GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 9352/2
Permit Holder:	Co-operative Bulk Handling Limited
Duration of Permit:	From 8 January 2024 to 8 January 2044

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 the construction of a rail siding and fixed loading facility.

2. Land on which clearing is to be done

Railway Reserve, PIN, Moora
Road Reserve, PIN 11709929, Moora
Lot 201 on Deposited Plan 59641, Moora
Lot 250 on Deposited Plan 65581, Moora

3. Clearing authorised

The permit holder must not clear more than 1.7 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 8 January 2029

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;

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

7. Demarcation of the clearing area

Prior to undertaking any clearing authorised under this permit, the permit holder shall:

(a) demarcate the clearing area to avoid inadvertent removal of adjacent vegetation, including threatened flora species;

(b) within one (1) month of installing the above demarcation, the permit holder must notify the CEO in writing that the demarcation has been completed.

8. Priority ecological community management

The permit holder must not clear more than 1.7 hectares of native vegetation representative of the 'Eucalypt woodlands of the Western Australian Wheatbelt (Eucalypt Woodlands)' ecological community.

9. Fauna management – black cockatoo habitat

(a) Clearing must not be conducted within the *known breeding season;*

(b) Prior to undertaking any clearing authorised under this permit within the areas cross-hatched yellow in Figure 1 of Schedule 1, the permit holder must engage a *fauna specialist* to conduct a survey of the permit area to identify *black cockatoo habitat tree/s* being utilised by *Zanda latirostris (*Carnaby's cockatoo).

(c) Each *black cockatoo habitat tree* identified must be inspected by a *fauna specialist* for *evidence* of current or past breeding use by *black cockatoo species*.

(d) Where a *black cockatoo habitat tree* with no *evidence* of current or past use by *black cockatoo species* is identified in accordance with condition 9(b), that tree must only be cleared immediately after the inspection.

(e) Where a *black cockatoo habitat tree* is identified within the areas cross-hatched yellow in Figure 1 of Schedule 1 and that tree shows *evidence* of current breeding use by *black cockatoo species* under condition 9(c), and clearing of that tree cannot be avoided, that tree must be monitored by a *fauna specialist* to determine when it is no longer in use for that breeding season.

(f) Any *black cockatoo habitat tree* with *evidence* of current breeding use by *black cockatoo species* must not be cleared whilst it is in use for that breeding season as determined by the *fauna specialist* under condition 9(e).

(g) Within two (2) months of clearing authorised under this permit within the areas cross-hatched yellow in Figure 1 of Schedule 1, the permit holder must provide the results of the survey in a report to the *CEO*.

(h) The survey report must include the following;
  (i) the time(s) and date(s) of inspection(s) by the *fauna specialist*
  (ii) a description of the *fauna specialist* inspection methods used
  (iii) the location of the *black cockatoo habitat tree(s)* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees
  (iv) the location of any *black cockatoo species* listed in condition 9(b), if identified, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees
  (v) the name and amount of each *black cockatoo species* identified
  (vi) whether the *black cockatoo habitat tree/s* identified show current use by black cockatoo species
  (vii) a photo of the *black cockatoo habitat tree(s)* identified; and
  (viii) a description of the *black cockatoo habitat tree(s)* identified, including the:
    (A) species of *black cockatoo habitat tree(s)*; and
    (B) condition of the *black cockatoo habitat tree(s)*
  (ix) the time and date each *black cockatoo habitat tree* with evidence of current of past breeding use was cleared.

10. Directional clearing

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

11. Offsets – Conservation covenant

By 8 January 2025, the permit holder must provide to the CEO a copy of a conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* over the areas cross-hatched red in Figure 2A and 2B of Schedule 2 (Lot 4300 on Plan 30175 and Lot 1397 on Plan 125128 respectively) in accordance with the following conditions:

(a) native vegetation in the area subject to the conservation covenant must not be cleared, other than for clearing required under the *Bush Fires Act 1954;*

(b) the land subject to the conservation covenant shall not be used for the purpose of cultivation of crops or pasture, or for the de-pasturing of any stock; and

(c) the conservation covenant is to apply in perpetuity and be registered on the title of the property.

12. Offset - Vegetation management - fencing

(a) Within 12 months of the commencement date of the permit, the permit holder shall construct a fence enclosing the area cross-hatched red in Figure 2A and 2B of Schedule 2 (Lot 4300 on Plan 30175 and Lot 1397 on Plan 125128).

