.1),
- the findings of a biological survey (see Appendix F),
- the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), and
- 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 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.
- the loss of up to 0.41 hectares of native vegetation that is moderate quality foraging habitat for Carnaby's cockatoo (*Zanda latirostris*),

- the loss of up to 0.41 hectares of native vegetation that supports an ecological linkage, and
- the loss of up to 0.41 hectares of native vegetation that is significant as a remnant within an extensively cleared area

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 the potential introduction and spread of weeds and dieback into adjacent vegetation and impacts to ecological linkage function can be minimised and managed to unlikely to lead to an unacceptable risk to environmental values through permit conditioning. However, impacts on suitable habitat for Carnaby's black cockatoos and significant remnant within an extensively cleared landscape 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 an offset is required to counterbalance the above significant residual impacts. Further information on the suitability of the offset provided is summarised in Section 4.

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

- avoid, minimise to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds, and
- the conservation and rehabilitation of 2.14 hectares of native vegetation within Lot 601 on Deposited Plan 427783 (R 3203), Southern Brook, to offset the loss of suitable foraging habitat for Carnaby's cockatoo and significant remnant vegetation within an extensively cleared area.

1.5. Site map

Figure 1. Map of 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)

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 Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Avoidance

The Shire of Northam advised in their application that opportunities to avoid clearing native vegetation were limited as these areas already contain existing infrastructure or have been set aside for other developments. In response to a request for further information, the Shire further clarified that alternative locations were considered to avoid the requirement for clearing, however, were considered topographically and operationally unsuitable for hangar development (Shire of Northam, 2025c).

The proposed hangar sites are positioned to maximise operational efficiency and safety, with siting pre-determined based on regulatory airfield design criteria, obstacle limitation surfaces (OLS), and safe aircraft movement requirements (Shire of Northam, 2025c).

Mitigation

Mitigation measures proposed by the applicant include the removal of green waste from site for disposal within the Shire's 'green pile' at the waste facility and soil and rubble will be treated as contaminated fill and deposited in capped landfill (Shire of Northam, 2025a).

Additional mitigation measures proposed by the applicant include dust and erosion control during construction and scheduling clearing outside breeding seasons for threatened species, particularly Carnaby's cockatoo (Shire of Northam, 2025c).

After consideration of avoidance and mitigation measures, it was determined that an offset to counterbalance the significant residual impacts to significant remnant vegetation was necessary. In accordance with the Government of Western Australia's *Environmental Offsets Policy* and *Environmental Offsets Guidelines*, 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 Appendix C) identified that the impacts of the proposed clearing present a risk to biological values (fauna), significant remnant vegetation, and land and water resources. 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 Principle (b)

Assessment
The desktop assessment identified 14 species of conservation significant fauna in the local area composed of ten birds, one invertebrate and three mammals.

The biological survey identified one habitat type within the proposed clearing area, described as open woodland of *Eucalyptus drummondii* (Drummond's mallee) (Del Botanics, 2025). The survey did not identify any evidence of conservation significant fauna within the proposed clearing area.

Based on the results of the desktop assessment and biological survey, the Carnaby's cockatoo (*Zanda latirostris*) may have suitable habitat within the application area. According to available mapping, the application area is located within the known breeding distribution for Carnaby's cockatoo, and the nearest record is 1.06 km from the proposed clearing.

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 (DAWE, 2022). Habitat trees considered potentially suitable for black cockatoo breeding generally have a DBH greater than 500 millimetres. The biological survey did not identify any hollows suitable for breeding by Carnaby's cockatoo, however, did identify two trees that were a suitable size to form hollows (Del Botanics, 2025). Drummond's mallee is not typically associated with breeding habitat within the Wheatbelt (DAWE, 2022), therefore it is not likely the proposed clearing will support significant breeding habitat for the Carnaby's cockatoo.

Black cockatoos rely upon the availability of night roosting habitat in proximity to foraging resources and rely on access to watering points in selecting night roost sites, with roost sites usually within two kilometres of a watering point. The biological survey did not identify any evidence of roosting within the proposed clearing area, however, did note that several trees may be suitable for roosting (Del Botanics, 2025).

Carnaby's are known to forage primarily on seeds, flowers and nectar of native proteaceous plant species (Banksia spp., Hakea spp. and Grevillea spp.), as well as Callistemon spp. and *Corymbia calophylla* (marri) (DAWE, 2022). The biological survey identified *Hakea preissii* within the proposed clearing area, however, this is the only suitable foraging species recorded, which was found in low densities (Del Botanics, 2025). Noting its location within the breeding distribution for Carnaby's cockatoo and within the context of extensively cleared and fragmented native vegetation of the Wheatbelt region, the vegetation proposed to be cleared comprises a significant foraging habitat to support the breeding of Carnaby's black cockatoo. The removal of vegetation within the application area would contribute to the cumulative loss of foraging habitat for the Carnaby's cockatoo.

Conclusion
For the reasons set out above, it is considered that the impacts of the proposed clearing on Carnaby's cockatoo foraging habitat constitutes a significant residual impact.

In accordance with the Government of Western Australia's *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:

- the provision of an offset to counterbalance the loss of 0.84 ha of moderate-quality foraging habitat for the Carnaby's cockatoo.

3.2.2. Significant remnant vegetation and conservation areas (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 (i.e. pre-European settlement) (Commonwealth of Australia 2001). This is the threshold level below which species loss appears to accelerate exponentially at an ecosystem level.

