GOVERNMENT OF
WESTERN AUSTRALIA

# CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

| | |
|---|---|
| **Purpose Permit number:** | CPS 10700/1 |
| **Permit Holder:** | Tronox Management Pty Ltd |
| **Duration of Permit:** | From 16 April 2025 to 16 April 2035 |

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 upgrading an existing crossover.

**2. Land on which clearing is to be done**

Munbinea Road reserve (PIN 11675270), Jurien Bay

**3. Clearing authorised**

The permit holder must not clear more than 0.09 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 16 April 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 *native vegetation* and away from Munbinea Road; and

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

## 8. Revegetation and rehabilitation

Within 24 months of undertaking *clearing* authorised under this permit, and no later than 16 April 2030, the permit holder must:

(a) commence *revegetating* and *rehabilitating* at least 0.18 hectares of *native vegetation* within the area cross-hatched red on Figure 2 of Schedule 2, by:

  (i) deliberately *planting* and/or *direct seeding native vegetation* that:
    (A) will result in vegetation representative of the mapped Beard Vegetation Association *Bassendean 1030*; and
    (B) provides suitable foraging habitat for Carnaby's cockatoo (*Zanda latirostris*).
  (ii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area
  (iii) ensuring *revegetation* and *rehabilitation* is undertaken at the *optimal time*;

(b) undertake watering of *planted* vegetation for at least two years post planting, if required;

(c) implement hygiene protocols by cleaning earth moving machinery of soil and vegetation prior to entering and leaving the area *revegetated* and *rehabilitated*;

(d) establish at least four 5 x 5 metre quadrat monitoring sites within the area *revegetated* and *rehabilitated* as specified in *condition* 8(a);

(e) monitor quadrats specified in *condition* 8(d) at least annually;

(f) engage an *environmental specialist* to undertake the monitoring of quadrats specified in *condition* 8(e);

(g) undertake *weed* control activities on an 'as needs' basis to maintain the minimum criteria specified in Table 3 of Schedule 3;

(h) achieve the Completion Criteria specified in Table 3 of Schedule 3 after a three-year monitoring period for areas *revegetated* and *rehabilitated* under this permit;

(i) undertake *remedial actions* for areas *revegetated* and *rehabilitated* where monitoring indicates that the *revegetation* and *rehabilitation* has not met the Completion Criteria, outlined in Table 3 of Schedule 3, including;

(i) *revegetate* the area by deliberately *planting* and/or *direct seeding native vegetation* that will result in the minimum targets specified in the Completion Criteria in Table 3 of Schedule 3, ensuring only *local provenance* seeds and propagating material are used;
(ii) undertake further *weed* control activities;
(iii) undertake further watering activities, if required; and
(iv) undertake annual monitoring of the *revegetated* and *rehabilitated* area, until the Completion Criteria outlined in Table 3 of Schedule 3 are met.

(j) where an *environmental specialist* determines that the Completion Criteria specified in Table 3 of Schedule 3 has been met, a report is to be submitted to the CEO within three months of the determination being made by the *environmental specialist*.

## PART III - RECORD KEEPING AND REPORTING

### 9. 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;<br>(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;<br>(c) the date that the area was cleared;<br>(d) the size of the area cleared (in hectares);<br>(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with *condition* 5;<br>(f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with *condition* 6; and<br>(g) actions taken in accordance with *condition* 7. |
| 2. | In relation to the revegetation and rehabilitation pursuant to *condition* 8. | (a) a description of the *revegetation* and *rehabilitation* activities undertaken, including *planted* species composition and density, and actions taken to implement watering and *weed* control;<br>(b) the size of the area *revegetated* and |

| No. | Relevant matter | Specifications |
|---|---|---|
| | | *rehabilitated*;<br>(c) the date/s on which the *revegetation* and *rehabilitation* was undertaken<br>(d) the boundaries of the area *rehabilitated* and *revegetated* (recorded digitally as a shapefile using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings);<br>(e) a copy of the *environmental specialist's* monitoring report and determination in accordance with *condition* 8(j); and<br>(f) any other actions taken in accordance with *condition* 8. |

**10. 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 under *condition* 9 of this permit; 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 carried out, must be provided to the *CEO* on or before 31 December 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 this permit, a written report of records required under *condition* 9, where these records have not already been provided under *condition* 10(a).

## DEFINITIONS

In this permit, the terms in Table 2 below have their meanings defined.

**Table 2: Definitions**

| Term | Definition |
|---|---|
| Bassendean 1030 | means low woodland; *Banksia attenuata* and *Banksia menziesii* (Shepherd et al., 2001). |
| 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. |
| 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. |
| dieback | means the effect of Phytophthora species on native vegetation. |

| Term | Definition |
|---|---|
| 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. |
| environmental specialist | means a person who holds a tertiary qualification specialising 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 the 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. |
| local provenance | means native vegetation seeds and propagating material from natural sources within 50 km and 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. |
| optimal time | means the period from May to June for undertaking planting or seeding |
| planting/s/ed | means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species. |
| rehabilitate/ed/ion | means actively managing an area containing native vegetation to improve the ecological function of the area |
| remedial action/s | means any activity that is required to ensure successful reestablishment of vegetation to its pre-clearing composition, structure and density, and may include a combination of soil treatments and *revegetation*. |
| revegetate/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. |
| weeds | means any plant –<br>(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or<br>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or<br>(c) not indigenous to the area concerned. |