(b) The fence must be of such a design as to prohibit access of livestock and kangaroos into the offset sites whilst preventing native fauna entanglement.

13. Offset – Artificial black cockatoo nesting hollows

(a) Within 12 months of the commencement date of the permit, the permit holder must install artificial black cockatoo nesting hollows in accordance with the following conditions:

(i) five (5) hollows must be installed within the tree locations as detailed in Figure 2E of Schedule 2.
(ii) must be designed and placed in accordance with the specifications detailed in Schedule 3; and
(iii) must be monitored and maintained in accordance with the specifications detailed in Schedule 3, for a period of at least 20 years.

(b) Each artificial black cockatoo nesting hollow required by condition 13(a)(i) must be installed prior to commencement of the next black cockatoo *breeding season* following clearing of the related black cockatoo habitat tree(s).

14. Offset – revegetation - reference sites and baseline data

Within 12 months of the commencement date of the permit, the permit holder must:

(a) Establish six (6) 5 x 5 metre *reference quadrats* within the *offset sites* in accordance with Section 8.3.1 of the *Offset Management Plan*

(i) Four (4) from vegetation units within Lot 4300 that meet Very Good (Keighery, 1994) condition
(ii) Two (2) from vegetation units within Lot 1397 that meet Excellent (Keighery, 1994) condition

(b) Record the locations of the *reference quadrats* established under Condition 14(a) using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings;

(c) Survey the *reference quadrats* established under Condition 14(a) for baseline data.

15. Within 12 months of the commencement date of the permit, the permit holder must implement and adhere to the rehabilitation and revegetation strategy stated in Section 8.0 of the *Offset Management Plan*, including but not limited to the following actions:

(a) Commence *revegetation* and *rehabilitation* within the areas cross-hatched red in Figure 2A and Figure 2B of Schedule 2 by:

(i) deliberately *planting* native vegetation that will result in similar species composition, structure and density of native vegetation to the surrounding vegetation within *reference quadrats*; and
(ii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.

(b) Rip potential areas of compaction or obstruction within the *offset sites* to allow root penetration of seedlings;

(c) Undertake weed control in accordance with Section 8.2.1 and 8.2.2 of the *Offset Management Plan*;

(d) Establish thirteen (13) 5 x 5 metre monitoring quadrats within the *offset sites*:

(i) Six (6) within Lot 4300
(ii) Seven (7) within Lot 1397

(e) Remove rubbish from the *offset sites;*

(f) Install a firebreak that complies with the Shire of Moora requirements at the *offset sites*;

(g) Undertake weed control activities on an 'as needs' basis to meet the rehabilitation completion criteria for weeds by the end of the project maintenance period;

(h) Achieve the following completion criteria for each zone within Lots 4300 and 1397 depicted in Figure 2C and 2D of Schedule 2 after the 5 year monitoring period for areas *revegetated* and *rehabilitated* under this Permit and for the vegetation to be maintained for a period of two years from the date of the completion criteria having been met:

Lot 4300					
Item	**Criterion**	**Objective / targets**	**Completion criteria for each zone and target areas**		Monitoring
			Zone	**Criterion**	
1	Seedling survival	Planted seedlings survive	All zones and target areas	A minimum of 70 percent survival of planted seedlings in the monitoring quadrats	Twice a year in spring and autumn in the first two years and annually in the spring by an *environmental specialist* until completion criterion has been met and maintained for two years.
2a	Species richness – Dominant overstorey species.	For each target rehabilitation type and zone, the revegetation needs to maintain and / or improve species richness of the dominant overstorey species from the target *reference quadrats*.	Zone A WWTEC Cat A	Dominant species across Zone A and within the monitoring quadrats are at least 80 per cent of the average recorded at the *reference quadrats 1, 2* and *3*.	Annually in spring by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
			Zone A WWTEC Cat C	Dominant species across Zone A and within the monitoring quadrats are at least 60 per cent of the average recorded at the *reference quadrats 1,2* and *3.*	
			Zone B	Dominant species across Zone B and within the monitoring quadrats are at least 80 per cent of the average recorded at the *reference quadrat 4.*	
2b	Species richness – native species in each structural layer	For each target revegetation type, the revegetation needs to achieve similar species richness to the average recorded at the *reference quadrats*.	Zone A WWTEC Cat A	Native species in each structural layer across Zone A and within the monitoring quadrats are at least 80 per cent of the average recorded at the *reference quadrats 1, 2* and *3.*	Annually in spring by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. four successive monitoring events).
			Zone A WWTEC Cat C	Native species in each structural layer across Zone A and within the monitoring quadrats are at least 60 per cent of the average recorded at the *reference quadrats 1, 2* and *3.*	
			Zone B	Native species in each structural layer across Zone B and within the monitoring quadrats are at least 80 per cent of the average recorded at the *reference quadrat 4.*	
3a	Cover and density – stem/ha of the dominant overstorey species	For each target rehabilitation type, the revegetation needs to similar number of stems/ha of the dominant	Zone A WWTEC Cat A	Monitoring quadrats and overall rehabilitated sites contain minimum 80% of the number of stems/ ha of the dominant overstorey species found in the *reference quadrats* 1,2 and *3.*	Annually by an *environmental specialist* until completion criterion has been met and maintained for two

