



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 8864/1
File Number: DWERVT5621
Duration of Permit: From 17 March 2022 to 17 March 2024

PERMIT HOLDER

Cooperative Bulk Handling Limited

LAND ON WHICH CLEARING IS TO BE DONE

Lot 4300 on Deposited Plan 30175, Moora

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.051 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

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

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

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

2. Weed and dieback management

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

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

- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner in one direction to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

4. Records that must be kept

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

Table 1: Records that must be kept

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

5. Reporting

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

DEFINITIONS

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

Table 2: Definitions

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

END OF CONDITIONS



Meenu Vitarana

A/MANAGER

NATIVE VEGETATION REGULATION

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

22 February 2022

SCHEDULE 1

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

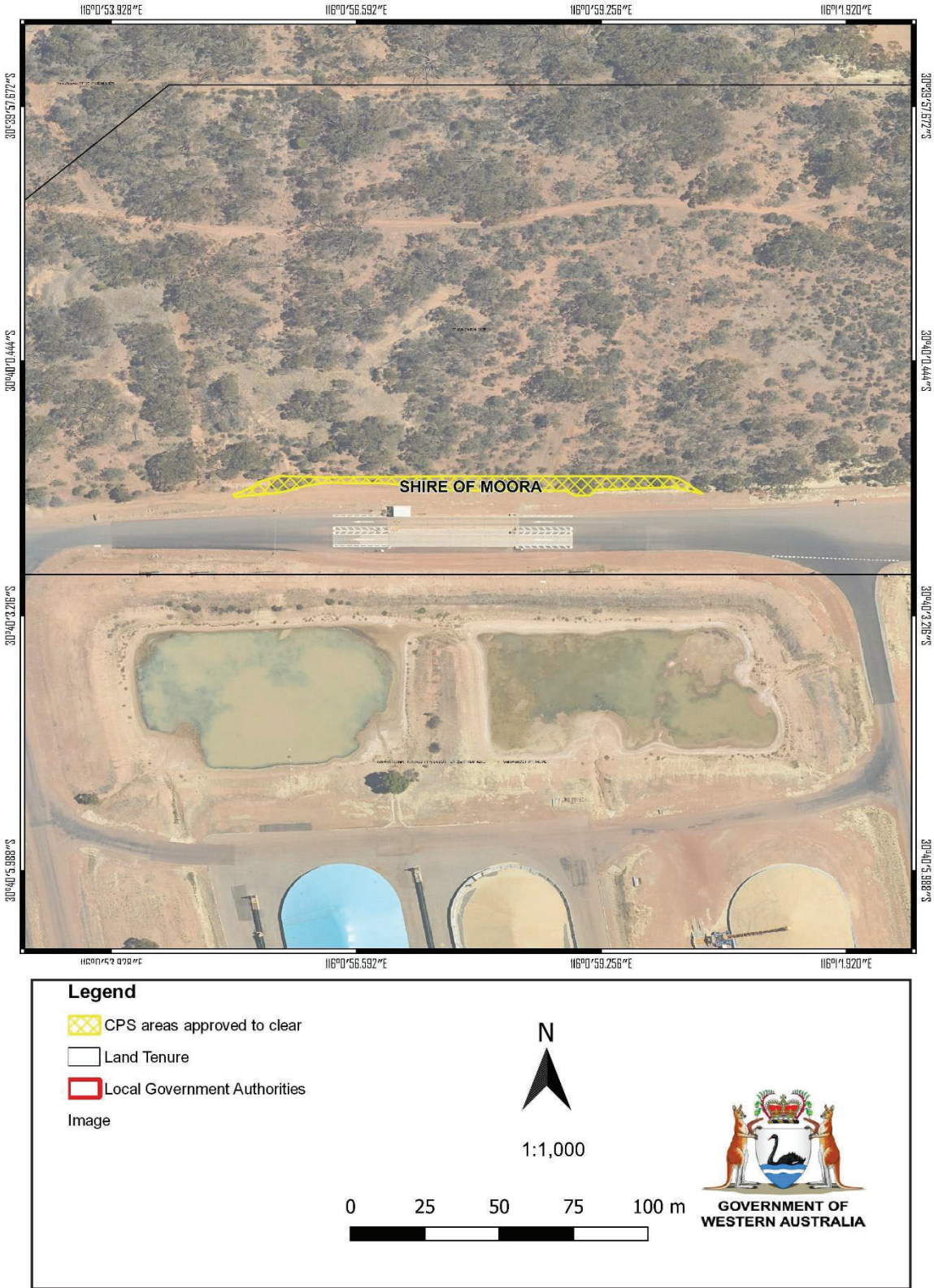


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 8864/1
Permit type:	Area permit
Applicant name:	Cooperative Bulk Handling Limited
Application received:	7 April 2020
Application area:	0.051 hectares of native vegetation
Purpose of clearing:	Expanding existing truck marshalling road and weighbridge areas
Method of clearing:	Mechanical
Property:	Lot 4300 on Deposited Plan 30175
Location (LGA area/s):	Shire of Moora
Localities (suburb/s):	Moora

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area of remnant vegetation adjacent to the existing truck marshalling road and weighbridge areas at the Moora Grain Reveal Site (see Figure 1, Section 1.5). The proposed clearing is to facilitate the expansion of the truck marshalling road and weighbridge areas in order to support a higher volume of heavy vehicle traffic required for the transport of grain to and from the Moora Grain Reveal Site.

The application was revised during the assessment process in response to the findings of a preliminary assessment, which identified that the proposed clearing would result in significant impacts to the Eucalypt woodlands of the Western Australian Wheatbelt (Wheatbelt Woodlands) ecological community and significant remnant vegetation. The changes included a reduction in the total amount of clearing from 1.05 hectares to 0.051 hectares to avoid and minimise the clearing impacts (see Section 3.1 for further details).

1.3. Decision on application

Decision:	Granted
Decision date:	22 February 2022
Decision area:	0.051 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 (the Department) 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 F.1), the findings of a biological survey (360 Environmental, 2019) and a targeted survey for short range endemic (SRE) species and conservation significant invertebrate fauna (Invertebrate Solutions, 2020), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any

other matters considered relevant to the assessment (see Section 3). The Delegated Officer considered the importance of the project in ensuring infrastructure at the Moora Grain Receiving Site was adequate for safe and functional transport of grain by heavy vehicles. The Delegated Officer also took into consideration the significant avoidance and mitigation measures employed by the applicant during the assessment process, which resulted in a reduction the clearing area from 1.05 hectares to 0.051 hectares in order to reduce the significant residual impacts to the proposal.

The assessment identified that the proposed clearing will result in:

- the loss of 0.051 hectares of low quality foraging habitat for Carnaby's cockatoo,
- the loss of 0.051 hectares of vegetation that is representative of the Eucalypt woodlands of the Western Australian Wheatbelt (Wheatbelt Woodlands) ecological community,
- the loss of significant vegetation within an extensively cleared landscape, and
- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to have long-term adverse impacts on biological, conservation, or land and water resource values, and can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values. Given the extent, location, and condition of the application area in the context of the greater patch of remnant vegetation in which it occurs, the Delegated Officer determined that the proposed clearing was unlikely to represent a significant impact to the ongoing maintenance of Carnaby's cockatoo or the Wheatbelt Woodlands ecological community and was unlikely to significantly reduce vegetation extent or ecological linkage values in the extensively cleared local area. The Delegated Officer determined that the potential for direct impacts to fauna and indirect impacts to adjacent significant vegetation can be mitigated through permit conditioning.

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 dieback, and
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