**END OF CONDITIONS**

Ray Carvalho
A/MANAGER
NATIVE VEGETATION REGULATION

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

24 March 2025

# Schedule 1

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

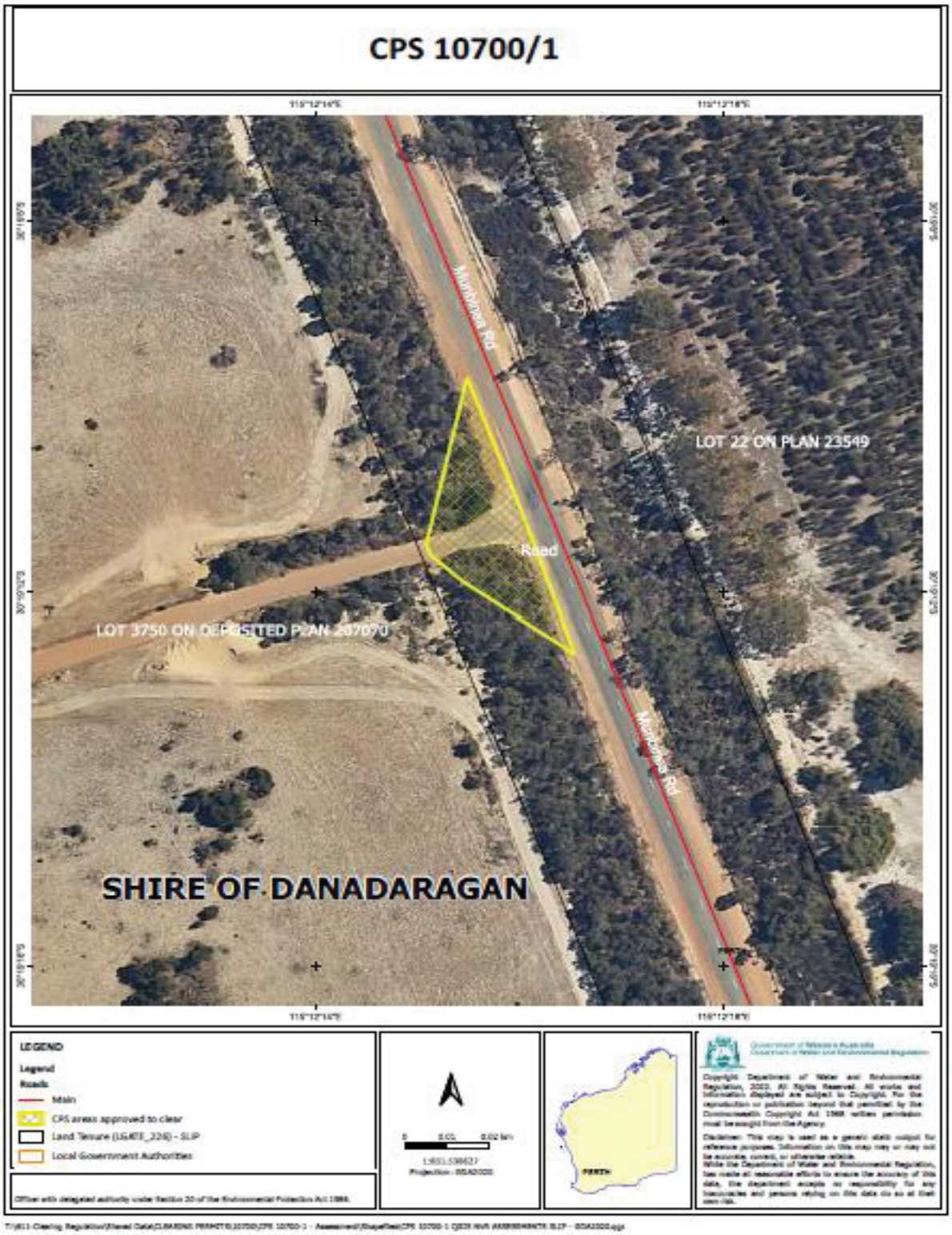



**Figure 1: Map of the boundary of the area within which clearing may occur, cross-hatched yellow.**

## Schedule 2

The boundary of the area subject to revegetation / rehabilitation requirements is shown in the map below (Figure 2).