Lot 4300					
Item	**Criterion**	**Objective / targets**	**Completion criteria for each zone and target areas**		Monitoring
			Zone	**Criterion**	
		overstorey species from the target *reference quadrats*.	Zone A WWTEC Cat C	Monitoring quadrats and overall rehabilitated sites contain minimum 60% of the number of stems/ ha of the dominant overstorey species found in the *reference quadrats* 1, 2 and 3.	years (i.e. three successive monitoring events).
			Zone B ATS community	Monitoring quadrats and overall rehabilitated sites contain minimum 80% of the number of stems/ ha of the dominant overstorey species found in the reference quadrat 4.	
3b	Cover and density – number of plants /ha in each structural layer.	For each target revegetation type, the revegetation needs to achieve a similarity in the number of plants / ha to the average record at the *reference quadrats*.	Zone A WWTEC Cat A	Minimum 80% of the number of plants / ha in each structural layer based on the reference quadrats 1, 2 and 3.	Annually by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
			Zone A WWTEC Cat C	Minimum 60% of the number of plants / ha in each structural layer based on the reference quadrats 1, 2 and 3.	
			Zone B	Minimum 80% of the number of plants / ha in each structural layer based on the reference quadrat 4.	
4a	Weeds	Weed cover is no greater than the baseline at *reference quadrats*	All zones	For each target rehabilitation type and zone, weed cover shall be no greater than the baseline recorded at the *reference 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).
4b	Weeds	No priority, high impact or highly invasive weeds present	All zones	No weeds present that are listed as Priority Alert, High Impact or Rapid invasiveness on the DBCA Wheatbelt Region Impact and Invasiveness Ratings list as updated from time to time.	Annually in spring by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
5	Bare ground	No more than 5 per cent greater than the baseline at the *reference quadrats*	All zones	For each target rehabilitation type and zone, the *rehabilitated area* must not have bare ground more than 5 per cent greater than the baseline recorded at the *reference quadrats*	Annually in summer by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
6	Gates and boundary fence	Gates and boundary fence to be in good condition with no obvious damage that will enable access by the general public, livestock and kangaroos.	Lot 4300		Annually until completion criteria 1 – 5 has been met.

Lot 1397					
Item	**Criterion**	**Objective / targets**	**Completion criteria for each zone and target areas**		Monitoring
			Zone	**Criterion**	
1	Seedling survival	Planted seedlings survive	All zones and target areas	A minimum of 70 percent survival of planted seedlings in the monitoring quadrats	Twice a year in spring and autumn in the first two years and annually in the spring by an *environmental specialist* until completion criterion has been met and maintained for two years.
2a	Species richness – Dominant overstorey species.	For each target rehabilitation type and zone, the revegetation needs to maintain and / or improve species richness of the dominant overstorey species from the target *reference quadrats*.	Zone C	Dominant species across Zone C and within the monitoring quadrats are at least 40 per cent of the baseline average recorded at the *reference quadrat 5*.	Annually in spring by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
			Zone D WWTEC Cat A	Dominant species across Zone D and within the monitoring quadrats are at least 80 per cent of the baseline average recorded at the *reference quadrat 5*.	
			Zone D WWTEC Cat C	Dominant species across Zone D and within the monitoring quadrats are at least 60 per cent of the baseline average recorded at the *reference quadrat 5*.	
			Zone E AcTS	Dominant species across Zone E and within the monitoring quadrats are at least 80 per cent of the baseline average recorded at the *reference quadrat 6*.	
2b	Species richness – native species in each structural layer	For each target revegetation type, the revegetation needs to achieve similar species richness of the average recorded at the *reference quadrats*.	Zone C	Native species in each structural layer across Zone C and within the monitoring quadrats, are at least 40 per cent of the baseline average recorded at the *reference quadrat 5*.	Annually in spring by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. four successive monitoring events).
			Zone D WWTEC Cat A	Native species in each structural layer across Zone D and within the monitoring quadrats, are at least 80 per cent of the baseline average recorded at the *reference quadrat 5*.	
			Zone D WWTEC Cat C	Native species in each structural layer across Zone D and within the monitoring quadrats, are at least 60 per cent of the baseline average recorded at the *reference quadrat 5*.	
			Zone E AcTS	Native species in each structural layer across Zone E and within the monitoring quadrats, are at least 80 per cent of the baseline average recorded at the *reference quadrat 6*.	