1.5. Site map

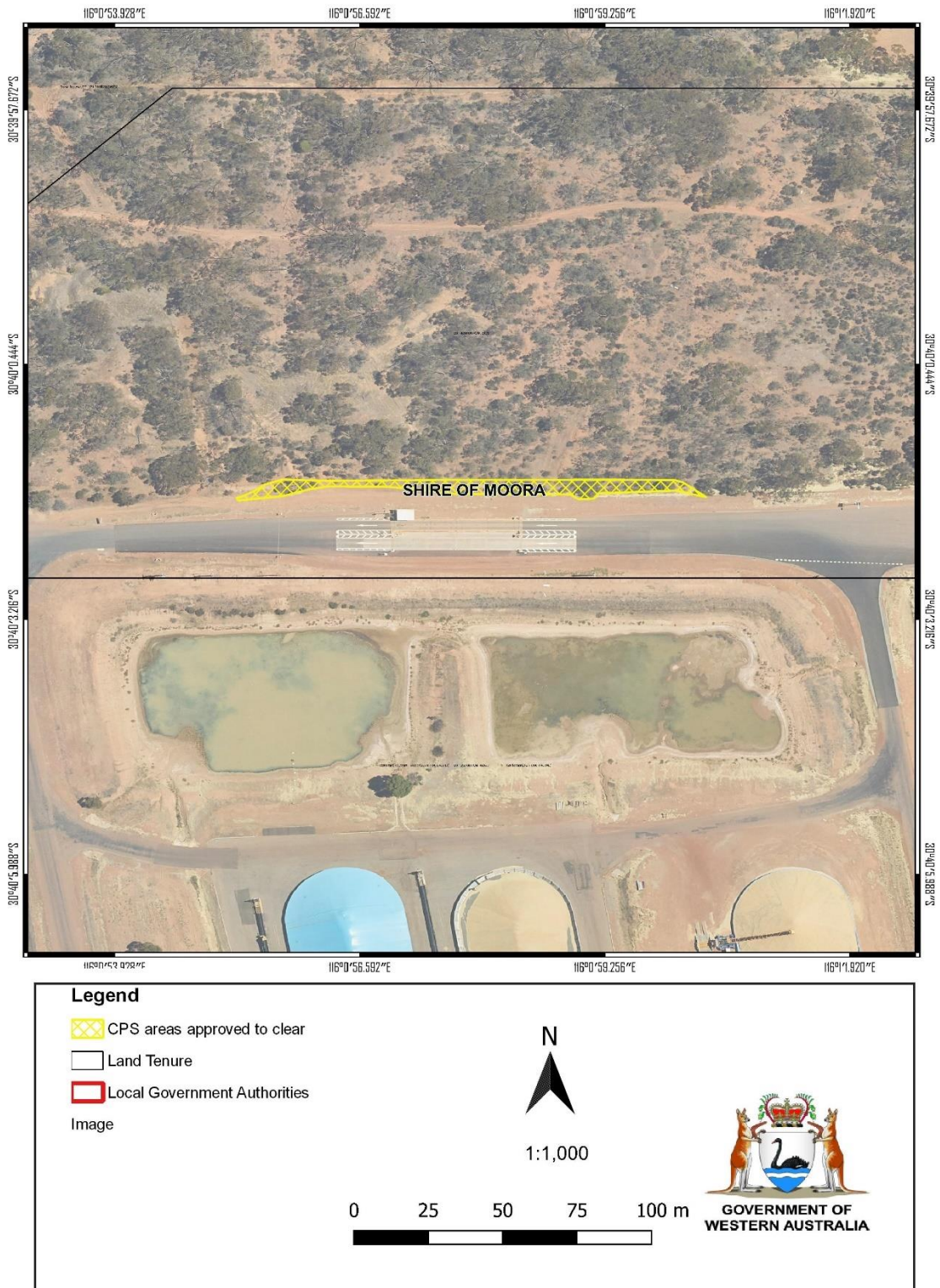


Figure 1 The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a)
- Technical guidance - *Sampling of short range endemic invertebrate fauna* (EPA, 2016b)
- Technical guidance – *Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Avoidance

The applicant submitted environmental management measures in support of the clearing permit application, demonstrating that alternative designs for expanding existing truck marshalling road and weighbridge areas were considered, including expansion on the south-eastern side of the road which would have avoided clearing of native vegetation (360 Environmental, 2020). However, this design was deemed unsuitable due to the proximity of the proposed bypass lane to existing overhead powerlines, as well as the fact that the positioning of the proposed bypass lane may impact drainage to the adjacent containment basin and would have resulted in a significant traffic hazard requiring uncontrolled heavy vehicle crossover (360 Environmental, 2020). As a result, the current design on the north-eastern side of the road was preferred. However, the applicant advised that the proposed expansion has been limited to one lane to minimise the clearing footprint and avoid the clearing of native vegetation where possible (360 Environmental, 2020).

The applicant originally applied to clear 1.05 hectares of native vegetation within Lot 4300 on Deposited Plan 30175, Moora, for the purpose of expanding existing truck marshalling road and weighbridge areas (CBH Group, 2020). During the assessment process, the applicant was advised by the Department that the proposed clearing of 1.05 hectares was likely to result in significant residual impacts to the Wheatbelt Woodlands ecological community, foraging habitat for Carnaby's cockatoo, and significant remnant vegetation within an extensively cleared landscape. The Department advised the applicant that an offset was required to counterbalance the significant residual impacts to these values in accordance with the Government of Western Australia's *Environmental Offsets Policy* and *Environmental Offsets Guidelines*, if the residual impacts could not be mitigated further. It is understood that the applicant undertook an extensive investigation of potential offset sites for acquisition in the local area, including consultation with the Department of Biodiversity, Conservation and Attractions (DBCA), which did not identify any suitable offset sites to counterbalance the significant residual impacts of the proposed clearing (360 Environmental, 2021).

The applicant subsequently undertook a significant redesign of the disturbance footprint for the truck marshalling road and weighbridge areas to avoid and minimise the significant residual impacts of the proposed clearing and reduced the overall clearing footprint to 0.051 hectares (Figure 2; 360 Environmental, 2021). The reduction in the total amount of clearing from 1.05 hectares to 0.051 hectares resulted in the following changes to overall clearing impacts:

- The removal of all Very Good (Keighery, 1994) condition vegetation from the application area, where the clearing area now consists of 0.0473 hectares of vegetation in Good (Keighery, 1994) condition and 0.0036 hectares of vegetation in Degraded (Keighery, 1994) condition,
- A reduction in the clearing of vegetation that is representative of the Wheatbelt Woodlands state-listed priority ecological community (PEC) and federally listed threatened ecological community (TEC) from 1.05 hectares to 0.051 hectares,
- A reduction in the clearing of suitable foraging habitat for Carnaby's cockatoo from 1.05 hectares to 0.051 hectares,
- The removal of all potential black cockatoo breeding and roosting trees from the proposed clearing area, and
- A reduction in the clearing of significant remnant vegetation within an extensively cleared landscape and vegetation that is representative of an extensively cleared vegetation complex from 1.05 hectares to 0.051 hectares (360 Environmental, 2021).

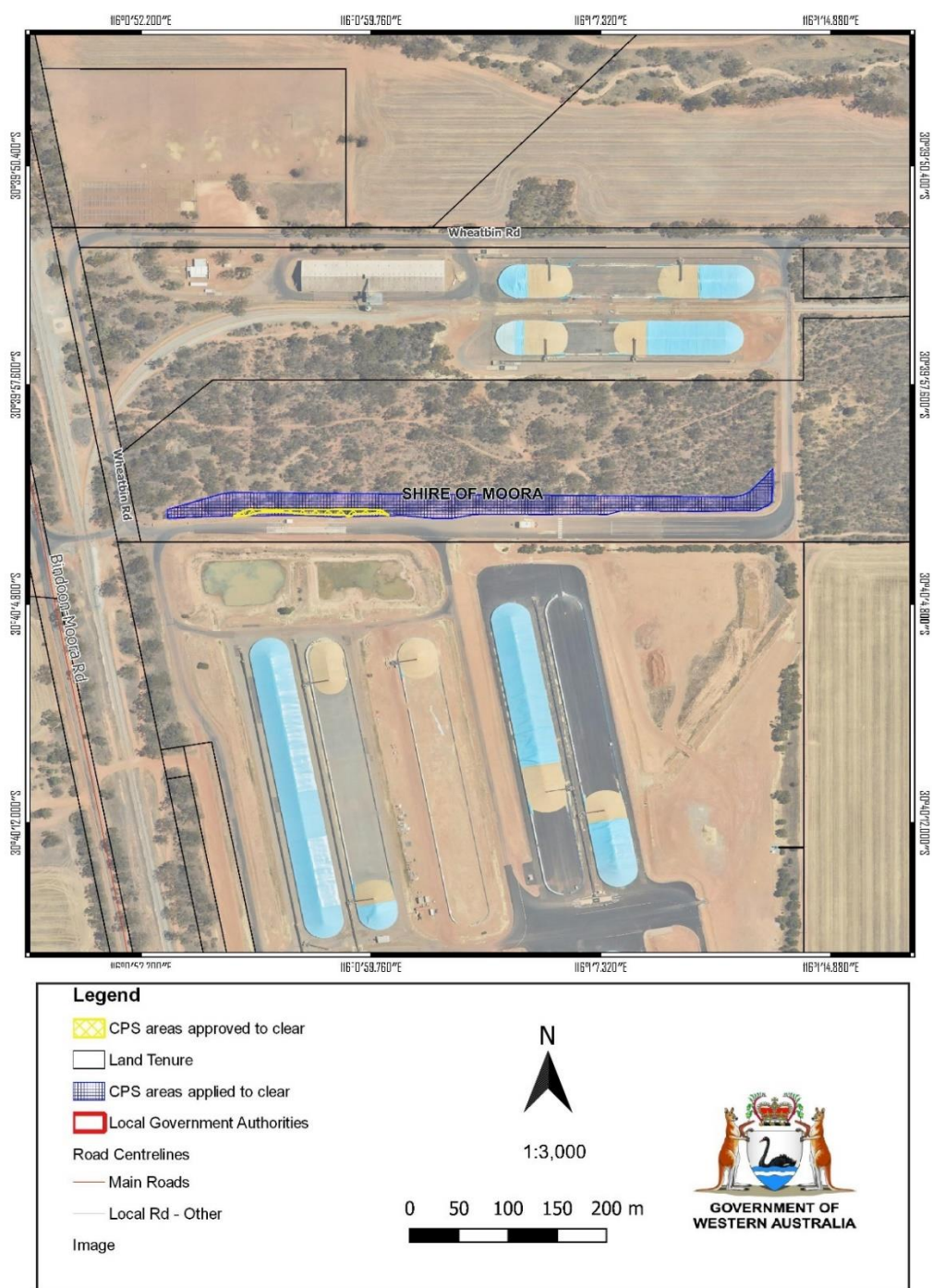


Figure 2. The area crosshatched blue indicates the original disturbance area of 1.05 hectares for CPS 8864/1. The area crosshatched yellow indicates the revised disturbance area of 0.051 hectares.