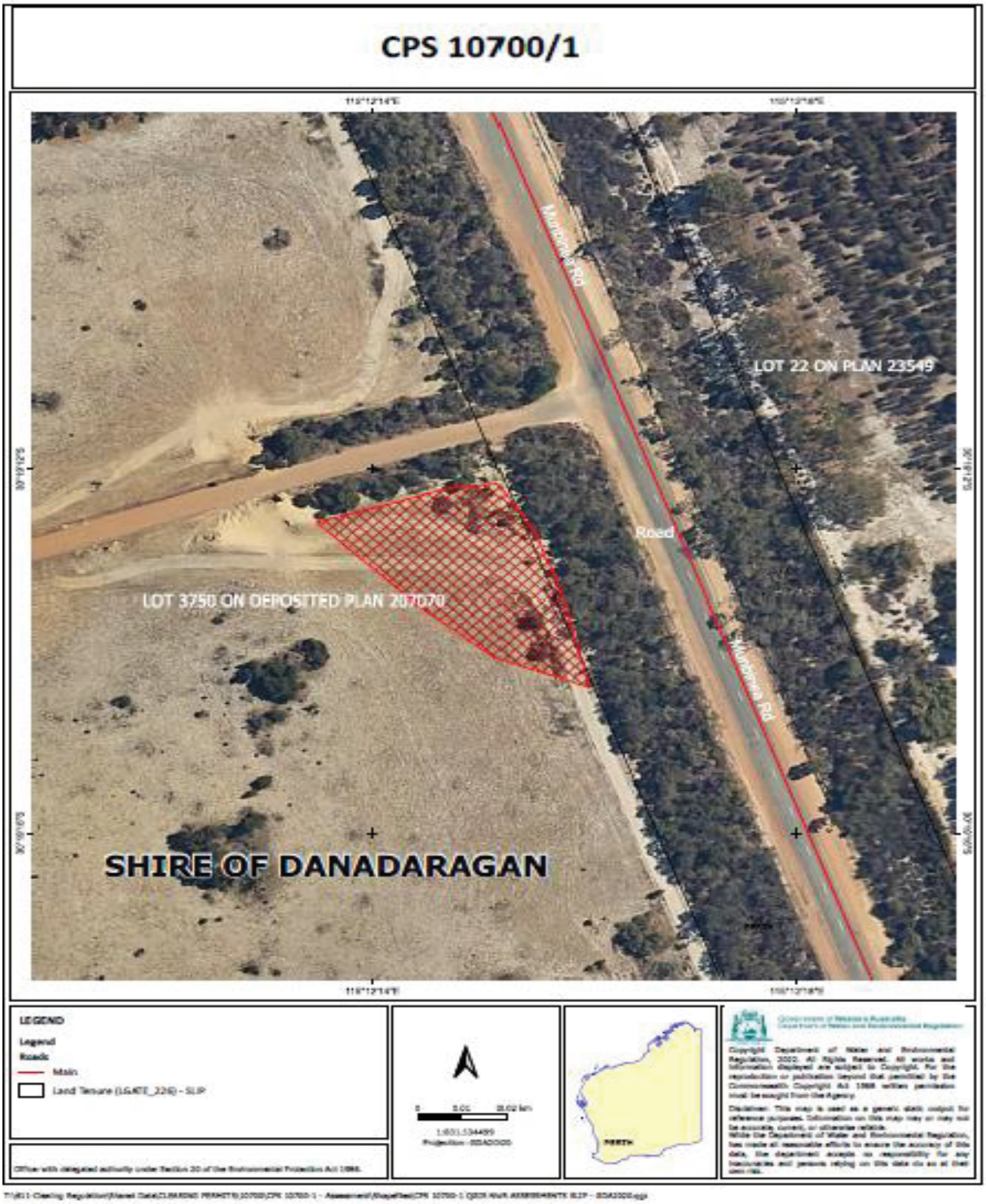



**Figure 2: Map of the boundary of the area subject to *revegetation* and *rehabilitation*, cross-hatched red, in accordance with *condition* 8.**

# Schedule 3

**Table 3: Completion criteria for the *revegetation* and *rehabilitation* area subject to *condition* 8.**

| Aspect | Completion Criteria | Monitoring |
|---|---|---|
| Survival rate to be achieved | The *revegetation*/*rehabilitation* area needs to ensure a survival rate of at least 70 per cent of the seedlings initially planted to be established. | The species in the *revegetation/ rehabilitation* area will be counted annually by an *environmental specialist* in spring for a minimum of three years after the last year plants were established. |
| Carnaby's cockatoo foraging habitat | Vegetation in the *revegetation/rehabilitation* area contains at least 0.18 hectares that provides foraging species suitable for Carnaby's cockatoo with a minimum cover of 60 per cent. | Assessed within the monitoring quadrats annually in spring by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three successive monitoring events). |
| Vegetation Structure | Vegetation in the *revegetation/rehabilitation* area to be representative of the mapped Beard vegetation association; *Bassendean 1030.* | The structure within the monitoring quadrats is to be assessed annually by an *environmental specialist* in spring for a minimum of three years after the last year plants were established. |
| Percentage of *weed* cover | *Weed* coverage within the *revegetation/ rehabilitation* area to have no more than 15 percent weed coverage | Monitor the *revegetation/rehabilitation* area for *weeds* by quadrats annually in spring for a minimum of three years after the last year plants were established. |
| Coverage of bare ground | Bare ground coverage within the *revegetation/rehabilitation* area is no more than 15 per cent. | The patch size of bare ground is to be assessed annually by an *environmental specialist* in spring for a minimum of three years after the last year plants were established. |
| Declared weeds | No Declared Weeds under the *Biosecurity and Agricultural Management Act 2007* present. | Monitor the *revegetation/rehabilitation* area for Declared weeds by monitoring quadrats annually in spring for a minimum of three years after the last year plants were established. |

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 10700/1 |
| **Permit type:** | Purpose permit |
| **Applicant name:** | Tronox Management Pty Ltd |
| **Application received:** | 18 July 2024 |
| **Application area:** | 0.09 hectares of native vegetation within a 0.11-hectare footprint |
| **Purpose of clearing:** | Upgrading existing crossover |
| **Method of clearing:** | Mechanical |
| **Property:** | Munbinea Road reserve (PIN 11675270), Jurien Bay |
| **Location (LGA area/s):** | Jurien Bay |
| **Localities (suburb/s):** | Shire of Dandaragan |

### 1.2. Description of clearing activities

Tronox Management Pty Ltd (Tronox) are proposing to undertake the clearing of native vegetation within Munbinea Road reserve (PIN 11675270), Jurien Bay (see Figure 1, Section 1.5). The clearing is proposed to facilitate upgrades to the existing crossover to address increased demand of the road, while improving the line of sight to allow safe use of this portion of the road (Tronox, 2024).