The application falls within the Avon Wheatbelt IBRA which currently retains approximately 18.51 per cent of the pre-European vegetation (Government of Western Australia, 2019). The application is mapped as Beard vegetation association 352 (Beard 352) which is extensively cleared and currently retains approximately 26.87 per cent of pre-

European vegetation (Government of Western Australia, 2019). Furthermore, a review of available databases determined that the local area retains approximately 19.61 per cent of the original extent. The Bioregion, local area and mapped vegetation type are inconsistent with the national target of biodiversity conservation of Australia (Commonwealth of Australia, 2001).

Beard 352 is described as medium woodland; York gum (Shepherd et al, 2001). The biological survey (Del Botanics, 2025) notes that the vegetation within the proposed clearing area is primarily composed of open woodland of *Eucalyptus drummondii* over tall open scrub of *Acacia acuminata* and *Hakea preissii.* While the vegetation is considered woodland, it lacks any individuals of *Eucalyptus loxophleba* (York Gum), and therefore, the application is not likely to be representative of the mapped vegetation complex.

Despite the above and the degraded (Keighery, 1994) condition of the proposed clearing area, the native vegetation within the local area is still below the 30 per cent target and it is considered that any loss of native vegetation within an extensively cleared landscape constitutes a significant residual impact.

Ecological linkage
Given the extent of native vegetation within the local area, the application area may contribute towards an informal ecological linkage in the local area. However, taking into consideration the relatively small extent of clearing proposed, and adjacent vegetation will remain within the after the proposed clearing, it is not likely that the proposed clearing will have a significant impact to linkage and dispersal values of fauna within the local area. The proposed clearing may cause degradation of habitat values of adjacent and nearby remnant native vegetation by facilitating the spread of weeds. It is considered that the impact of clearing can be mitigated through a dieback and weed management condition on the permit.

Conclusion
Based on the information above, the proposed clearing will result in the loss of native vegetation that is significant as a remnant within an extensively cleared landscape and constitutes a significant residual impact. For the reasons set out above, it is considered that the impacts of the proposed clearing on ecological linkage values can be managed by taking steps to minimise the risk of the introduction and spread of weeds.

In accordance with the Government of Western Australia's *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:

- hygiene management: steps to minimise the risk of the introduction and spread of weeds ; and
- the provision of an offset to counterbalance the loss of 0.84 ha of significant remnant vegetation within an extensively cleared area.

3.2.3. Land and water resources (riparian vegetation and flooding) - Clearing Principles (f) and (j)

Assessment
The proposed clearing is mapped 0.05 km southwest of the Mortlock River North, is mapped as a terrestrial Groundwater Dependent Ecosystem (GDE), and the mapped soil is at high risk of waterlogging and flooding. The proposed clearing contains *Eucalyptus drummondii*, *Acacia acuminata* and *Hakea preissii* (Del Botanics, 2025), none of which are species indicative of riparian vegetation or GDEs, with *A. acuminata* and *H. preissii* found in a wide variety of habitats (Florabase, 1998-).

Given the proposed clearing is not likely to result in the loss of riparian vegetation, it is not considered likely that the proposed clearing will result in any significant impacts to the ecological values of the vegetation associated with the watercourses adjacent to the application area or significantly impact the risk of waterlogging and flooding. Further, given the non-perennial nature of the watercourses and the extent of the proposed clearing across, it is likely that any water quality impacts will be limited to short-term increases in sedimentation and turbidity and are unlikely to be significant. The applicant has also committed to dust and erosion control during clearing activities which will mitigate the risk of impacts to the adjacent watercourses.

Conclusion
Based on the above assessment, the proposed clearing will not result in the loss of riparian vegetation. For the reasons set out above, the proposed clearing is unlikely to result in any significant risks to increased waterlogging or flooding. In considering the above, the Delegated Officer determined that the impacts of the proposed clearing on water resources does not constitute a significant residual impact.

Conditions
No water management conditions required.

3.3. Relevant planning instruments and other matters

Necessity of the clearing
The department's '*A guide to the assessment of applications to clear native vegetation*' (DER, 2013) indicates that the necessity of the clearing is an 'other relevant matter' to be considered when making decisions as to whether a clearing permit should be granted. The assessment guideline prioritises clearing for public use over private benefit or commercial gain (DER, 2013).

In considering the clearing permit application, the Delegated Officer had regard to the fact that the proposed hangar will support ongoing operations at the airport which include emergency services such as (Shire of Northam, 2025c):

- Department of Fire and Emergency Services (DFES): The site functions as a regional base for aerial firefighting, especially during high-risk bushfire periods. Current limitations constrain aircraft safety, turnaround efficiency, and capacity. The expansion will:
    - Improve runway and apron safety and conditions.
    - Enable all-weather, year-round use.
    - Accommodate larger firefighting aircraft and support equipment.
- Royal Flying Doctor Service (RFDS): The airport is a key access point for medical evacuations in the Wheatbelt. However, limited hangar and staging facilities compromise safe night-time and poor-weather operations. Proposed upgrades will:
    - Support safer landings and departures.
    - Reduce delays in time-critical medical evacuations.
    - Improve infrastructure for patient handling and pilot safety.

Planning context
The Northam Airport is consistent with several planning frameworks including the *Northam Airport Master Plan*, which provides the adopted framework for long-term airport growth, the *Shire of Northam's Local Planning Scheme No. 6*, which zones the land as Public Purpose Reserve – Airport, supporting the proposed use and the *State Aviation Strategy*, which encourages appropriate regional airport investment and planning aligned with local and state development priorities (Shire of Northam, 2025c).

Aboriginal Heritage
No Aboriginal sites 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.

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 application of the avoidance and mitigation measures summarised in Section 3.1:

- the loss of up to 0.41 hectares of moderate-quality foraging habitat for Carnaby's cockatoo, and
- the loss of up to 0.41 hectares of native vegetation that is significant as a remnant within an extensively cleared area.