Lot 1397					
Item	**Criterion**	**Objective / targets**	**Completion criteria for each zone and target areas**		Monitoring
			Zone	**Criterion**	
3a	Cover and density – stem/ha of the dominant overstorey species	For each target rehabilitation type, the revegetation needs to similar number of stems/ha of the dominant overstorey species from the target *reference quadrats*.	Zone C	Monitoring quadrats and overall rehabilitated sites contain minimum 40% of the baseline number of stems/ ha of the dominant overstorey species found in the *reference quadrat 5.*	Annually by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
			Zone D WWTEC Cat A	Monitoring quadrats and overall rehabilitated sites contain minimum 80% of the baseline number of stems/ ha of the dominant overstorey species found in the *reference quadrat 5.*	
			Zone D WWTEC Cat C	Monitoring quadrats and overall rehabilitated sites contain minimum 60% of the baseline number of stems/ ha of the dominant overstorey species found in the *reference quadrat 5.*	
			Zone E AcTS	Monitoring quadrats and overall rehabilitated sites contain minimum 80% of the baseline number of stems/ ha of the dominant overstorey species found in the *reference quadrat 6.*	
3b	Cover and density – number of plants /ha in each structural layer.	For each target revegetation type, the revegetation needs to achieve a similarity in the number of plants / ha to the average baseline record at the *reference quadrats*.	Zone C	Minimum 40% of the number of plants / ha in each structural layer based on the baseline recorded at *reference quadrat 5.*	Annually by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
			Zone D WWTEC Cat A	Minimum 80% of the number of plants / ha in each structural layer based on the baseline recorded at *reference quadrat 5.*	
			Zone D WWTEC Cat C	Minimum 60% of the number of plants / ha in each structural layer based on the baseline recorded at *reference quadrat 5.*	
			Zone E AcTS	Minimum 80% of the number of plants / ha in each structural layer based on the baseline recorded at the *reference quadrat 6.*	
4a	Weeds	Weed cover is no greater than the baseline cover at *reference quadrats*	All zones	For each target rehabilitation type and zone, weed cover shall be no greater than the baseline cover recorded at the *reference 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).
4b	Weeds	No priority, high impact or highly invasive weeds present	All zones	No weeds present that are listed as Priority Alert, High Impact or Rapid invasiveness on the DBCA Wheatbelt Region Impact and Invasiveness Ratings list as updated from time to time.	Annually in spring by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three

Lot 1397					
Item	**Criterion**	**Objective / targets**	**Completion criteria for each zone and target areas**		Monitoring
			Zone	**Criterion**	
					successive monitoring events).
5	Bare ground	No more than 5 per cent greater than the baseline at the *reference quadrats*	All zones	Rehabilitation type and zone, the *rehabilitated area* must not have bare ground more than 5 per cent greater than the baseline recorded at the *reference quadrats*	Annually in Summer by an *environmental specialist* until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
6	Gates and boundary fence	Gates and boundary fence to be in good condition with no obvious damage that will enable access by the general public, livestock and kangaroos.	Entire offset site (Lot 1397)		Annually until completion criteria 1 – 5 has been met.

(i) Undertake remedial action for areas *revegetated* and *rehabilitated* under condition 15 of this permit, where monitoring indicates that *revegetation/rehabilitation* has not met the completion criteria, outlined in condition 15(h) of this permit, including:

(i) revegetate the area by deliberately *planting* native vegetation that will result in the minimum targets set out in condition 15(h) of this permit and ensuring only *local provenance* seeds and propagating material are used;

(ii) undertake further weed control activities; and

(iii) annual monitoring of the *revegetated* and *rehabilitated* areas by an *environmental specialist* until the completion criteria, outlined in condition 15(h) of this Permit are met.