### 1.3. Decision on application

| | |
|---|---|
| **Decision:** | Granted |
| **Decision date:** | 24 March 2025 |
| **Decision area:** | 0.09 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)
- clearing principles set out in Schedule 5 of the EP Act (see Appendix C)
- findings of a flora, fauna and vegetation survey (see Appendix E)
- relevant datasets (see Appendix F.1)
- applicants demonstrated efforts to avoid and minimise the impacts of clearing (see Section 3.1)
- relevant planning instruments and other matters considered relevant to the assessment (see Section 3); and
- the purpose of the clearing to improve the line of sight for safe use along Munbinea Road.

The assessment identified that the proposed clearing will result in:

- the loss of 0.09 hectares of native vegetation that provides significant foraging habitat for Carnaby's cockatoo (*Zanda latirostris*);
- the loss of 0.09 hectares of native vegetation that is representative of the Banksia Woodlands of the Swan Coastal Plain (Banksia Woodlands) federally listed Threatened Ecological Community (TEC)
- the loss of vegetation that contributes to broader fauna linkage values;
- potential impacts to conservation significant fauna, if present during the clearing activities; 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 considering the above, the Delegated Officer determined the potential impacts to fauna through machinery strike and adjacent vegetation through weed and dieback spread, can be appropriately managed through conditions on the clearing permit. However, the impact to native vegetation that is representative of the Banksia Woodlands TEC and significant foraging habitat for Carnaby's cockatoo, constitutes a significant residual impact.

To address the significant residual impacts, the applicant has proposed to revegetate 0.18 hectares of native vegetation within Lot 3750 on Deposited Plan 207070, Jurien Bay (adjacent to the application area) with *Banksia* woodland species, to create vegetation representative of Beard Vegetation Association 1030 (as mapped within the application area). The Delegated Officer determined that the applicants proposed onsite revegetation actions are sufficient to address the above significant residual impacts, such that an offset to counterbalance these impacts is not required (see Sections 3.2.1 and 3.2.2 for further information on the proposed revegetation actions).

In making this decision, the Delegated Officer considered the extent of the environmental impacts, the applicant's implementation of the mitigation hierarchy, and the consistency of the proposal with the planning framework and public benefit of road safety. The revegetation actions proposed align with the *WA Environmental Offsets Policy* (2011) and *WA Environmental Offsets Guideline* (2014).

The Delegated Officer therefore decided to grant a clearing permit subject to conditions requiring the applicant to:

- undertake avoid and minimise measures to reduce the impacts and extent of clearing
- undertake hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- undertake slow, progressive one directional clearing away from Munbinea Road to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity, and
- undertake the revegetation actions outlined above.