In determining the appropriateness of an offset, the Delegated Officer took into consideration the applicant's implementation of the mitigation hierarchy and the public benefit of the proposed clearing (see Section 3.1). In considering these matters, the Delegated Officer determined that it was appropriate to grant the clearing permit in relation to the significant residual impacts, on the basis that a suitable environmental offset was implemented to counterbalance the impacts.

The applicant proposed an environmental offset consisting of the conservation and rehabilitation of native vegetation within the applicant's banked offset site at Lot 601 on Deposited Plan 427783, Southern Brook (Crown Reserve 3203).

In 2024, the Shire of Northam changed the vested land use of Lot 601 from "Sand and gravel quarry" to "Recreation and Conservation" as an offset for CPS 9937/1, banking the remainder of the land for future projects. Lot 601 is currently managed by the Shire of Northam.

The offset is located within ten kilometres of the proposed clearing, within the same mapped vegetation type. A site assessment for the proposed offset site was undertaken in February 2024 (Aurora Environmental, 2024), showing that Reserve 3203 with a total area of 32.262 hectares includes following environmental values:

- Four fauna habitat types:

- Approximately 12.07 hectares of Open Eucalyptus Woodland;
- Approximately 2.51 hectares of Acacia/Allocasuarina Low Open Woodland;
- Approximately 9.15 hectares of Allocasuarina Low Woodland; and
- Approximately 6.91 hectares of Allocasuarina/Acacia/Banksia Low Woodland.

- Approximately 11.1 hectares of BC foraging habitat in Good to Very Good conditions.
- 251 potential black cockatoo habitat trees, with 33 trees having large hollows that appeared suitable for BC and 91 trees containing small hollows.

Based on the above information, the proposed offset site at Reserve 3203 is considered to be appropriate to offset the significant residual impact of the proposed clearing as it contains similar tree species proposed to be cleared (Acacia and Eucalyptus) and foraging habitat for Carnaby's black cockatoo.

The Shire proposed to utilise an area of 2.14 hectares, shown in Figure 2, as an offset for this application. This area contains the following values:

- Approximately 1.82 hectares of Open Eucalyptus Woodland in degraded (Keighery, 1994) condition
- Approximately 0.32 hectares of Allocasuarina Low Woodland in good (Keighery, 1994) condition

It should be noted that the area proposed as an offset is not mapped as good to very good black cockatoo foraging habitat in the survey, however, contain both *Eucalyptus salmonophloia* (salmon gum) and *E. loxophleba* (York gum) (Aurora Environmental, 2024) which are both known foraging species for Carnaby's cockatoos (Bamford, 2023) and therefore, is considered to have moderate foraging value currently.

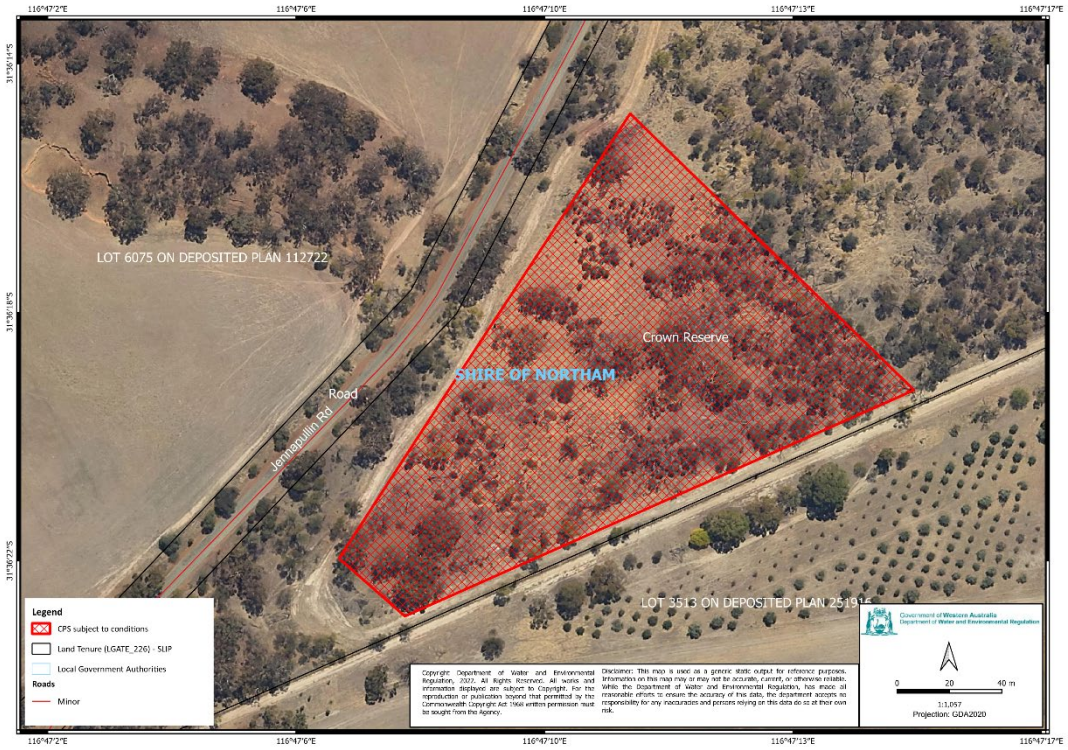


Figure 2. Map of the proposed offset area (cross-hatched red).