Mitigation

The applicant has advised that engineering controls will also be implemented onsite to minimise clearing impacts and ensure safe operation during construction (360 Environmental, 2020). The applicant has also indicated that an Environmental Management Plan (EMP) will be developed for the proposed works to mitigate impacts to adjacent vegetation during the pre-construction and construction phases of the project (360 Environmental, 2020). While the specifics of the EMP have not been outlined, the applicant has advised that this plan will include consideration of vegetation management, weed management, and fauna and habitat management, as well as addressing environmental outcomes and performance indicators, management measures and monitoring, contingency response and corrective actions, and environmental management roles and responsibilities (360 Environmental Pty Ltd, 2020). The applicant advised that examples of environmental management measures that will be implemented through the EMP include:

- Demarcation of clearing area with barrier tape or star pickets prior to the commencement of project activities,
- Provision of GPS coordinates of clearing permit area to contractor to ensure no clearing occurs beyond the approved area, and
- Pre-starts for all personnel to make them aware of the requirement to protect native vegetation beyond the approved cleared area (360 Environmental, 2020).

After consideration of the above, the Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values. The Delegated Officer determined that the significant residual impacts of the proposed clearing had been sufficiently avoided and minimised to the extent that a suitable environmental offset was no longer required.

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, flora and ecological communities) and significant remnant vegetation. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

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

Assessment

Noting the site characteristics and habitat preferences of the conservation significant fauna species recorded in the local area (see Appendix B), the application area was considered to contain suitable habitat for the following species:

- *Calyptorhynchus latirostris* (Carnaby's cockatoo) (listed as Endangered under the BC Act and EPBC Act),
- *Falco peregrinus* (peregrine falcon) (listed as other specially protected fauna by DBCA), and
- *Idiosoma dandaragan* (Dandaragan Plateau shield-backed trapdoor spider) (listed as Priority 2 (P2) by DBCA).

This was supported by the findings of the '*Biological Assessment Moora Grain Receival Site, Moora*' (360 Environmental, 2019) and the '*Desktop assessment and targeted survey for SRE and Conservation Significant Invertebrate Fauna for the Moora Grain Receival Site*' (Invertebrate Solutions, 2020).

It is acknowledged that the biological assessment also identified that the survey area may provide suitable habitat for *Apus pacificus* (pacific swift) (360 Environmental, 2019). However, the pacific swift is a non-breeding migrant to Western Australia and is almost exclusively aerial, typically flying between one and 300 metres above ground over a range of habitats (DAWE, 2022). The species has also not been recorded within a 10-kilometre radius of the application area (DBCA, 2007-) and is more likely to be transient in the airspace above the application area than utilising the terrestrial habitat on ground. Therefore, it is considered unlikely that the pacific swift will be present within the application area at the time of clearing or is reliant on the vegetation within the application area to provide suitable habitat in the local area.

Carnaby's cockatoo

Ecological linkage

Noting that the local area is highly modified and that a large degree of historical clearing has occurred for agricultural purposes, the application area and greater bushland remnant may provide an ecological linkage for Carnaby's cockatoos moving through the local area between breeding, roosting and foraging sites. A black cockatoo habitat

assessment was undertaken by 360 Environmental in September 2019 as part of the biological assessment of the Moora Grain Receival Site (360 Environmental, 2019). The black cockatoo habitat assessment observed two individual Carnaby's cockatoos within the greater survey area, which covered the 7.73-hectare patch of remnant vegetation within Lot 4300 on Deposited Plan 30175 (360 Environmental, 2019). The individuals were noted to land on a *Eucalyptus loxophleba* subsp. *loxophleba* (York gum) and rest briefly before leaving, however no evidence of foraging or any other use of the area by these individuals was observed (360 Environment, 2019). Noting this and that the application area is located within an extensively cleared landscape (see Section 3.2.4), it is likely that the application area is being utilised by Carnaby's cockatoo as an ecological linkage. However, it is acknowledged that the revised application area comprises a linear 0.051-hectare strip of native vegetation on the edge of an approximately 9.3-hectare patch of remnant vegetation (7.73 hectares within Lot 4300 on Deposited Plan 30175 and 1.57 hectares within the adjacent Lot 4171 on Deposited Plan 219837) and adjacent to the existing truck marshalling road. Therefore, it is not expected that the proposed clearing will significantly reduce the capacity of the remaining 9.25-hectare patch to act as an ecological linkage or will result in significant impacts to Carnaby's cockatoos moving through the local area.

Breeding habitat

Carnaby's cockatoo is known to nest in hollows of live and dead trees, primarily *Eucalyptus wandoo* (wandoo) and *Eucalyptus salmonophloia* (salmon gum), but may also include *Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah), *Eucalyptus diversicolor* (karri), *Eucalyptus gomocephala* (tuart), and other *Eucalyptus* spp. (Commonwealth of Australia, 2012). 'Breeding habitat' for Carnaby's cockatoo includes trees of these species that either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow, where suitable DBH for nest hollows is 500 millimetres for most tree species but may be reduced to 300 millimetres for wandoo and salmon gum (Commonwealth of Australia, 2012). While breeding, Carnaby's cockatoos also generally forage within a 6-to-12-kilometre radius of their nesting site (Commonwealth of Australia, 2012). As the application area includes York gum and wandoo, occurs within an area of suitable foraging habitat, and is located within the modelled breeding range for Carnaby's cockatoo, the application area is considered to comprise potential breeding habitat for Carnaby's cockatoo.

The black cockatoo habitat assessment identified 21 potential breeding trees of suitable DBH within the greater survey area of Lot 4300 on Deposited Plan 30175, including 12 York gums and nine wandoo (360 Environmental, 2019). Nine of these potential breeding trees contained hollows, one of which had an opening diameter greater than 12 centimetres and was considered likely to be of suitable size for use for breeding by Carnaby's cockatoo (360 Environmental, 2019). However, no evidence of breeding such as observations of individuals or chew marks around hollow entrances was observed in any potential breeding trees within the survey area (360 Environmental, 2019).

The original clearing footprint for CPS 8864/1 included two potential breeding trees, however, the revised application area of 0.051 hectares excluded both potential breeding trees and does not contain any York gums of DBH 500 millimetres or greater or wandoo of DBH 300 millimetres or greater (360 Environmental, 2019). Therefore, the application area is not considered to contain any suitable breeding hollows for Carnaby's cockatoo and is unlikely to comprise significant breeding habitat for the species, at present. Given the above and that all 21 potential breeding trees within the greater patch of remnant vegetation will be retained, the proposed clearing is not considered likely to significantly impact breeding by Carnaby's cockatoo in the local area.

Roosting habitat

It is recognised that the potential breeding trees within the greater patch of remnant vegetation may also represent suitable roosting habitat for Carnaby's cockatoo. However, the closest confirmed roosting site for the species is approximately 17 kilometres west of the application area and no evidence of roosting was observed during the black cockatoo habitat assessment (360 Environmental, 2019). Further, roosting is typically noted to occur within suitable trees close to an important water source and within an area of quality foraging habitat (Commonwealth of Australia, 2012). As the application area and greater patch of remnant vegetation does not transect any permanent watercourses and comprises secondary foraging habitat for Carnaby's cockatoo (see below), it is unlikely to be providing significant roosting habitat in the local area. Given this and that the revised application area of 0.051 hectares does not contain potential breeding trees and is unlikely to include any habitat trees of suitable size for roosting, the proposed clearing is not considered likely to result in the loss of significant roosting habitat for any black cockatoo species.

Foraging habitat

Carnaby's cockatoos forage on the seeds, nuts, and flowers of a variety of plants, including Proteaceous species (*Banksia* spp., *Hakea* spp., and *Grevillea* spp.), as well as *Allocasuarina* and *Eucalyptus* species, marri and a range of introduced species (Commonwealth of Australia, 2012). The referral guidelines for black cockatoo species acknowledges that foraging habitat within 12 kilometres of a breeding site and within six kilometres of a night roost is of particular importance for Carnaby's cockatoo (Commonwealth of Australia, 2012). According to available

databases, the application area is not located within six kilometres of a night roost. However, 132 confirmed Carnaby's cockatoo breeding sites occur within a 12-kilometre radius of the application area, the closest being approximately 0.7 kilometres from the application area. Therefore, the vegetation within the application area has the potential to support foraging by breeding individuals.

The black cockatoo habitat assessment identified that the dominant flora species within the application area and greater remnant are likely to provide foraging habitat for Carnaby's cockatoo, including York gum, *Hakea preissii* (needle tree) and *Grevillea bitemata* (360 Environmental, 2019). However, these species were considered to provide low quality foraging habitat for Carnaby's cockatoo compared to more favourable species such as *Banksia* spp. and marri which are not present within the survey area (360 Environmental, 2019). The black cockatoo habitat assessment identified no evidence of foraging by Carnaby's cockatoo within the application area or the greater bushland remnant (360 Environmental, 2019). Based on the findings of the black cockatoo habitat assessment, the original clearing footprint for CPS 8864/1 was considered to contain 1.05 hectares of potential foraging habitat for Carnaby's cockatoo. The revised application area has therefore, reduced the proposed clearing of potential foraging habitat from 1.05 hectares to 0.051 hectares.