## 1.5. Site map

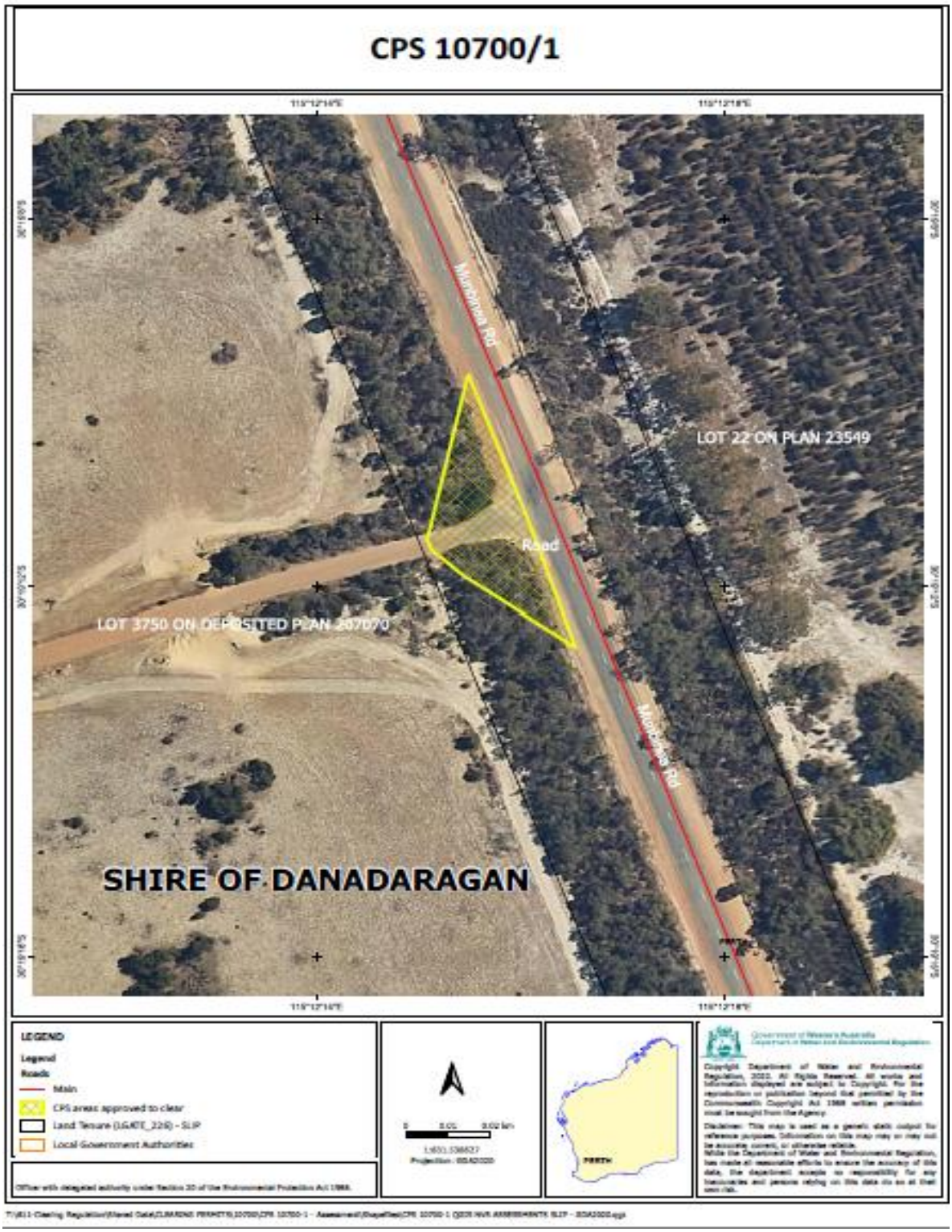



**Figure 1** Map of the application area

The area cross-hatched 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 Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

## 3 Detailed assessment of application

### 3.1. Avoidance, minimisation and mitigation measures

The applicant has advised that the following avoidance, minimisation and mitigation measures will be undertaken (Tronox, 2024):

- The existing crossover will be upgraded in favour of creating a new crossover,
- The proposed clearing will be minimised to the area required for safe line of sight, and
- Vegetative material will be stockpiled on neighbouring land and re-used for revegetation.

On 10 December 2024, DWER sent correspondence to the applicant which outlined the environmental impacts identified during the assessment of the proposed clearing and requested further implementation of the mitigation hierarchy to avoid, minimise and / or mitigate these impacts. In response, the applicant made a commitment to undertake onsite revegetation actions to address the residual impacts of the proposed clearing, which include:

- A commitment to plant and maintain a minimum of 0.18 hectares of native vegetation within Lot 3750 on Deposited Plan 207070, Jurien Bay, that is representative of the mapped Beard Vegetation association 'Bassendean 1030' (described as *Banksia* low woodland) and significant foraging habitat for Carnaby's cockatoo.

Considering the above, the Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid, minimise and mitigate the proposed clearing impacts on environmental values.

### 3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix 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 and vegetation communities). 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

Noting the findings of a Carnaby's Black Cockatoo Habitat Assessment (BCE, 2024), Flora and Vegetation Survey (Umwelt, 2024), and site characteristics (Appendix B) and habitat preferences of conservation significant fauna known from the local area (10-kilometre radius), the application area contains suitable habitat for Carnaby's cockatoo *(Zanda latirostris).*

Carnaby's cockatoo generally breeds in woodland or forest, but also in former woodland/forest present as isolated trees. This species nests in hollows in live or dead trees of salmon gum, wandoo, tuart, jarrah, York gum, karri and marri (DAWE, 2022) Suitable breeding habitat for Carnaby's cockatoo includes trees which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species a suitable DBH is 500 millimetres (DAWE, 2022). As the application area contains *Banksia* species, and no large trees, it is unlikely to provide any significant roosting of breeding value to Carnaby's cockatoo.

Carnaby's cockatoos forage on a range of plant species, predominantly the seeds and flowers of marri, jarrah and proteaceous species (e.g., *Banksia* spp., *Hakea* spp. and *Grevillea* spp.) (DAWE, 2022). The application area contains *Banksia* spp. and evidence of foraging was observed in the Carnaby's Black Cockatoo Habitat Assessment (BCE, 2024) and therefore provides suitable foraging habitat for this species.

The importance of foraging habitat for black cockatoos increases when it occurs within foraging distance of nesting sites (around 12 km) as it supports breeding effort (DPAW, 2013; EPA, 2019). Food resources within the range of roost sites are also important to sustain populations of black cockatoos (EPA, 2019). There is one confirmed roost site for Carnaby's cockatoo within nine kilometres of the application area. This indicates the foraging habitat present within the application area may support foraging for roosting birds.

Noting the above, and the ongoing cumulative loss of foraging habitat for this species on the Swan Coastal Plain, the proposed clearing of 0.09 hectares of native vegetation that provides foraging habitat for Carnaby's cockatoo constitutes a significant residual impact.

To address the above significant residual impact, the applicant has proposed to plant and maintain 0.18 hectares of native vegetation within Lot 3750, on Deposited Plan 207070, Jurien Bay (adjacent to the application area) with *Banksia* woodland species, consistent with the mapped vegetation type; Beard Vegetation Association 1030. This onsite revegetation action will re-instate primary foraging habitat for Carnaby's cockatoo and ensure that the proposed clearing will not result in a decline in the long-term extent of foraging habitat in the local area.