PART III - RECORD KEEPING AND REPORTING

16. Records that must be kept

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

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and

No.	Relevant matter	Specifications
		Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 5; and (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 6; (g) actions taken to demarcate the clearing area in accordance with condition 7.
2.	In relation to black cockatoo fauna management pursuant to conditions 9	(a) the time(s) and date(s) of inspection(s) of the suitable *black cockatoo habitat tree* by the *fauna specialist*; (b) a description of the inspection methodology employed by the *fauna specialist*; (c) the species name of any fauna determined by the *fauna specialist* to be occupying the suitable *black cockatoo habitat tree*; (d) where the suitable *black cockatoo habitat tree* is determined by the *fauna specialist* to be occupied by *black cockatoo species*: (i) the time and date that it was determined to be no longer occupied; and (ii) a description of the evidence by which it was determined to be no longer occupied; and (e) the time and date that the suitable *black cockatoo habitat tree* was cleared.
3.	In relation to offset management, pursuant to conditions 11 to 15.	(a) a copy of the relevant conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* in accordance with condition 11; (b) evidence of fencing undertaken in accordance with condition 12; (c) the locations where the artificial nests are installed in accordance with condition 13, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings; (d) the date that the artificial nests were installed; (e) the location and size of *the reference quadrats* in accordance with condition 14 recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees; (f) at least two photographs of each *reference quadrat* and the date that the *reference*

No.	Relevant matter	Specifications
		quadrat baseline data is collected. (g) the baseline data recorded for the *reference quadrats*, including species richness, species density, vegetation structure, bare ground cover, weed cover and vegetation condition; (h) a description of the *revegetation* and *rehabilitation* activities undertaken each year, once commenced, outlined in a report produced by an *environmental specialist* (i) the location and size of the areas *revegetated* and *rehabilitated* (in hectares) recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees (j) the date that *revegetation* and *rehabilitation* works began; (k) at least two photographs of the areas *revegetated/ rehabilitated* recorded annually at the same location each year; (l) the species composition, structure, density of the areas *revegetated/rehabilitated* recorded annually; (m) a description of the extent of bare ground cover, weed cover and vegetation condition of the areas *revegetated/ rehabilitated*, recorded annually; (n) a species list identifying those species *planted* (o) the assessment of the *revegetation* and *rehabilitation* against criterion outlined in condition 15(h); any remedial actions undertaken in accordance with condition 15(i); and (p) a copy of the *environmental specialist* report and activities undertaken during monitoring; and (q) other actions taken in accordance with conditions 13, 14 and 15 of this permit.

17. Reporting

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

(i) of records required under condition 16 of this permit; and

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

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

(c) Prior to 8 October 2043, the permit holder must provide to the *CEO* a written report of records required under condition 16 of this permit where these records have not already been provided under condition 17(a) of this permit.

DEFINITIONS

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

Table 2: Definitions

Term	Definition
black cockatoo habitat trees	means trees that have a diameter, measured at 130 centimetres from the base of the tree, of 50 centimetres or greater (or 30 centimetres or greater for *Eucalyptus salmonophloia* or *Eucalyptus wandoo*) that contain hollows suitable for breeding by black cockatoo species.
black cockatoo species	means one or more of the following species: (a) *Zanda lateriosis* (Carnaby's cockatoo); (b) *Zanda baudinii* (Baudin's cockatoo); and/or (c) *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo).
black cockatoo specialist	means a *fauna specialist* who holds a tertiary qualification specialising in environmental science or equivalent, has a minimum of two years of work experience in black cockatoo species identification, surveys of black cockatoo and capture and handling of black cockatoo, and holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*.
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
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.
EP Act	*Environmental Protection Act 1986* (WA)
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent and has a minimum of two (2) years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the CEO as a suitable environmental specialist.
evidence	means showing chew marks or scratchings on the habitat tree representative of the species being surveyed, the presence of the species entering or leaving the habitat tree, and/or the presence of chicks/young
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna

Term	Definition
	licence issued under the Biodiversity Conservation Act 2016.
known breeding season	means the period from August and December when Carnaby's black cockatoo breeds in the region.
local provenance	means native vegetation seeds and propagating material from natural sources within 100 kilometres and the same IBRA subregion of the area cleared.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
Offset Management Plan	Means the offset management plan which includes the rehabilitation and revegetation strategy for the offset sites relevant to this Permit, as provided in the document titled *'Moora Rail Loading Enhancement Project. Offset Management Plan'* (CBH Group, 2023), dated 5 December 2023.
offset sites	Means the area cross-hatched red on Figure 2A and 2B of Schedule 2
planting	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;
rehabilitate / rehabilitated/ rehabilitation	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
reference quadrat (Lot 4300)	means a sample plot established for the purpose of data collection and monitoring vegetation characteristics, for example species composition, structure, density, foliage cover, vegetation condition (Keighery, 1994), weed species and extent, and extent of bare ground. Measurements from fixed reference quadrats or plots where biodiversity components are measured are used to set measurable completion criteria for revegetation projects. The *reference quadrats* at Lot 4300 contain the following values: (a) Suitable foraging and potential roosting and breeding habitat for Carnaby's black cockatoo (*Zandas latirostris)* (b) Vegetation representative of the 'Wheatbelt Woodlands of Western Australia' ecological community (c) Vegetation representative of the *Allocasuarina huegeliana* tall shrubland community (d) Vegetation in Very Good (Keighery, 1994) condition
reference quadrat (Lot 1397)	means a sample plot established for the purpose of data collection and monitoring vegetation characteristics, for example species composition, structure, density, foliage cover, vegetation condition (Keighery, 1994), weed species and extent, and extent of bare ground. Measurements from fixed reference quadrats or plots where biodiversity components are measured are used to set measurable completion criteria for revegetation projects. The *reference quadrats* at Lot 1397 contain the following values: (a) Vegetation representative of the 'Wheatbelt Woodlands of Western Australia' ecological community (b) Vegetation representative of the *Allocasuarina campestris* tall shrubland community (c) Vegetation in Excellent (Keighery, 1994) condition
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and*

Term	Definition
	Agriculture Management Act 2007; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS

REFERENCES

CBH Group (2023). *Moora Rail Loading Enhancement Project. Offset Management Plan*. Dated 5 December 2023. Information provided in relations to the clearing permit application CPS 9352/1. Received by the Department of Water and Environmental Regulation on 5 December 2023 (DWER Ref: DWERDT876568)

Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

24 May 2024

Schedule 1

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

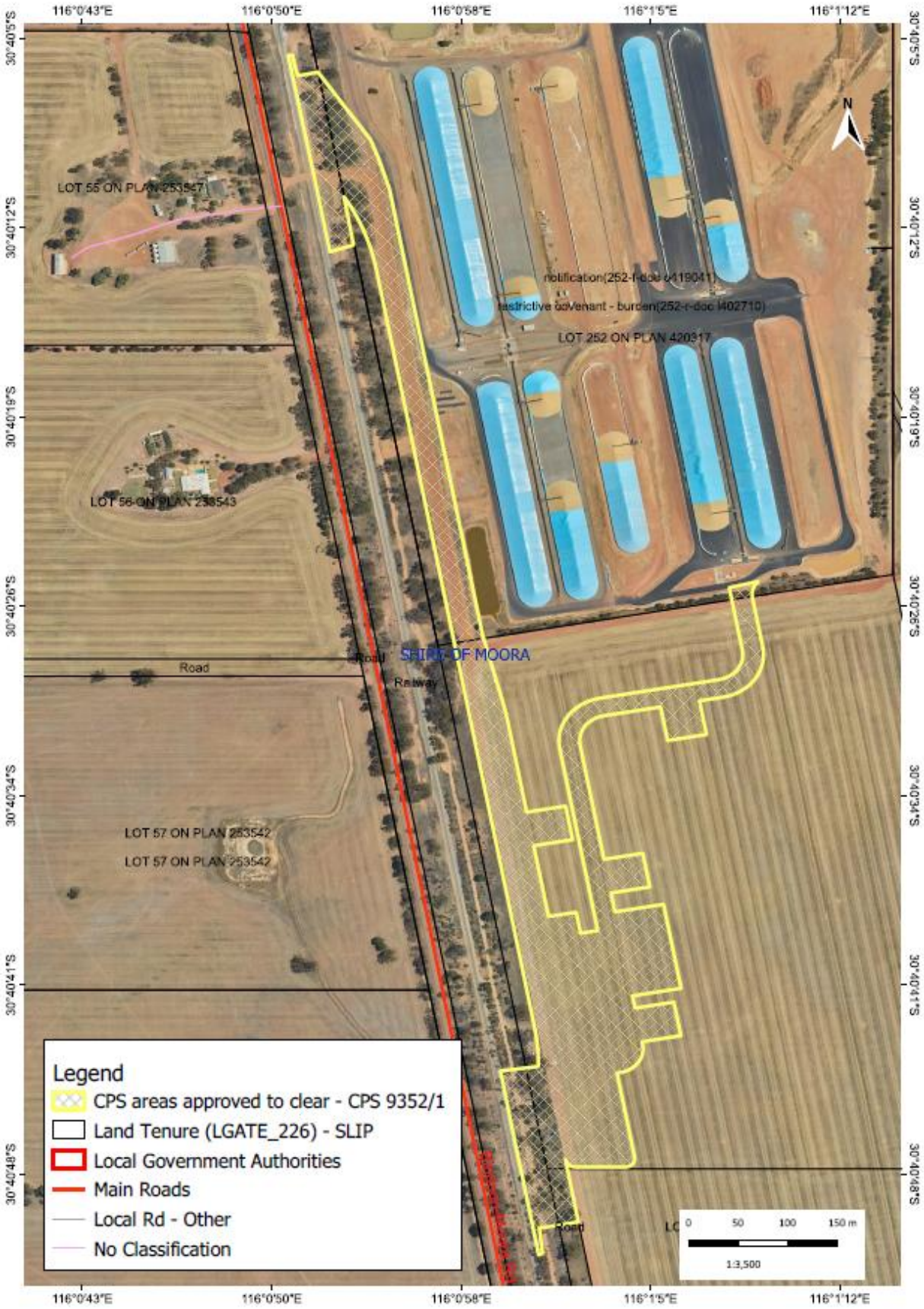


Figure 1: Map of the boundary of the area within which clearing may occur

Schedule 2

The boundary of the areas designated as offset sites are shown in the maps below (Figure 2A and Figure 2B).

The management zones for rehabilitation and revegetation of the offset sites are shown in Figure 2C and Figure 2D.

Figure 2A. Map of offset site on Lot 4300 on Plan 30175 to be placed under a conservation covenant and rehabilitated.

Figure 2B. Map of offset site on Lot 1397 on Plan 125128 to be placed under a conservation covenant and rehabilitated.