Critical habitat for Carnaby's cockatoo includes any habitat that provides for feeding, watering, regular night roosting and potential for breeding (DPAW, 2013). Therefore, as the application area includes 0.051 hectares of foraging habitat within 12 kilometres of confirmed breeding sites, it may meet the definition of critical habitat for Carnaby's cockatoo. However, the vegetation within the application area comprises a linear 0.051-hectare strip of native vegetation in Good to Degraded (Keighery, 1994) condition, within which foraging habitat is limited to individual specimens or patches of foraging trees adjacent to the existing truck marshalling road, based on aerial imagery and photographs from the black cockatoo habitat assessment (360 Environmental, 2019). Further, the dominant flora species within the application area are not preferred foraging habitat and are common species throughout the Avon Wheatbelt region. Although the application area occurs within an extensively cleared region, it is also acknowledged that approximately 3,270 hectares of remnant native vegetation persists within the local area according to available databases, much of which is likely to comprise similar quality foraging habitat to that present within the application area. Therefore, the application area represents approximately 0.002 per cent of all remnant vegetation in the local area. Given the above, the extent and quality of foraging habitat proposed to be cleared, and the significant reduction in the proposed clearing of foraging habitat from 1.05 to 0.051 hectares, it is not considered likely that the foraging habitat within the application area is significant for the ongoing maintenance of Carnaby's cockatoo.

While the loss of 0.051 hectares of low quality foraging habitat within the application area may not represent a significant impact to the continuation of Carnaby's cockatoo, it is acknowledged that the proposed clearing may result in impacts to the Carnaby's cockatoo populations utilising the application area for local foraging, particularly during breeding in nearby areas. However, the black cockatoo habitat assessment did not identify evidence of current or historical foraging by Carnaby's cockatoos within the application area or greater bushland remnant (360 Environmental, 2019). Further, approximately 9.25 hectares of foraging habitat in similar or better quality to the application area will be retained immediately adjacent to the clearing area and will continue to provide foraging habitat for local populations of Carnaby's cockatoo. Noting the above, while the application area is likely to provide foraging habitat for Carnaby's cockatoo, the proposed clearing is not considered likely to significantly impact Carnaby's cockatoo foraging in the local area.

Peregrine falcon

The peregrine falcon typically nests on rocky ledges in tall, vertical cliff faces and gorges, or in tall trees associated with drainage lines, and can hunt in a range of habitat types including timbered watercourses, riverine environments, wetlands, plains, open woodlands, and pylons and spires of buildings (Australian Museum, 2021). The biological assessment identified that the peregrine falcon may occur within the survey area based on its widespread distribution and ability to persist in various habitat types, but that breeding or long-term occupation is unlikely given the lack of preferred breeding habitat (360 Environmental, 2019). Noting that the peregrine falcon is a highly mobile species with a large home range that does not rely on specialist niche habitats, the species is likely to be transient in the application area only and it is unlikely that the application area represents significant habitat for the species. Further, noting that the application area comprises a linear 0.051-hectare strip of disturbed native vegetation adjacent to the existing truck marshalling road and that approximately 9.25 hectares of suitable habitat immediately adjacent to the clearing area will be retained, it is unlikely that the proposed clearing will result in significant impacts to available foraging habitat for the peregrine falcon.

Invertebrate fauna

The Dandaragan Plateau shield-backed trapdoor spider (*Idiosoma dandaragan*) is a member of the sigillate complex and has a restricted distribution along the eastern margin of the Dandaragan Plateau, from near New Norcia in the south, and north to at least the Watheroo National Park (Rix et al., 2018). The biology and ecology of the Dandaragan Plateau shield-backed trapdoor spider is poorly known, but the species has a known extent of occurrence of

approximately 1,230 kilometres squared (km²), where the area of occupancy within that range is less than 500 km² at less than 10 severely fragmented sites (Rix et al., 2018). Based on the distribution and extent of existing records, the site characteristics and the poorly known ecology of the species, the application area was considered to provide suitable habitat for the Dandaragan Plateau shield-backed trapdoor spider.

A targeted survey for SRE and conservation significant invertebrate fauna was undertaken in March 2020 within the entire 7.73-hectare patch of remnant vegetation within Lot 4300 on Deposited Plan 30175 (Invertebrate Solutions, 2020). Targeted searches for the Dandaragan Plateau shield-backed trapdoor spider including active searches of soil and leaf litter were undertaken, and no individuals or evidence of burrows were identified within the survey area (Invertebrate Solutions, 2020). The targeted survey identified that the survey area has been disturbed by minor earth works and rabbit diggings in most areas, which had degraded potential habitat for the Dandaragan Plateau shield-backed trapdoor spider (Invertebrate Solutions, 2020). It is also noted that the application area comprises a linear 0.051-hectare strip of disturbed native vegetation adjacent to the existing truck marshalling road and that approximately 9.25 hectares of suitable habitat immediately adjacent to the clearing area will be retained. Given the above, the application area is not considered likely to contain significant habitat for the Dandaragan Plateau shield-backed trapdoor spider.

It is acknowledged that the desktop assessment associated with the targeted survey for SRE and conservation significant invertebrate fauna identified an additional five likely or confirmed SRE species and an additional three conservation significant invertebrate species that may have suitable habitat within the application area (Invertebrate Solutions, 2020). However, no evidence of these species was observed in active searches during the targeted survey, which noted that significant impacts to any SRE or conservation significant invertebrate fauna species was unlikely when considering the disturbance to the site (Invertebrate Solutions, 2020). While the application area is not considered likely to contain significant habitat for SRE and conservation significant invertebrate fauna, it is acknowledged that the proposed clearing has the potential to result in direct impacts to individuals and other ground-dwelling fauna species that may be present at the time of the clearing. A directional clearing condition requiring clearing to be done progressively in one direction, to allow fauna to move into adjacent suitable habitat is considered to mitigate this risk.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of 0.051 hectares of non-preferred foraging habitat for Carnaby's cockatoo. For the reasons set out above, it is considered that the impacts of the proposed clearing on Carnaby's cockatoo foraging habitat are unlikely to be significant given the extent and quality of foraging habitat proposed to be cleared and the significant reduction in the proposed clearing of foraging habitat from 1.05 to 0.051 hectares. The Delegated Officer determined that potential direct impacts to fauna during clearing can be mitigated through management conditions and that the proposed clearing does not constitute a significant residual impact.

The applicant may have notification responsibilities under the EPBC Act for impacts to Carnaby's cockatoo and its habitat, as set out in the EPBC Act referral guidelines for the species. It is understood that the applicant has referred the original project (that proposed to clear 1.05 ha) to the federal Department of Water, Agriculture and the Environment (DAWE), who are considering the project under EPBC 2020/8661.

Conditions

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

- Directional clearing, which requires slow, progressive, one directional clearing to allow terrestrial fauna to disperse ahead of the clearing activity should they occur on site at the time of clearing.

3.2.2. Biological values (flora) - Clearing Principles (a) and (c)

Assessment

A flora and vegetation survey was undertaken within the application area in September 2019, where the greater survey area extended over the 7.73-hectare patch of remnant vegetation within Lot 4300 on Deposited Plan 30175 (360 Environmental, 2019). No threatened or priority flora species were identified within the application area or greater survey area at the time of the survey (360 Environmental, 2019). Given the timing of the survey and the perennial nature of the species identified in the desktop assessment, it is considered likely that conservation significant flora species present within the survey area would have been identified during the flora and vegetation survey, with the exception of *Calytrix ecalycata* subsp. *pubescens* (P1) and *Styloidium* sp. Moora (P2).

Calytrix ecalycata subsp. *pubescens* is a yellow-flowered shrub known from five Western Australian Herbarium records between Dandaragan and Moora and is typically associated with orange-brown sand or loamy clay soils on

upper slopes in woodland and open shrubland (Western Australian Herbarium, 1998-). Although the flora and vegetation survey was undertaken during the flowering period of *Calytrix ecalycata* subsp. *pubescens*, it was noted that the species still has the potential to occur across the survey area due to the limited available information regarding the species' ecology (360 Environmental, 2019). While it is acknowledged that *Calytrix ecalycata* subsp. *pubescens* is poorly recorded, it is noted that the species has typically been observed in largely intact and undisturbed open shrubland and that no existing records occur within the same soil system as the application area. Further, the application area comprises a linear 0.051-hectare strip of disturbed native vegetation adjacent to the existing truck marshalling road that is outside of the current range of the species. Given the extent and location of the proposed clearing, it is considered unlikely that the application area contains significant habitat for *Calytrix ecalycata* subsp. *pubescens* or is critical to the ongoing maintenance of the species.