The suitability of the revegetation action to address the impact to Carnaby's cockatoo habitat has been assessed through a calculation consistent with the WA Environmental Offsets Metric Calculator to determine the planting ratio required. It was determined that the revegetation of 0.18 hectares of native vegetation that provides preferred foraging habitat for Carnaby's cockatoo (*Banksia* woodland species), is a suitable revegetation action to address the significant residual impact. The Delegated Officer considered the extent of the proposed impact in making this determination. The revegetation action aligns with the *WA Environmental Offsets Policy* (2011) and *WA Environmental Offsets Guideline* (2014).

While the proposed clearing is not likely to impact on significant habitat for any other fauna species, it may impact on any fauna using the application area at the time of clearing through machinery strike. Undertaking the clearing in a slow, progressive, one directional manner, away from Munbinea Road, would assist in managing this risk.

Ecological Linkage

The application area includes 0.09 hectares of remnant vegetation that forms part of a north-south ecological linkage along this portion of Munbinea Road. The application area likely contributes toward fauna dispersal habitat between larger remnants in the local area. The proposed clearing will not result in a substantially larger gap between vegetation north and south along Munbinea Road and is limited to the west side of Munbinea Road.

Therefore, linkage vegetation on the eastern side of Munbinea Road will remain. Noting the above, the proposed clearing is not likely to reduce the ability of fauna to move through the landscape. The applicants proposed revegetation actions adjacent to the application area (described above), will ensure that the impact to linkage values will not be significant in the long-term.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of 0.09 hectares of significant foraging habitat for Carnaby's cockatoo.

For the reasons set out above, it is considered that the impacts of the proposed clearing on fauna habitat can be appropriately managed through management and revegetation actions which will be conditioned on the clearing permit.

Conditions

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

- Undertake revegetation of 0.18 hectares of native vegetation within Lot 3750, on Deposited Plan 207070, Jurien Bay, with species representative of the mapped Beard Vegetation association 'Bassendean 1030' (described as low *Banksia* woodland) that provide preferred foraging habitat for Carnaby's cockatoo,
- Undertake slow, progressive, one directional clearing away from Munbinea Road, to allow terrestrial fauna to disperse ahead of the clearing activity.

### *3.2.2. Biological values (ecological communities) - Clearing Principles (a) and (d)*

Assessment

A Flora and Vegetation Survey identified the federally listed Banksia Woodlands TEC within the application area (Umwelt, 2024).

According to the approved conservation advice for the Banksia Woodlands TEC, the key diagnostic criteria include the presence of at least one of the four diagnostic *Banksia* species, and distinct low woodland to forest structure comprising a canopy co-dominated by *Banksia attenuata* or *Banksia menziesii*, where the emergent tree layer often includes marri, jarrah, or tuart, over a diverse shrub or herbaceous understorey (TSSC, 2016). The community typically occurs on well drained, low nutrient soils on sandplain landforms, particularly deep Bassendean and Spearwood sands and occasionally on Quindalup sands and is also common on sandy colluvium and aeolian sands of the Ridge Hill Shelf, Whicher Scarp and Dandaragan Plateau (TSSC, 2016).

The thresholds for patch size and condition for the Banksia Woodlands TEC (set out in the approved conservation advice for this community) state that a patch should meet at least Good (Keighery, 1994) condition to be considered part of the listed community. The minimum patch size is dependent on vegetation condition and its overall contribution to diversity, connectivity, and function of the ecological community across the landscape (TSSC, 2016).

One vegetation type was described and identified within the survey area, described as low woodland dominated by *Banksia attenuata*, *Banksia prionotes* and *Banksia menziesii* over mid to low open shrubland over low open sedgeland on white-grey sand on plains (Umwelt, 2024). With consideration of the above thresholds, this vegetation type is considered to represent the Banksia Woodlands TEC. The application area therefore includes 0.09 hectares of this community in a Good (Keighery, 1994) condition. This impact is considered a significant residual impact.

The proposed clearing may also increase the risk of weeds and dieback spreading into adjacent vegetation representative of the Banksia Woodland TEC. Appropriate hygiene protocols would assist in minimising this risk.

The applicant has committed to plant and maintain a minimum of 0.18 hectares of native vegetation within the adjacent Lot 3750 on Deposited Plan 207070, Jurien Bay, to represent the mapped vegetation type within the application area, being Beard Vegetation association 'Bassendean 1030' (described as low woodland of *Banksia attenuata* and *Banksia menziesii*).

This onsite revegetation action will have the effect of reinstating *Banksia* species that are dominant within the Banksia Woodland TEC, adjacent to an existing patch of this community. It will also buffer a portion of an existing patch of the Banksia Woodland TEC within the road reserve immediately south of the application area, from the existing threatening agricultural land use west.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of 0.09 hectares of native vegetation that is representative of the Banksia Woodlands TEC. For the reasons set out above, it is considered that this impact constitutes a significant residual impact that requires addressing through conditions requiring onsite revegetation actions.

Conditions

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

- Undertake revegetation of 0.18 hectares of native vegetation representative of the mapped Beard Vegetation association 'Bassendean 1030' within Lot 3750, on Deposited Plan 207070, Jurien Bay, which will have the effect of reinstating dominant species of the Banksia Woodland TEC and create a buffer to an existing patch of Banksia Woodland TEC from the adjacent threatening land use, and
- Undertake Dieback and weed control, which ensures protocols are put in place to limit the introduction and transportation of dieback and weed affected materials to and from the application area.