Conclusion

The offset proposal has been assessed against the *WA Environmental Offsets Policy* (2011) and *WA Environmental Offsets Guidelines* (August 2014) and informed by guidance such as *Quantifying Environmental Offsets in Western Australia* (DWER, 2021), and the Draft Procedure for Environmental Offset Metric Inputs and associated DWER WA environmental offsets calculator (DWER, 2022). Based on the calculations, the proposed offset counterbalances:

- 102.1 per cent of impacts to moderate-quality foraging habitat for Carnaby's cockatoo, and
- 105.1 per cent of impacts to significant remnant vegetation within an extensively cleared area

The Delegated Officer considers that this adequately counterbalances the significant residual impacts listed above. The justification for the values used in the offset calculation is provided in Appendix E.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
Response to request for further information (Shire of Northam, 2025c): • Avoidance and mitigation measures • Necessity of the proposed clearing • Map of the proposed offset area	See Section 3.1 Avoidance and Mitigation Measures, Section 3.3 Relevant planning instruments and other matters and Section 4 Suitability of Offsets.

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of a large but patchy tract of remnant native vegetation in the intensive land use zone of Western Australia. It is adjacent to the existing airport infrastructure and other remnant vegetation associated with the Mortlock River. The proposed clearing area is a part of a significant remnant in a highly cleared landscape. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 9.37 per cent of the original native vegetation cover.
Ecological linkage	The proposed clearing area is not mapped as a formal ecological linkage, however, its location along a river can be considered an informal linkage.
Conservation areas	The proposed clearing is not mapped within any conservation area. There are no conservation areas in the local area (10-kilometre radius), the nearest being Bobakine Nature Reserve located approximately 15 km west of the application.
Vegetation description	The biological survey (Del Botanics, 2024) indicate the vegetation within the proposed clearing area consists of *Eucalyptus drummondii* Woodland. The full survey descriptions and maps are available in Appendix F. This is inconsistent with the mapped vegetation type(s): • Beard 352, which is described as Medium woodland; York gum (Shepherd et al, 2001) The mapped vegetation type retains approximately 19.61 per cent of the original extent (Government of Western Australia, 2019).
Vegetation condition	The biological survey (Del Botanics, 2024) indicate the vegetation within the proposed clearing area is in completely degraded (Keighery, 1994) condition. The full Keighery (1994) condition rating scale is provided in Appendix D. The full survey descriptions and mapping are available in Appendix F.
Climate and landform	The application is in the Wheatbelt Region which is characterised as having hot, dry summer and cold winters. Northam's average maximum temperature is 25.4 degrees Celsius with a mean annual rainfall of 424.1 mm. Landform of the proposed clearing area is described as poorly drained floodplain.
Soil description	The soil is mapped as the Avon flats system, which is described as alluvial terraces and floodplains that occur adjacent to the Avon, lower Mortlock and lower Dale rivers.
Land degradation risk	The mapped soil has a high risk of land degradation from flooding, waterlogging, sub-surface acidification and phosphorous export, a moderate risk from wind erosion and salinity and a low risk from water erosion.
Waterbodies	No wetlands or watercourses intersect the area proposed to be cleared. The nearest waterbodies is the Mortlock River North, located approximately 0.05 km north-east of the proposed clearing.
Hydrogeography	The proposed clearing is located within the Avon River Catchment surface water area as proclaimed under the RIWI Act. The mapped soil has a low risk of water erosion.
Flora	According to available databases, there are 30 records across 12 species of conservation significant flora in the local area (10-kilometre radius) composed of eight priority species and four (4) species listed as threatened. None of these species have previously been recorded within one kilometre of the proposed clearing.

Characteristic	Details
	The biological survey did not record any conservation significant flora within the proposed clearing area (Del Botanics, 2024).
Ecological communities	The proposed clearing is not mapped within any threatened or priority ecological communities. According to available databases, one community, the "Eucalypt woodlands of the Western Australian Wheatbelt" (Wheatbelt woodlands) has been recorded in the local area (10-kilometre radius), the nearest being directly adjacent to the proposed clearing. The biological survey determined that the vegetation within the proposed clearing area is not representative of a threatened or priority ecological community (Del Botanics, 2024). The Wheatbelt woodlands is listed as Priority 3 by DBCA and Critically Endangered under the EPBC Act.
Fauna	According to available databases, there are 79 records across 14 species of conservation significant fauna in the local area (10-kilometre radius), none of which were recorded within one kilometre of the proposed clearing. The nearest record is the Carnaby's cockatoo (*Zanda latirostris*) (EN), located approximately 1.01 km from the proposed clearing. No known black cockatoo roosts or breeding sites were recorded within the local area (10-kilometre radius). The biological survey did not record any direct or indirect evidence of conservation significant fauna within the proposed clearing area (Del Botanics, 2024).

B.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*					
Avon Wheatbelt	9,517,109.95	1,761,187.42	18.51	174,980.68	9.94
Vegetation complex*					
Beard 352	724,268.73	142,012.22	19.61	12672.52	8.92
Local area					
10km radius	31,327.81	2,936.54	9.37	-	-

*Government of Western Australia (2019)

B.3. 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 (total)	Are surveys adequate to identify? [Y, N, N/A]
Zanda latirostris (Carnaby's cockatoo)	EN	Y	Y	1.01	44	Y

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

B.4. Land degradation risk table

Risk categories	Land Unit 1
Flood risk	H2 - >70% of the map unit has a moderate to high flood risk
Waterlogging	H2 - >70% of map unit has a moderate to very high waterlogging risk