Stylidium sp. Moora is a stilted, creeping perennial herb with pink flowers occurring between September and November and is associated with sandy soils over laterite in Allocasuarina and Acacia open shrubland, often with a canopy of wandoo (Western Australian Herbarium, 1998-). *Stylidium* sp. Moora is known from 20 Western Australian Herbarium records between Moora and Gingin (Western Australian Herbarium, 1998-). The flora and vegetation survey was also undertaken during the flowering period of *Stylidium* sp. Moora, however it was noted that the species still has the potential to occur across the survey area due to the limited rainfall experienced by the region in the three months prior to the survey and the nature of herb species (360 Environmental, 2019). While it is acknowledged that the timing of the flora and vegetation survey may not have been adequate to rule out the occurrence of *Stylidium* sp. Moora within the survey area, it is noted that this species has typically been observed in diverse open shrubland (Western Australian Herbarium, 1998-). The application area consists of York gum woodland in Good to Degraded (Keighery, 1994) condition that has been subject to historical disturbance and is unlikely to represent the diversity associated with significant habitat for *Stylidium* sp. Moora. Given the extent of the proposed clearing and the distribution and extent of existing records of the species, it is not considered likely that the proposed clearing will result in impacts to significant habitat for *Stylidium* sp. Moora.

It is acknowledged that the flora and vegetation survey identified an additional five species as having a medium likelihood of occurrence and noted that the survey effort may not have been adequate to identify these species within the survey area due to the limited rainfall experienced prior to the survey, including *Haloragis platycarpa* (listed as Critically Endangered under both the BC Act and EPBC Act), *Caladenia dundasiae* (P1), *Babingtonia cherticola* (P3), *Stylidium periscelianthum* (P3), and *Stylidium sacculatum* (P3) (360 Environmental, 2019). However, while the flora and vegetation survey identified that the application area may provide suitable habitat, it is noted that these species are not known to occur within a 10-kilometre radius of the application area. Further, the proposed clearing will result in the removal of a linear 0.051-hectare strip of York gum woodland in Good to Degraded (Keighery, 1994) condition that has been subject to historical disturbance and ongoing edge effects from the existing truck marshalling road. Given the extent and location of the proposed clearing, the distribution and extent of existing records, and the condition of the vegetation within the application area, the proposed clearing is unlikely to represent a significant impact to the conservation status or ongoing maintenance of these species.

Conclusion

Based on the above assessment, the proposed clearing is not considered likely to represent significant habitat for any threatened or priority flora species or to be critical for the continuation of these species. For the reasons set out above, it is considered that impacts to conservation significant flora species are unlikely to result from the proposed clearing and that this does not constitute a significant residual impact.

Conditions

No flora management conditions required.

3.2.3. Biological values (ecological communities) - Clearing Principles (a) and (d)

Assessment

A review of available databases determined that the application area is mapped within 100 metres of an occurrence of the Wheatbelt Woodlands ecological community, listed as a Priority 3 PEC under the state BC Act and as a Critically Endangered TEC under the federal EPBC Act. The approved conservation advice for the federally listed Wheatbelt Woodlands TEC states that the key diagnostic criteria for the community includes occurrence within specified Interim Biogeographic Regionalisation of Australia (IBRA) Bioregions and sub-regions, woodland structure in which the minimum crown cover of the tree canopy is 10 per cent, dominant or co-dominant canopy species are specified *Eucalyptus*, and a native understorey is present but is of variable composition, being a combination of grasses, other herbs and shrubs (DoE, 2015). The key diagnostic criteria for the Wheatbelt Woodlands TEC also include thresholds for patch size based on Keighery (1994) condition scales, cover of exotic plants (weeds), and abundance of mature trees (DoE, 2015). The descriptions, patch size and condition thresholds that apply to the federally listed TEC also apply to the Wheatbelt Woodlands PEC (DFCA, 2021).

The flora and vegetation survey identified that the York gum woodland within the greater survey area is likely to be representative of the Wheatbelt Woodlands ecological community, given that it meets the following criteria:

- Located within the Avon Wheatbelt IBRA Bioregion and within a consistent subregion; the Katanning (AVW1) subregion,
- Includes consistent dominant canopy species; York gum,
- Canopy cover of dominant species within the application area is greater than 10 per cent,
- Includes consistent native understorey species; *Allocasuarina huegeliana*, *Hakea preissii* and *Podolepis lessonii*, and
- The greater bushland remnant meets the minimum condition and patch size thresholds; 7.73 hectares of vegetation consistent with Wheatbelt Woodland, of which 4.75 hectares is in Very Good (Keighery, 1994) condition, 2.39 hectares is in Good (Keighery, 1994) condition, 0.21 hectares is in Degraded (Keighery, 1994) condition, and 0.38 hectares is in Completely Degraded (Keighery, 1994) condition (360 Environmental, 2019).

The original application proposed to clear 1.05 hectares of native vegetation that is representative of the Wheatbelt Woodlands ecological community, including 0.47 hectares of vegetation in Very Good (Keighery, 1994) condition, 0.52 hectares in Good (Keighery, 1994) condition, 0.06 hectares in Degraded (Keighery, 1994) condition, and 0.10 hectares in Completely Degraded (Keighery, 1994) condition (360 Environmental, 2020). To minimise residual impacts to the Wheatbelt Woodlands ecological community, the applicant undertook a significant redesign of the disturbance footprint for the truck marshalling road and weighbridge areas and reduced the proposed clearing area to 0.051 hectares (360 Environmental, 2021). The revised application area of 0.051 hectares will result in the clearing of 0.0473 hectares of Good (Keighery, 1994) condition and 0.0036 hectares Degraded (Keighery, 1994) condition vegetation that is representative of the Wheatbelt Woodlands ecological community (360 Environmental, 2021).

Although the proposed clearing will result in the loss of vegetation that is representative of a TEC and PEC, it is acknowledged that the extent of impacts to the Wheatbelt Woodlands ecological community will be a 0.051-hectare strip of disturbed vegetation adjacent to the existing truck marshalling road and on the edge of a 7.73-hectare patch of Wheatbelt Woodland. Further, the proposed clearing will result in the loss of less than 0.7 per cent of the total patch of Wheatbelt Woodland and less than 0.003 per cent of all mapped occurrences of the Wheatbelt Woodlands ecological community in the local area. As the flora and vegetation survey only covered vegetation within Lot 4300 on Deposited Plan 30175, it is also noted that the additional 1.57 hectares of connected vegetation within the adjacent Lot 4171 on Deposited Plan 219837 may also be representative of the Wheatbelt Woodlands ecological community and extend the total patch size of Wheatbelt Woodland to 9.3 hectares. To the Department's knowledge, no future clearing of native vegetation is planned within Lot 4300 on Deposited Plan 30175 at this time.

The approved conservation advice for the Wheatbelt Woodlands TEC recommends that further clearance and fragmentation of high-quality sites is avoided or restricted, to ensure that existing patches are not allowed to fall below the patch size and condition thresholds to be considered part of the listed ecological community (DoE, 2015). The conservation advice also recommends avoiding impacts to areas of Wheatbelt Woodlands TEC that contain mature, hollow-bearing trees and habitat for conservation significant or restricted species (DoE, 2015). It is acknowledged that the revised application area has excluded areas of better-quality vegetation within the greater patch and has removed significant habitat values including large habitat trees. Given the extent, location, and condition of the application area, it is not considered likely that the proposed clearing will result in the loss or fragmentation of a high-quality occurrence of the Wheatbelt Woodlands ecological community or will cause the greater patch to fall below the current patch size and condition thresholds. Therefore, it is unlikely that the proposed clearing will result in significant impacts to the environmental values of the greater patch of Wheatbelt Woodland or that the application area is significant for the ongoing maintenance of the Wheatbelt Woodlands ecological community.

However, it is acknowledged that the proposed clearing will expose the adjacent vegetation within the patch of Wheatbelt Woodlands to a greater risk of disturbance through edge effects such as dieback and weed invasion and anthropogenic disturbance through use of the truck marshalling road, which may result in indirect impacts to the overall quality and ecological function of the remaining community. However, given extent, location, and condition of the application area, it is not considered likely that the proposed clearing will significantly increase the risk of degradation to the adjacent vegetation within the Wheatbelt Woodlands ecological community and the impacts are expected to be manageable with conditions.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of 0.051 hectares of vegetation that is representative of the Wheatbelt Woodlands TEC and PEC. For the reasons set out above, it is considered that the direct impacts of the proposed clearing on the Wheatbelt Woodlands TEC and PEC are unlikely to constitute a significant residual impact and that the application area is unlikely to be significant for the ongoing maintenance of

the greater patch of Wheatbelt Woodland in which it occurs and for the Wheatbelt Woodlands ecological community as a whole. It is considered that the indirect impacts of the proposed clearing can be managed by taking steps to minimise the risk of the introduction and spread of weeds and dieback into the greater patch of Wheatbelt Woodland and does not constitute a significant residual impact.

The applicant may have notification responsibilities under the EPBC Act for impacts to the Wheatbelt Woodland TEC, as set out in the EPBC Act referral guidelines. It is understood that the applicant has referred the original project (with the larger footprint) to DAWE, who are considering the project under EPBC 2020/8661.

Conditions

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

- Dieback and weed control, which ensures protocols are put in place to limit the introduction and transportation of dieback- and weed-affected materials.