## 3.3. Relevant planning instruments and other matters

The Shire of Dandaragan advised DWER that local government approvals are not required, and that the proposed clearing is consistent with the Shire's Local Planning Scheme. The Shire did not have any objections to the proposed clearing (Shire of Dandaragan, 2024).

The application area is located within the Jurien Groundwater Area and the Hill River and Tributaries Catchment Surface Water Area which is proclaimed under the Rights in Water and Irrigation (RIWI) Act. The applicant is not proposing to take any groundwater for this project and therefore licences under the RIWI Act are unlikely to be required in this instance.

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

**End**

# Appendix A. Additional information provided by applicant

| Summary of comments | Consideration of comment |
|---|---|
| Additional information provided by the applicant in response to the Department's request for further information on the 10 December 2024. | Refer to Section 3.1 |

# Appendix B. Site characteristics

## B.1. Site characteristics

The information provided below describes the key characteristics of the application area 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 application area is part of a linear patch of native vegetation within the Munbinea road reserve, in the intensive land use zone of Western Australia. It is surrounded by agricultural land and occasional patches of intact remnant vegetation.<br>The local area (10-kilometre radius from the centre of the area proposed to be cleared) retains around 37.42 per cent of the original native vegetation cover. |
| Ecological linkage | The application area does not intersect any formally mapped ecological linkages. Although, it is likely that the application area is contributing to the ecological function of north-south roadside ecological linkages. |
| Conservation areas | The closest conservation area to the application area is Hill River Nature Reserve which is located approximately 0.97 kilometres north of the application area. |
| Vegetation description | Photographs supplied by the applicant and a Road Reserve Flora and Vegetation survey (Umwelt, 2024) indicate the vegetation within the application area consists of *Banksia* woodland. Representative photos and the full survey descriptions are available in Appendix E.<br>This is consistent with the mapped vegetation type:<br>• Bassendean_1030 which is described as low woodland; *Banksia attenuata* and *Banksia menziesii* (Shepherd et al, 2001)<br>The mapped vegetation type retains approximately 69.55 per cent of the original extent (Government of Western Australia, 2019). |
| Vegetation condition | Photographs supplied by the applicant and a Road Reserve Flora and Vegetation survey (Umwelt, 2024) indicate the vegetation within the application area is in Degraded to Good (Keighery, 1994 –) condition.<br>The full Keighery (1994) condition rating scale is provided in Appendix D.<br>Representative photos and the full survey descriptions are available in Appendix E. |
| Climate | The region experiences a Mediterranean climate with cool winters and hot summers with a mean annual rainfall of 600-1000 mm. |
| Soil description | The soil within the application area is mapped as:<br>• Yerramullah 4 Subsystem which is described as plateau residuals, complex of Ye2 and Ye3: pale sandy gravels, gravelly pale deep sand, shallow gravel over duricrust, pale deep sand, some sandy duplexes, yellow deep sand. |
| Land degradation risk | The soils mapped in the application area are mapped as having a high risk of subsurface acidification and a moderate risk of wind erosion (DPIRD, 2024). |

| Characteristic | Details |
|---|---|
| Waterbodies and hydrogeography | DWERs desktop assessment, the flora and vegetation survey, and aerial imagery indicate that no watercourses or wetlands intersects the application area. The closest watercourse is Hill River located 1.5 kilometres north of the application area.<br>The application area is located within the Jurien Groundwater Area and the Hill River and Tributaries Catchment Surface Water Area, proclaimed under the RIWI Act.<br>Groundwater salinity within the application area is mapped at 3000-7000 milligrams per litre total dissolved solids (moderate). |
| Flora | The desktop assessment identified that 36 conservation significant flora species have been recorded in the local area, comprising five threatened flora species and 31 priority flora species (Western Australian Herbarium, 1998-). None of these existing records occur within the application area, with the closest record being an occurrence of *Phlebocarya pilosissima subsp. teretifolia* (Priority 2) approximately 0.8 kilometres from the application area.<br>No threatened or priority flora were recorded within the application area during an appropriately timed Flora and Vegetation Survey (Umwelt, 2024). |
| Ecological communities | The desktop assessment identified that the application area is within a mapped occurrence of the Banksia Woodlands TEC, which is listed as Endangered under the Commonwealth EPBC Act and is considered a Priority 3 ecological community by the Department of Biodiversity, Conservation and Attractions (DBCA) in Western Australia.<br>The Flora and Vegetation Survey (Umwelt, 2024) of the application area identified that the VT1 vegetation type was an occurrence of the Banksia Woodlands PEC/TEC. Impacts to this community are detailed under Section 3.2.2. |
| Fauna | DWER's desktop assessment identified that six conservation significant fauna species have been recorded within the local area. None of these existing records occur within the application area, with the closest being an occurrence of Carnaby's cockatoo (Endangered) 1.41 kilometres from the application area. Impacts to this species have been detailed under Section 3.2.1. |

## 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* | | | | | |
| Swan Coastal Plain | 1,501,221.93 | 579,813.47 | 38.62 | 222,916.97 | 14.85 |
| Vegetation complex | | | | | |
| Bassendean_1030* | 134,788.56 | 86,013.90 | 63.81 | 14,981.00 | 11.11 |
| Local area | | | | | |
| 10km radius | 31,596.49 | 11,823.60 | 37.42 | - | - |

*Government of Western Australia (2019)