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: Due to the completely degraded (Keighery, 1994) condition of the vegetation (Del Botanics, 2024) and the history of disturbance within the application, the area proposed to be cleared is unlikely contain a high level of biological diversity.	Not likely to be at variance	No
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared contains *Hakea preissii* (Del Botanics, 2024), which is used for foraging by the Carnaby's cockatoo (*Zanda latirostris*). Additionally, the biological survey identified two trees which have a suitable DBH to form hollows for breeding (Del Botanics, 2024).	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: Given the condition and history of disturbance within the application area, the proposed clearing is not likely to contain significant habitat for threatened flora listed as threatened under the BC Act. The biological survey, which was conducted in September 2024, did not identify any conservation significant flora within the proposed clearing area (Del Botanics, 2024).	Not likely to be at variance	No
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 does not contain species that can indicate a threatened ecological community (Del Botanics, 2024). The proposed clearing is mapped adjacent to the "Eucalypt woodlands of the Western Australian Wheatbelt" community, listed as a Critically Endangered threatened ecological community (TEC) under the EPBC Act, and may have indirect impacts to this TEC. It is considered that any potential indirect impacts to this community can be managed through the application of standard weed hygiene conditions.	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the mapped vegetation type and native vegetation in the local area is inconsistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is part of an informal ecological linkage in the local area.	At variance	Yes *Refer to Section 3.2.2, above.*

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 distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.	Not likely to be at variance	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: The proposed clearing is mapped approximately 0.05 km from the Mortlock River North and is mapped as a Terrestrial Groundwater Dependent Ecosystem.	Not likely to be at variance	Yes *Refer to Section 3.2.3, above.*
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are highly susceptible to sub-surface acidification, nutrient export and salinity. Noting the extent, location and purpose of the application and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on 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, wetlands or Public Drinking Water Sources Areas 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 in the surrounding area indicate the proposed clearing may contribute to increased incidence or intensity of flooding or waterlogging.	Not likely to be at variance	Yes *Refer to Section 3.2.3, above.*

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

E.1. Carnaby's cockatoo foraging habitat

Calculation	*Score*	*Rationale*
Conservation significance		
Description	Carnaby's cockatoo foraging	The proposed clearing contains Hakea preissii which is a key foraging species for the Carnaby's cockatoo
Type of environmental value	Species (Flora/Fauna)	Carnaby's cockatoo (*Zanda latirostris*)
Conservation significance of environmental value	Rare/Threatened Species - Endangered	The Carnaby's cockatoo is listed as endangered under both the BC Act and EPBC Act
Landscape-level value impacted	yes/no	No
Significant impact		
Description	foraging habitat	Moderate quality foraging habitat for Carnaby's cockatoo is proposed to be cleared for the construction of a new airport hangar at Northam Airport
Significant impact (hectares)	0.41	The amount of vegetation proposed to be cleared
Quality (scale)	5.00	Hakea preissii is the only species within the proposed clearing area suitable for foraging by Carnaby's cockatoo based on the results of the survey, noting the applications location within the breeding distribution for Carnaby's cockatoo and within the context of the extensively cleared and fragmented native vegetation of the Wheatbelt region, the vegetation proposed to be cleared comprises a significant foraging habitat to support the breeding of Carnaby's black cockatoo
Rehabilitation credit		
Description	0	N/A - No on site revegetation proposed
Offset		
Description	Rehabilitation and conservation	The Shire will allocate a portion of their banked offset site within Reserve 3203, Southern Brook which is managed by the Shire for conservation and rehabilitate a portion of the reserve.

Proposed offset (area in hectares)	2.14	Area proposed by the applicant.
Current quality of offset site	6.00	moderate quality foraging habitat, however, slightly better quality then the proposed clearing area as there are more species present in higher density than the application area, however, still degraded and no evidence of use
Future quality WITHOUT offset (scale)	6.00	The quality would likely remain the same without ongoing management
Future quality WITH offset (scale)	7.00	It is expected that infill planting and ongoing management within the Reserve will improve the habitat quality by increasing the availability of foraging resources.
Time until ecological benefit (years)	16.00	It is assumed that it will take 15 years for the rehabilitated areas to provide sufficient foraging habitat for Carnaby's cockatoos and 1 year for rehabilitation activities to commence.
Confidence in offset result (%)	90.0%	There is a high level of confidence that the offset will be achieved, and that conservation of the offset site (in perpetuity) would successfully mitigate the future risk of loss of the site.
Duration of offset implementation (maximum 20 years)	20.00	The offset will be conserved in perpetuity, so the maximum time is applied
Time until offset site secured (years)	1.00	The offset is banked and is already under conservation tenure, so the minimum value is applied
Risk of future loss WITHOUT offset (%)	15.0%	The offset site was vested for sand and gravel extraction. The Shire is not penalised for planning ahead and banking areas for future offsets
Risk of future loss WITH offset (%)	10.0%	The offset site will be changed to "Recreation/Conservation".

E.2. Significant remnant vegetation

Calculation	***Score***	***Rationale***
Conservation significance		
Description	Significant remnant vegetation	The application proposes to clear native vegetation within an area with 9.37 per cent of its original extent remaining (10 km radius)
Type of environmental value	Vegetation/Habitat	Significant remnant vegetation within an extensively cleared area
Conservation significance of environmental value	Terrestrial native vegetation complex - <30% extent remaining in the bioregion	The extent of remnant vegetation within the Bioregion and local area is below the Commonwealth of Australia (2001) targets for biodiversity.
Landscape-level value impacted	yes/no	Yes, the vegetation has ecological linkage value
Significant impact		
Description	Extensively cleared area	The proposed clearing will result in the loss of native vegetation within an extensively cleared area
Significant impact (hectares)	0.41	The amount of native vegetation proposed to be cleared
Quality (scale)	3.00	Vegetation is in completely degraded (Keighery, 1994) condition, however, is located in extensively cleared area an provides ecological linkage value
Rehabilitation credit		
Description	0	N/A - No on site revegetation proposed
Offset		