3.2.4. Significant remnant vegetation - Clearing Principles (e)

Assessment

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). Noting that the current vegetation extent for the Avon Wheatbelt IBRA Bioregion, mapped Beard vegetation association (142), and local area all fall below the 30 per cent threshold (see Appendix B.2), the application area is considered to be a remnant within an extensively cleared landscape. Noting that the application area comprises York gum woodland consistent with Beard vegetation association 142 (see Appendix B), the application area is also representative of an extensively cleared vegetation complex.

Although the revised application area includes foraging habitat for Carnaby's cockatoo, vegetation that is representative of the Wheatbelt Woodlands ecological community, and vegetation within Beard vegetation association 142, it is acknowledged that the vegetation within the application area is unlikely to be contributing significantly to these values in the context of the greater patch of remnant vegetation and the broader landscape (see Sections 3.2.1 and 3.2.3). It is also acknowledged that the proposed clearing will result in the loss of a linear 0.051-hectare strip of disturbed native vegetation on the edge of an approximately 9.3-hectare patch of remnant vegetation and will not significantly reduce the environmental values of the greater remnant or the capacity of the remnant to act as an ecological linkage in the extensively cleared landscape, noting that approximately 9.25 hectares of remnant vegetation directly adjacent to the clearing area will be retained. Further, the application area comprises approximately 0.002 per cent of all remnant vegetation in the local area and less than 0.0001 per cent of all vegetation mapped within Beard vegetation association 142 in the Avon Wheatbelt IBRA Bioregion. Therefore, while the application area occurs within an extensively cleared area and may contain significant vegetation, the proposed clearing is not considered likely to have a significant impact on vegetation extent or environmental values within the extensively cleared local area.

However, given the application area is disturbed, it is acknowledged that the proposed clearing may cause degradation of adjacent and nearby remnant native vegetation in the extensively cleared landscape by facilitating the spread of weeds and dieback, including into occurrences of the Wheatbelt Woodlands ecological community. A weed and dieback management condition is considered to minimise this risk, and it is not considered likely that the proposed clearing will have a significant indirect impact on nearby significant remnant vegetation.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to result in significant impacts to vegetation extent or significant environmental values within an extensively cleared area or to impact significant ecological linkages but may facilitate the spread of weeds and dieback into adjacent retained vegetation in the local area. For the reasons set out above, it is considered that the impacts of the proposed clearing can be managed to be environmentally acceptable by taking steps to minimise the risk of the introduction and spread of weeds and dieback and does not constitute a significant residual impact.

Conditions

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

- Dieback and weed control, which ensures protocols are put in place to limit the introduction and transportation of dieback- and weed-affected materials.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on the Department of Water and Environmental Regulation's website on 4 May 2020, inviting submissions from the public within a 21-day period. No submissions were received in relation to this application.

The applicant has obtained a Development Approval subject to conditions from the Shire of Moora for the proposed expansion of the truck marshalling road and weighbridge areas at Lot 4300 on Deposited Plan 30175, Moora, and related upgrades and additions to existing grain handling and storage facilities within Lot 250 on Deposited Plan 65581 (360 Environmental, 2020). The Shire of Moora were invited to provide comments on the clearing permit application. To date, no response has been received.

The development of the Moora Grain Reveal Site is currently being assessed separately by the Commonwealth Department of Agriculture, Water and the Environment (DAWE) under the EPBC Act (reference 2020/8661 - Moora Grain Reveal Site, Moora, WA). On 3 July 2020, DAWE determined that the project is a controlled action that requires assessment and approval under the EPBC Act. DAWE is yet to finalise a decision on the referral. It is understood that the applicant has proposed to amend the referred area from 1.05 hectares to 0.051 hectares to align with CPS 8864/1 and that consultation with DAWE regarding the impacts of the revised area on the controlled action is ongoing (360 Environmental, 2019).

The Department has received a related clearing permit application (CPS 9352/1) for the proposed clearing of 1.7 hectares of native vegetation within for a new 'single' siding and batch weigher, as part of the upgrades to the CBH Grain Reveal Site at Moora. CPS 9352/1 occurs immediately south of Lot 4300 on Deposited Plan 30175 within Lot 8 on Deposited Plan 419100, Moora. The Department notes that the assessment of CPS 9352/1 will consider the cumulative impacts of currently approved clearing activities on significant environment values, including foraging habitat for Carnaby's cockatoo, Wheatbelt Woodlands ecological community, and significant remnant vegetation. CPS 9352/1 is currently under assessment by the Department and a decision is yet to be finalised.

The applicant has advised that approximately 0.0018 hectares of the 0.051 hectares of native vegetation proposed to be cleared under CPS 8864/1 occurs within an existing offset area associated with an expired clearing permit application (CPS 602/3) (360 Environmental, 2021). It is understood that the approved offset proposal associated with CPS 602/3 involved the rehabilitation and revegetation of four sites within the Shire of Moora, including Lot 4300 on Deposited Plan 30175, to address the loss of vegetation comprising a high level of biodiversity and vegetation that is significant as a remnant of native vegetation in an area that has been extensively cleared. Given the extent, location, and condition of the vegetation proposed to be cleared within the offset area, it is not considered likely that the proposed clearing will compromise the efficacy of the offset or will result in significant impacts to the quality of revegetated areas within the greater Lot 4300 on Deposited Plan 30175.

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

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
Following a preliminary assessment and request for further information by the Department, the applicant provided additional avoidance and minimisation measures, including a reduction in the proposed clearing area from 1.05 hectares to 0.051 hectares on 13 December 2021 (360 Environmental, 2021).	The avoidance and minimisation measures proposed by the applicant were considered under <i>Avoidance and mitigation measures</i> (see Section 3.1)

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of an approximately 9.3-hectare isolated patch of native vegetation in the intensive land use zone of Western Australia, including approximately 7.73 hectares within Lot 4300 on Deposited Plan 30175 and 1.57 hectares within the adjacent Lot 4171 on Deposited Plan 219837. It is surrounded by the existing truck marshalling road and weighbridge areas of the Moora Grain Receival Site. An approximately 21.1-hectare remnant of native vegetation persists to the east of the area proposed to be cleared but is separated from the greater patch of remnant by road infrastructure. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 10.6 per cent of the original native vegetation cover (see Appendix B.2).
Ecological linkage	The application area does not intersect any formally mapped ecological linkages. Although the application area is surrounded by historically cleared agricultural and industrial land and does not provide connectivity to larger remnants of native vegetation in the local area, it is noted that the vegetation is likely to be contributing to connectivity in an extensively cleared landscape.
Conservation areas	The closest conservation area is an unnamed Nature Reserve, located approximately 0.3 kilometres north-west and separated from the application area by historically cleared agricultural land and established road infrastructure.
Vegetation description	<p>A flora and vegetation survey undertaken by 360 Environmental in September 2019 indicates the vegetation within the proposed clearing area consists of tall woodland of <i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i> (York gum) and <i>Allocasuarina huegeliana</i> (rock sheoak) over tall shrubland of <i>Hakea preissii</i>, <i>Acacia lineolata</i> subsp. <i>lineolata</i>, <i>Grevillea biternata</i> over open forbland of <i>Podolepis lessonii</i> and introduced species such as <i>Briza maxima</i> and <i>Monoculus monstrosus</i>, described as vegetation unit EIHp (360 Environmental, 2019). Representative photos, the full survey descriptions and mapping are available in Appendix E.</p> <p>This is broadly consistent with the mapped Beard vegetation association 142, which is described as medium woodland of York gum and <i>Eucalyptus salmonophloia</i> (salmon gum) (Shepherd et al, 2001).</p>
Vegetation condition	The flora and vegetation survey undertaken by 360 Environmental in September 2019 indicates the vegetation within the proposed clearing area ranges from Good to Degraded (Keighery, 1994) condition, described as:

Characteristic	Details
	<ul style="list-style-type: none"> • Good: Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it, and • Degraded: Basic vegetation structure severely impacted by disturbance with scope for regeneration but not to a state approaching good condition without intensive management (Keighery, 1994). <p>The full Keighery (1994) condition rating scale is provided in Appendix D. Representative photos, the full survey descriptions and mapping are available in Appendix E.</p>
Climate and landform	<p>The application area occurs on flat topography and varies slightly between 210 m Australian Height Datum (AHD) to 211 m AHD (360 Environmental, 2020). The application area has a mean annual maximum temperature of 25.9°C and a mean annual minimum temperature of 12.0°C. The mean annual rainfall and the annual evapotranspiration rate are both 500 millimetres.</p>
Soil description and land degradation risk	<p>The soil within the application area is mapped within the Ranfurly 1 Subsystem (256Ra_1) described as an alluvial plain of Moore River comprising loamy earths, clays and minor sandy earths (DPIRD, 2022).</p> <p>The soil types within the application area are mapped as having a low risk of land degradation resulting from water erosion, wind erosion and salinity, but as having a moderate to high risk of waterlogging, flooding, phosphorus export, and subsurface acidification (DPIRD, 2021).</p>
Waterbodies and hydrogeography	<p>The desktop assessment and aerial imagery indicated that the application area does not transect any natural sources of surface water. The closest natural watercourse to the application area is Yadgea Brook, a non-perennial tributary of Moore River, located approximately 0.5 kilometres north and separated from the application area by historically cleared agricultural land and road infrastructure. The closest wetlands to the application area are an inundated inland flat approximately 4.5 kilometres south-west and a peripheral basin within the Moore River Catchment approximately 5.8 kilometres north-west of the application area.</p> <p>The application area is mapped within the Gingin Groundwater Area, a proclaimed groundwater area under the <i>Rights in Water and Irrigation Act 1914</i> (the RIWI Act). The application area does not transect any proclaimed surface water areas or any water resources proclaimed under either the <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> or <i>Country Areas Water Supply Act 1947</i> (CAWS Act).</p> <p>Groundwater salinity within the application area is mapped at 7000 to 14000 milligrams per litre total dissolved solids.</p>
Flora	<p>The desktop assessment identified that a total of 19 rare flora species have been recorded within the local area, comprising one Priority 1 (P1) flora, three Priority 2 (P2) flora, nine Priority 3 (P3) flora, two Priority 4 (P4) flora, and four threatened flora (Western Australian Herbarium, 1998-). None of these existing records occur within the application area, with the closest record being an occurrence of <i>Eremophila scaberula</i> (T) approximately 1.6 kilometres from the application area.</p> <p>With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), the habitat preferences and conservation statuses of the aforementioned species, the distribution and extent of existing records, and biological survey information as summarised above (360 Environmental, 2019), the application area may provide suitable or significant habitat for threatened or priority flora species and impacts to two flora species required further consideration (see Appendix B.3).</p>

Characteristic	Details
Ecological communities	<p>The desktop assessment identified that the closest state-listed threatened ecological community (TEC) is an occurrence of the Vegetation alliances on ridges and slopes of the chert hills of the Coomberdale Floristic Region (Coomberdale chert hills) TEC, located approximately 2.6 kilometres north-east of the application area, separated by historically cleared land and road infrastructure.</p> <p>The closest state-listed priority ecological community (PEC) is an occurrence of the Eucalypt woodlands of the Western Australian Wheatbelt (Wheatbelt Woodlands) PEC, located approximately 100 metres south-west of the application area, separated by industrial and road infrastructure. However, the flora and vegetation survey undertaken by 360 Environmental in September 2019 identified that the vegetation within the application area is likely to be representative of the Wheatbelt Woodlands PEC (360 Environmental, 2019) and impacts to this ecological community required further consideration.</p>
Fauna	<p>The desktop assessment identified that a total of 12 threatened or priority fauna species have been recorded within the local area, including four threatened fauna species, five priority fauna species, two fauna species protected under international agreement, and one other specially protected fauna species (DBCA, 2007-). None of these existing records occur within the application area, with the closest record being an occurrence of <i>Calyptrorhynchus latirostris</i> (Carnaby's cockatoo) approximately 170 metres from the application area.</p> <p>With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), the habitat preferences and conservation statuses of the aforementioned species, the distribution and extent of existing records, and biological survey information (Invertebrate Solutions, 2020; 360 Environmental, 2019), the application area may provide suitable habitat for three conservation significant fauna species and impacts to these species required further consideration (see Appendix B.4).</p>

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	1.84
Beard vegetation association*					
142	787,948.47	208,347.17	26.44	8,177.57	1.04
Beard vegetation association within IBRA Bioregion*					
142 (Avon Wheatbelt)	637,707.53	79,309.95	12.44	3,125.40	0.37
Local area					
10-kilometre radius	30,908.35	3,271.56	10.58	-	-

*Government of Western Australia (2019)

B.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), the distribution and extent of existing records, and biological survey information (360 Environmental, 2019), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records in local area (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Calytrix ecalycata</i> subsp. <i>pubescens</i>	P1	Y	Y	N	7.7	1	N
<i>Stylidium</i> sp. Moora (J.A. Wege 713)	P2	Y	Y	Y	7.8	1	N

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

B.4. Fauna analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), the distribution and extent of existing records, and biological survey information (Invertebrate Solutions, 2020; 360 Environmental, 2019), impacts to the following conservation significant fauna required further consideration.

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 in local area (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	Y	Y	0.17	96	Y
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Y	Y	4.04	1	Y
<i>Idiosoma dandaragan</i> (Dandaragan Plateau shield-backed trapdoor spider)	P2	Y	Y	5.44	2	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, OS: Other specially protected fauna

B.5. Ecological community analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), the distribution and extent of existing records, and biological survey information (360 Environmental, 2019), impacts to the following conservation significant ecological communities required further consideration.

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
Eucalypt woodlands of the Western Australian Wheatbelt (Wheatbelt Woodlands)	P3	Y	Y	Y	0.1	Y

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

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared contains regionally significant ecological communities and habitats, including foraging habitat for Carnaby’s cockatoo and vegetation that is representative of the Wheatbelt Woodlands ecological community.</p>	May be at variance	Yes <i>Refer to Sections 3.2.1, 3.2.2, and 3.2.3, above.</i>
<p><u>Principle (b):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared contains potential foraging, roosting, or breeding habitat for three conservation significant fauna species.</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared may contain suitable habitat for flora species listed under the BC Act.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared is dominated by several species that are representative of the Wheatbelt Woodlands ecological community which is listed as a Critically Endangered TEC under the Commonwealth EPBC Act.</p>	May be at variance	Yes <i>Refer to Section 3.2.3, above.</i>
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> 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.</p>	May be at variance	Yes <i>Refer to Section 3.2.4, above.</i>
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u> Given the distance and separation from the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of any nearby conservation areas.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> Given no water courses or wetlands are recorded within four kilometres of the application area, the vegetation within the application area is not considered to be growing in, or in association with, an environment associated with a watercourse or wetland and the proposed clearing is considered unlikely to impact on- or off-site hydrology and water quality.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u> The mapped soils are susceptible to flooding, waterlogging, phosphorus export, and subsurface acidification. However, noting the extent of the proposed clearing across a linear footprint, the disturbed condition of the vegetation, that approximately nine hectares of remnant vegetation adjacent to the application area will be retained, and that the final land use will be infrastructure associated with the truck marshalling road and weighbridge that will not leave bare ground exposed to weathering for extended periods, it is not considered likely that the proposed clearing will have an appreciable impact on land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</p> <p><u>Assessment:</u> Given no water courses or wetlands are recorded within four kilometres of the application area, the extent and nature of the proposed clearing, and that no groundwater is proposed to be taken or disturbed, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u> While the mapped soil type has a high risk of flooding and waterlogging, average rainfall within the application area is low and topography is relatively flat. Further, no water courses or wetlands are recorded within four kilometres of the application area and the proposed clearing consists of 0.051 hectares of disturbed vegetation across a linear footprint. Noting the above and that approximately nine hectares of remnant vegetation adjacent to the application area will be retained, it is not considered likely that the proposed clearing will cause, or exacerbate, the incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix D. Vegetation condition rating scale

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

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

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

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.

Condition	Description
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. Biological survey information excerpts

The application area has been subject to two biological surveys, which are further detailed below:

- Biological Assessment Moora Grain Receival Site, Moora (360 Environmental, 2019), and
- Desktop assessment and targeted survey for SRE and Conservation Significant Invertebrate Fauna for the Moora Grain Receival Site (Invertebrate Solutions, 2020).

The findings of these surveys have been summarised in the supporting document produced by 360 Environmental (2020) *Moora Grain Receival Site, Moora. Native Vegetation Clearing Permit (Area): Supporting Documentation*. Survey descriptions and mapping excised from the biological assessment and targeted SRE survey is available in Figures 3-5 and Table 1-2 below. It should be noted that Figures 3-5 denote the original clearing footprint for CPS 8864/1 and that the revised footprint is a 0.051-hectare subset of this area, as depicted in Figure 2 (see Section 3.1).

Biological Assessment Moora Grain Receival Site, Moora (360 Environmental, 2019)

The biological assessment for the Moora Grain Receival Site comprised a desktop assessment, flora and vegetation assessment, terrestrial vertebrate fauna assessment, and a black cockatoo habitat assessment (360 Environmental, 2019).

Desktop Assessment

The desktop assessment was undertaken by experienced ecologists and involved the following:

- Database searches to identify potential conservation significant flora and fauna taxa and ecological communities within a 15-to-20-kilometre buffer of the survey area, and
- A likelihood of occurrence assessment for conservation significant flora and fauna identified in the vicinity of the survey area, including consideration of the proximity of existing records to the survey area and the potential for preferred habitats to occur within the survey area (360 Environmental, 2019).

Flora and Vegetation Assessment

The methods of the flora and vegetation assessment were in accordance with the *EPA Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a). The flora and vegetation assessment was undertaken by an experienced ecologist and involved the following:

- A field survey on 3 September 2019, including comprehensive sampling of three quadrats,
- Vegetation type mapping for the survey area, using data collected from quadrats,
- Vegetation condition mapping for the survey area, using data collected from quadrats,
- Targeted searches for conservation significant flora, involving opportunistic searches from traverses of the survey area and comprehensive searches in three quadrats, and
- Taxonomic assessment of plant taxa by an experience botanist at the Western Australian Herbarium, where field identification was not possible (360 Environmental, 2019).