## 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."*<br>Assessment:<br>The application area contains regionally significant vegetation including vegetation that is representative of the Banksia Woodlands TEC and significant foraging habitat for Carnaby's cockatoo. | At variance | Yes<br>*Refer to Section 3.2.1, 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."*<br>Assessment:<br>The area proposed to be cleared contains significant foraging habitat for Carnaby's cockatoo. | At variance | Yes<br>*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."*<br>Assessment:<br>The area proposed to be cleared is unlikely to contain flora species listed under the BC Act or EPBC Act, noting that no such species were identified during an appropriately timed targeted flora survey of the application area (Umwelt, 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."*<br>Assessment:<br>The application area contains approximately 0.09 hectares of native vegetation that is representative of the Banksia Woodlands TEC. | At variance | Yes<br>*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."*<br>Assessment:<br>While the vegetation within the application area has environmental value and is considered a significant remnant, the extent of native vegetation in the local area (37.42%) is consistent with the national objectives and targets for biodiversity conservation in Australia. | Not likely to be at variance | No |
| Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."*<br>Assessment:<br>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** | | |

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|---|---|---|
| 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."*<br>Assessment:<br>Given no watercourses or wetlands are recorded within the application area, and riparian vegetation was not recorded within the application area during the flora and vegetation survey, the proposed clearing is unlikely to impact on riparian vegetation. | 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."*<br>Assessment:<br>The mapped soils are moderately susceptible to wind erosion and highly susceptible to subsurface acidification. Noting the small extent of the application area, the proposed clearing is not likely to cause appreciable 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."*<br>Assessment:<br>Given no watercourses or wetlands are recorded within or nearby the application area, the proposed clearing is unlikely to impact surface or groundwater 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."*<br>Assessment:<br>The mapped permeable soils and topographic contours in the surrounding area indicate the proposed clearing is unlikely to contribute to the increased incidence or intensity of flooding. | 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

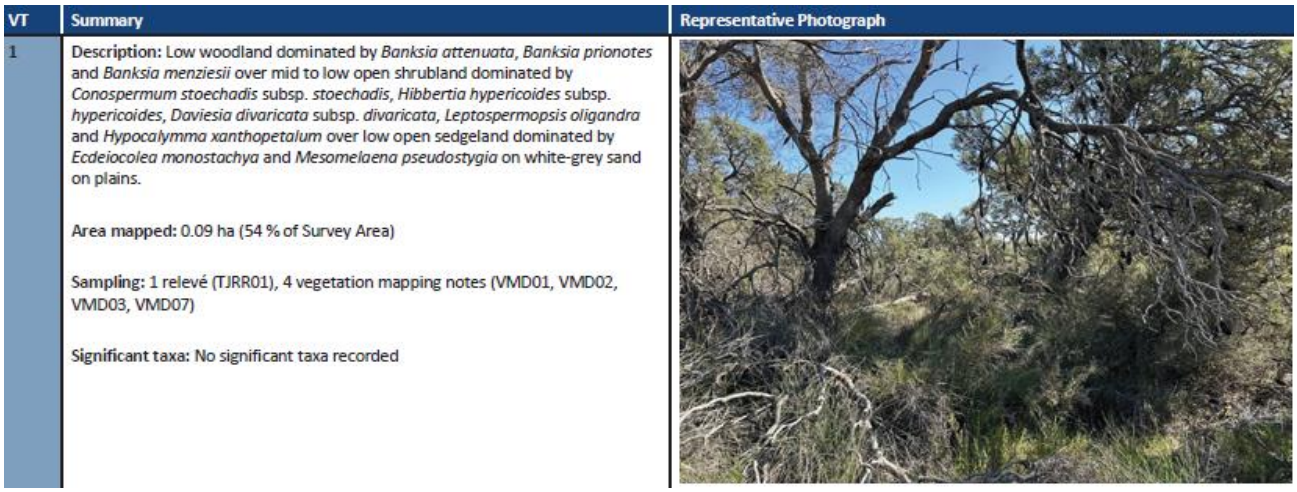
Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

**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. |

| Condition | Description |
|---|---|
| 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 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. Biological survey information excerpts and photographs of the vegetation (Umwelt, 2024)



| VT | Summary | Representative Photograph |
|---|---|---|
| 1 | **Description:** Low woodland dominated by *Banksia attenuata*, *Banksia prionotes* and *Banksia menziesii* over mid to low open shrubland dominated by *Conospermum stoechadis* subsp. *stoechadis*, *Hibbertia hypericoides* subsp. *hypericoides*, *Daviesia divaricata* subsp. *divaricata*, *Leptospermopsis oligandra* and *Hypocalymma xanthopetalum* over low open sedgeland dominated by *Ecdeiocolea monostachya* and *Mesomelaena pseudostygia* on white-grey sand on plains.<br><br>**Area mapped:** 0.09 ha (54 % of Survey Area)<br><br>**Sampling:** 1 relevé (TJRR01), 4 vegetation mapping notes (VMD01, VMD02, VMD03, VMD07)<br><br>**Significant taxa:** No significant taxa recorded | |

**Figure 2.** Summary of Vegetation Type 1 recorded over the entire application area (Umwelt, 2024)


**Figure 3.** Significant vegetation of the survey area (Umwelt, 2024)


**Figure 4.** Condition of the vegetation within the survey area (Umwelt, 2024).

# Appendix F. Sources of information

## F.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)

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