Description	Rehabilitation and conservation	The Shire will allocate a portion of their banked offset site within Reserve 3203, Southern Brook which is managed by the Shire for conservation and rehabilitate a portion of the Reserve.
Proposed offset (area in hectares)	2.14	Area proposed by the applicant.
Current quality of offset site	4.00	The proposed offset area is in degraded (Keighery, 1994) condition
Future quality WITHOUT offset (scale)	4.00	The quality would likely remain the same without ongoing management
Future quality WITH offset (scale)	5.00	It is expected that infill planting and ongoing management within the Reserve will improve the condition of the vegetation.
Time until ecological benefit (years)	11.00	It is assumed that it will take 10 years for the rehabilitated areas to increase the quality of the vegetation and 1 year for rehabilitation activities to commence.
Confidence in offset result (%)	90.0%	There is a high level of confidence that the offset will be achieved, and that conservation of the offset site (in perpetuity) would successfully mitigate the future risk of loss of the site.
Duration of offset implementation (maximum 20 years)	20.00	The offset will be conserved in perpetuity, so the maximum time is applied
Time until offset site secured (years)	1.00	The offset is banked and is already under conservation tenure, so the minimum value is applied
Risk of future loss WITHOUT offset (%)	15.0%	The offset site was vested for sand and gravel extraction. The Shire is not penalised for planning ahead and banking areas for future offsets
Risk of future loss WITH offset (%)	10.0%	The offset site will be changed to "Recreation/Conservation".

Appendix F. Biological survey information excerpts

Flora, Vegetation and Fauna Survey, Stage 1 Northam Airport 2024. (Del Botanics, 2025)

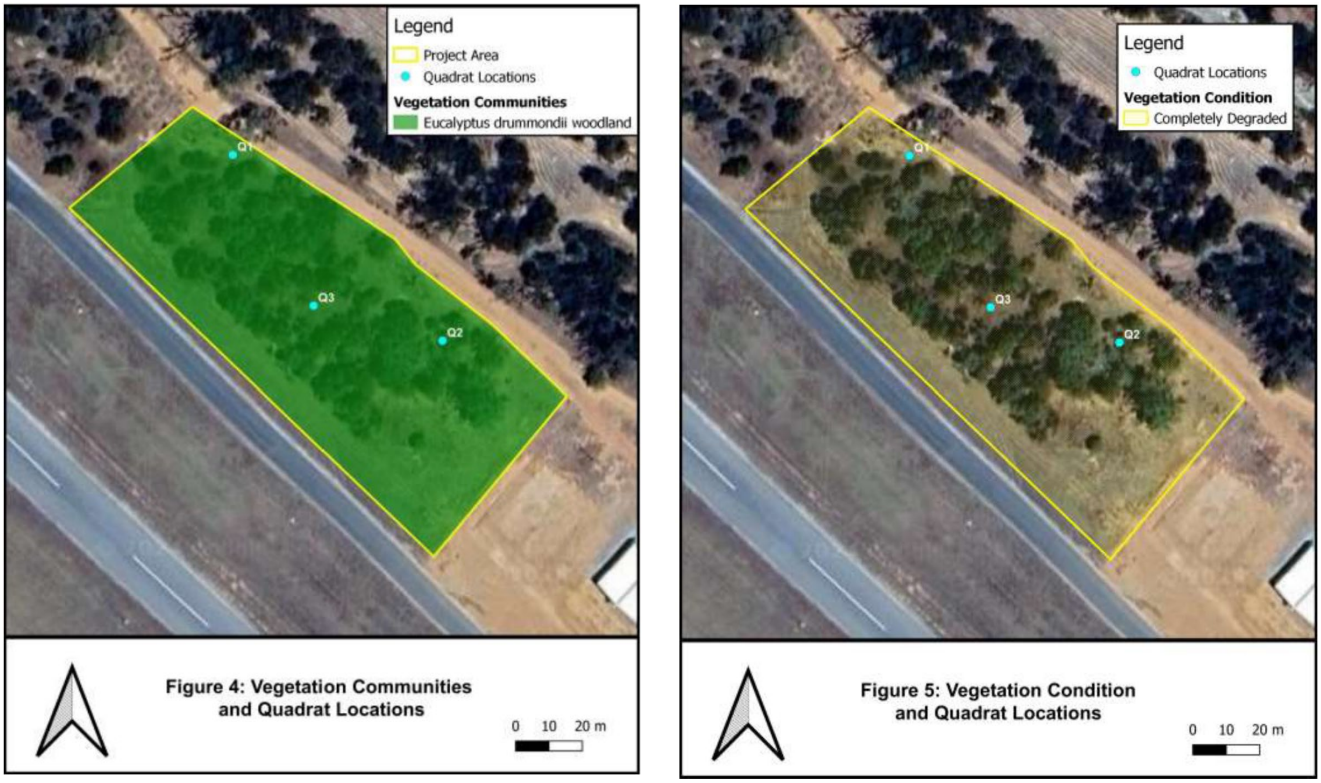
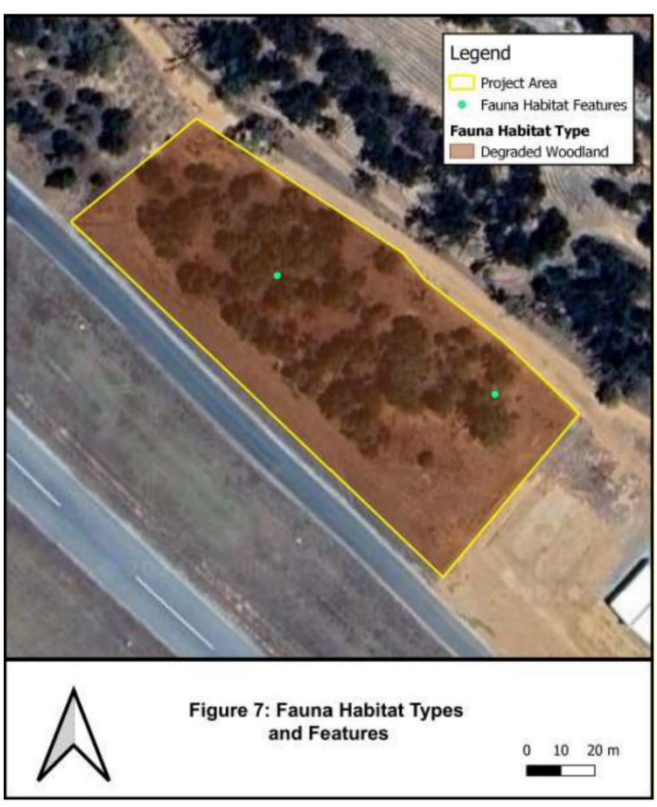