Terrestrial Vertebrate Fauna Assessment

A level 1 vertebrate fauna survey was undertaken in accordance with the *EPA Technical Guidance – Terrestrial Fauna Surveys* and *EPA Technical Guidance – Sampling Methods for Terrestrial Vertebrate Fauna*, which were current at the time of the survey but have since been replaced by the *EPA Technical guidance – Terrestrial*

Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020). The fauna survey was undertaken by an experienced zoologist and involved the following:

- A field survey on 3 September 2019, including traverses of the survey area, fauna habitat assessments at eight locations, systematic bird searches, and opportunistic fauna observations, and
- Fauna habitat mapping for the survey area, based on:
 - Vegetation type mapping and structure, from desktop assessment and flora and vegetation assessment,
 - Landforms,
 - Soil substrate, and
 - Field observations (360 Environmental, 2019).

Black Cockatoo Habitat Assessment

A black cockatoo habitat assessment was undertaken alongside the vertebrate fauna survey and was conducted in accordance with the *EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's Cockatoo (Calyptorhynchus latirostris), Baudin's Cockatoo (Calyptorhynchus baudinii) and Forest Red-tailed Black Cockatoo (Calyptorhynchus banksii naso)* (Commonwealth of Australia, 2012). The black cockatoo habitat assessment was undertaken by an experienced zoologist and involved the following:

- A field survey on 3 September 2019, including traverses of the survey area,
- An assessment of all potential breeding and roosting trees of suitable size within the survey area during the site traverse,
- Examination and recording of all habitat trees for potentially suitable breeding hollows,
- An assessment of foraging habitat, including mapping of habitat containing suitable foraging species and searches for evidence of foraging or observations of individuals, and
- Examination and recording of all potential roosting trees (360 Environmental, 2019).

Desktop assessment and targeted survey for SRE and Conservation Significant Invertebrate Fauna for the Moora Grain Reveal Site (Invertebrate Solutions, 2020)

The targeted short-range endemic (SRE) and conservation significant invertebrate fauna survey for the Moora Grain Reveal Site comprised a desktop assessment and field survey (Invertebrate Solutions, 2020).

Desktop Assessment

The desktop assessment was undertaken by an experienced invertebrate ecologist and involved the following:

- A Western Australian Museum (WAM) database search and literature review to identify SRE invertebrate species (Arachnids, Crustacea and Molluscs) in the Moora region, and
- A likelihood of occurrence assessment for SRE invertebrate species, including consideration of the proximity of existing records to the survey area and botanical and landform information for the survey area (Invertebrate Solutions, 2020).

Field Survey

The targeted survey for SRE and conservation significant invertebrate fauna was undertaken in accordance with the *EPA Technical Guidance - Sampling of short range endemic invertebrate fauna* (EPA, 2016b). The targeted survey for SRE and conservation significant invertebrate fauna was undertaken by an experienced invertebrate ecologist and involved the following:

- A field survey on 10 March 2020, including timed active searching, litter collection and transect sampling across the survey area,
- Sorting and curation of SRE samples using an Amscope 45x dissecting microscope and identification to lowest practical taxonomic rank (Invertebrate Solutions, 2020).

Table 1. Vegetation type recorded within the clearing footprint for CPS 8864/1 (360 Environmental, 2020).


Broad Floristic Formation	Vegetation Unit	Sites	Photograph
Eucalypt Woodland	ElHp Tall woodland of <i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i> and <i>Allocasuarina huegeliana</i> over tall shrubland of <i>Hakea preissi</i> , <i>Acacia lineolata</i> subsp. <i>lineolata</i> , <i>Grevillea biternata</i> over open forbland of * <i>Briza maxima</i> , * <i>Monoculus monstrosus</i> and <i>Podolepis lessonii</i> .	MQ01, MQ02, MQ03	



Figure 3. Vegetation type mapping overview for the original clearing footprint for CPS 8864/1 (360 Environmental, 2020).

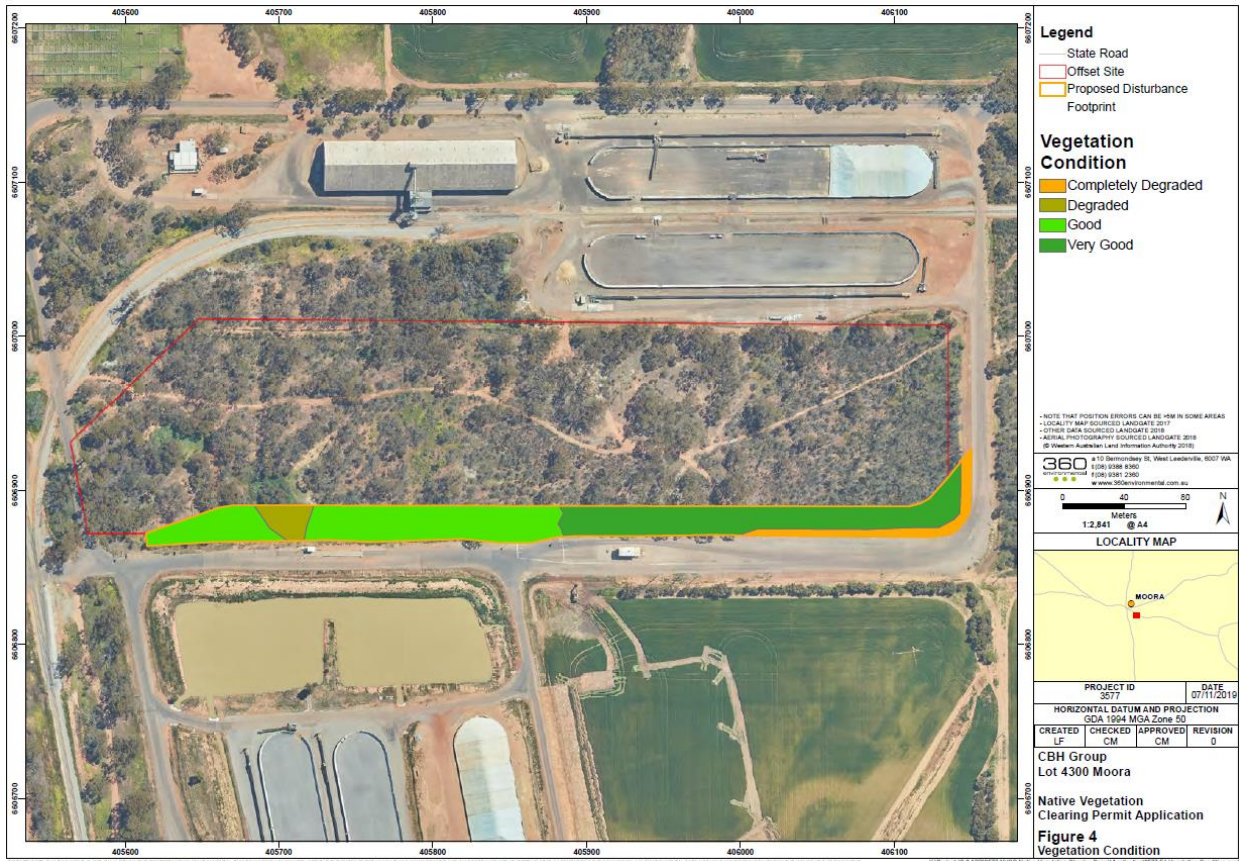




Figure 4. Vegetation condition mapping overview for the original clearing footprint for CPS 8864/1 (360 Environmental, 2020).



Figure 5. Significant black cockatoo trees (potential breeding and roosting trees) recorded within the original clearing footprint for CPS 8864/1 (360 Environmental, 2020).

Table 2. Fauna habitat type recorded within the clearing footprint for CPS 8864/1 (360 Environmental, 2020).

Fauna Habitat	Vegetation Type Code	Fauna Habitat Description and Fauna Value	Representative Photo
York Gum Woodland	ElHp	<p>Dominant species include <i>Eucalyptus loxophleba</i> subsp. <i>loxophleba</i>, <i>Hakea preissii</i> and <i>Daviesia benthamii</i>.</p> <p>Provides valuable refuge and breeding opportunities for several species due to the density of hollows occurring within the York Gum trees.</p>	
Cleared / Completely Degraded	-	<p>This fauna habitat type contains limited vegetation and has recently or previously been cleared or heavily disturbed.</p> <p>Provides low to no fauna value.</p>	

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)
- Bush Forever Areas 2000 (DPLH-019)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- CAWSA Part 2A Clearing Control Catchments (DWER-004)
- Consanguineous Wetlands Suites (DBCA-020)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- DBCA Statewide Vegetation Statistics
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments - Catchments (DWER-028)
- Hydrographic Catchments - Divisions (DWER-029)
- Hydrography, Linear (Hierarchy) (DWER-031)
- 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 (DPIRD-006)
- 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 (DPIRD-027)
- Soil Landscape Mapping – Systems (DPIRD-064)
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- Conservation Covenants Western Australia (DPIRD-023)
- Contaminated Sites Database - Restricted (DWER-073)
- 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)

F.2. References

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