Figure 3. Vegetation type and condition maps.

Fauna Habitat	Fauna Habitat Description	Representative Photo
Open woodland of *Eucalyptus drummondii* Degraded	The survey area is dominated by open woodland of *Eucalyptus drummondii* over tall open scrub of *Acacia acuminata* and *Hakea preissii* over grassland of **Avena barbata* and **Ehrharta longiflora* The habitat is in degraded condition with limited understorey habitat and habitat features. The survey area retains large trees, some fallen logs with hollows for ground dwelling fauna and some rocky areas. There is limited ground coverage.	

Figure 4. Fauna habitat description within the proposed clearing area.



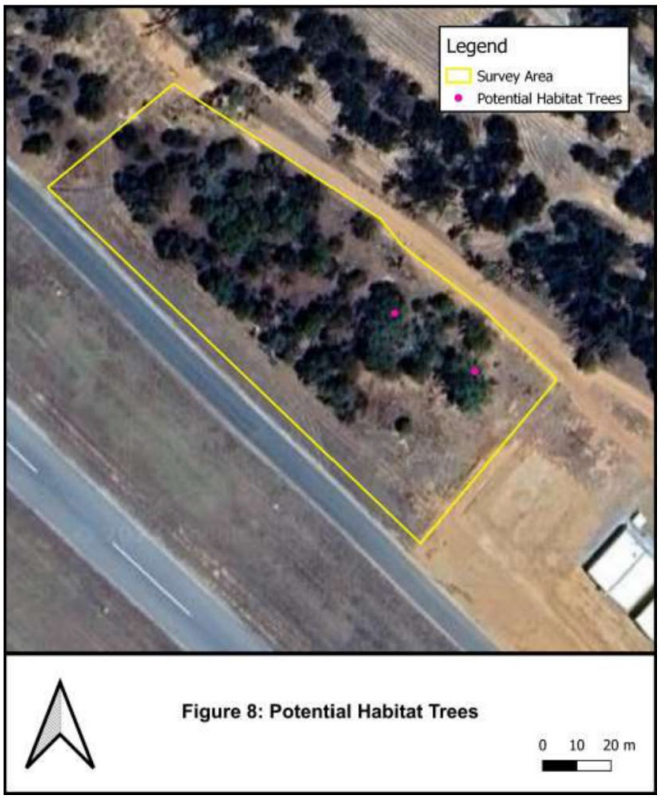


Figure 5. Fauna habitat mapping within the proposed clearing area.

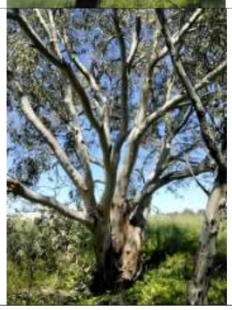
Tree Number	Photo	Tree Species	Height (m)	Hollows	Health	Potential, Suitable, or Known	UTM
1		*Eucalyptus drummondii*	15-20m	Na	Very Good	Na	50 J 470353.37 6500900.934
2		*Eucalyptus drummondii*	15-20m	Na	Very Good	Na	50 J 470376.88 6500883.852

Figure 6. Potential habitat trees within the proposed clearing area.

Shire of Northam Lot 0 Jennapullin Road (Reserve 3203), Southern Brook Basic Fauna and Targeted Black Cockatoo Survey (Aurora Environmental, 2024)

ASPECT		REPRESENTATIVE PHOTO
HABITAT 1: OPEN EUCALYPTUS WOODLAND		
Habitat Structure	*Eucalyptus accedens* (Powderbark Wandoo) Open Woodland. Occasionally patches of *E. salmonophloia* (Salmon Gum) or *E. loxophleba* (York Gum). Over low woodland of *Acacia acuminata* (Jam Wattle) and *Allocasuarina huegeliana* (Rock Sheoak). Areas in Very Good condition had emergent *Banksia sessilis* (Parrot Bush) and *B. prionotes* (Acorn Banksia)	
Presence or absence of refugia	Moderate to high refugia. Many hollow trees and logs. Leaf-litter variable from absent to dense under some trees.	
Presence of absence of wetlands/ waterways	None	
Location of habitat within survey area compared to surrounding landscape	Within Site in highly cleared agricultural landscape. Trees extend along road sides north and south of the site.	
Habitat connectivity	Highly cleared landscape. Trees in road reserve provide habitat corridor to other small patches of native vegetation (mostly revegetation) in the region.	
Current land use and disturbance	Current purpose is for gravel extraction but signposted as a fauna and flora reserve. Historically used for gravel extraction which has left large mounds around the base of some trees that were not removed in the pits. Much of the mid/understorey vegetation is relatively young regrowth. Some very small areas have been burnt in the past 10 years and show signs of regeneration of tree species.	
Evaluation of likelihood of occurrence of conservation significant fauna	Provides many suitable and potential habitat trees for Carnaby's Cockatoos (*Zanda latirostris*). Provides some suitable habitat characteristics for Western Rosella [inland] (*Platycercus icterotis xanthogenys*), Masked Owl [Southwest] (*Tyto novaehollandiae novaehollandiae*), Red-tailed Phascogale (*Phascogale calura*) and South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*).	
Vegetation/ habitat condition	Total: 12.07 ha; Degraded: 3.95 ha; Good: 6.13 ha; Very Good: 1.99 ha	
HABITAT 3: ALLOCASUARINA LOW WOODLAND		
Habitat Structure	Low woodland of *Allocasuarina huegeliana* (Rock Sheoak)	
Presence or absence of refugia	Low to moderate refugia. Some fallen branches. Sparse to high leaf litter depending on density of trees.	
Presence of absence of wetlands/ waterways	None	
Location of habitat within survey area compared to surrounding landscape	Restricted to survey area.	
Habitat connectivity	Low habitat connectivity. Trees in road reserve provide habitat corridor to other small patches of native vegetation (mostly revegetation) in the region.	
Current land use and disturbance	Currently fauna and flora reserve. Historically used for gravel extraction which has left mounds and cleared tracks. Not recently burnt.	
Evaluation of likelihood of occurrence of conservation significant fauna	Provides some suitable habitat for Red-tailed Phascogale (*Phascogale calura*) that may utilise hollow-bearing trees in adjacent habitat types.	
Vegetation/ habitat condition	Total: 9.15 ha; Degraded: 2.51 ha; Good: 6.64 ha	

Figure 7. Mapped habitat types within the proposed offset area.

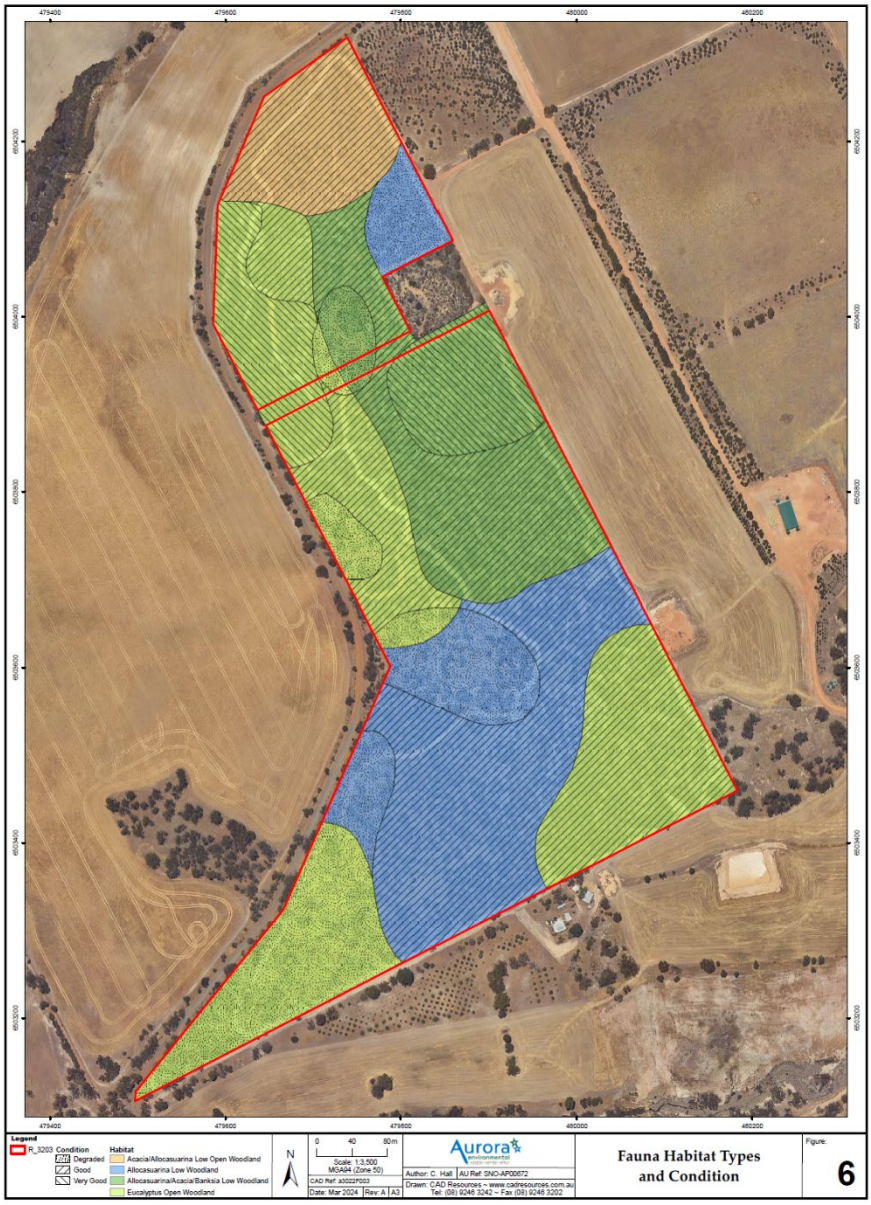


Figure 8. Habitat types mapped within the broader banked offset site. The proposed offset is located in the southwest of the Reserve.

Figure 9. black cockatoo habitat mapped within the broader banked offset site. The proposed offset is located in the southwest of the Reserve.

Appendix G. Sources of information

G.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- 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
- Wheatbelt Wetlands Stage 1 (DBCA-021)

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

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