Figure 2C. The rehabilitation zones within Lot 4300

Figure 2D. The rehabilitation zones within Lot 1397

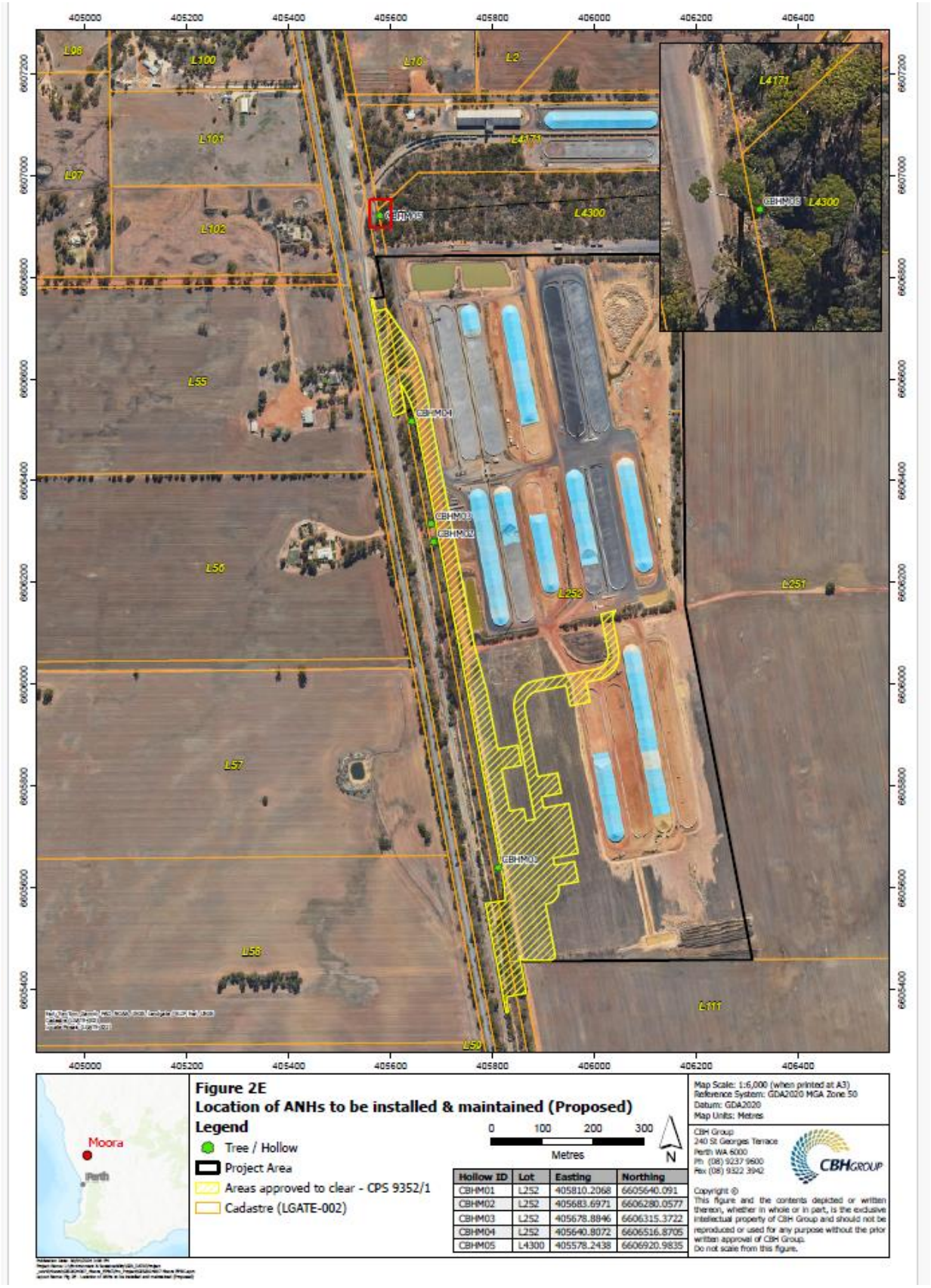


Figure 2E. The location of five artificial nest hollows to be installed

Schedule 3 – Fauna notes - Artificial hollows for Black Cockatoos

Department of Biodiversity, Conservation and Attractions
GOVERNMENT OF WESTERN AUSTRALIA

FAUNA NOTES

Artificial Hollows for Black Cockatoos

There are three species of threatened black cockatoos in the southwest of Western Australia (WA): Baudin's cockatoo *Zanda baudinii* (previously *Calyptorhynchus baudinii*), Carnaby's cockatoo *Zanda latirostris* (previously *Calyptorhynchus latirostris*) and forest red-tailed black cockatoo *Calyptorhynchus banksii naso.* Some of the main threats to the three species include nest hollow shortages due to ongoing and extensive habitat loss and degradation, lack of recruitment of new hollow bearing trees, and competition with galahs, corellas, and feral European honey bees.

Carnaby's cockatoo nestlings in an artificial hollow. Note this chewing post will require replacement following breeding. Photo: Rick Dawson

Artificial hollows can be used to help conserve these threatened black cockatoos by enabling them to breed in areas where natural hollows are limited. This Fauna Note provides advice on how to select an appropriate site, guidelines on how to design and place artificial hollows, and advice on how to maintain and monitor artificial hollows. The information presented here is based on experience with Carnaby's cockatoo which have many examples of successful use of artificial hollows and forest red-tailed black cockatoo which have a few known examples of use. However, to date there are no records of Baudin's cockatoo using artificial nest hollows.

Sometimes a site may not be suitable for artificial hollows. This Fauna Note includes options for alternative conservation actions that are important to the conservation of black cockatoos and can also be used to complement the placement of artificial hollows.

It is important to remember that the retention of both old and dead trees (stags) that have suitable hollows for black cockatoos is crucial for breeding, and natural replacement of hollow bearing trees for future breeding is vital for the long-term survival of the species. The installation of artificial hollows should not be used to justify the removal of natural hollow-bearing trees.

When to Use Artificial Hollows

Artificial hollows may be useful at sites where natural hollows are a limiting resource. However, cockatoos may not always use artificial hollows, for example if provided in non-traditional nesting areas. Artificial hollows that are installed within 2 km of current breeding sites are regularly taken up. There are ways to select sites for artificial hollows that will increase the chance that they will be used and that birds will be able to successfully raise chicks.

Where do black cockatoos nest?

Black cockatoos nest in the hollows of mature trees in uncleared or remnant Eucalypt woodland or forest, as well as in remnant paddock trees. Trees may take more than 120 years to develop hollows that are a suitable size, and cockatoos use hollows in both living and dead trees. Refer to the maps at the end of this document for the known breeding range of the three species of black cockatoo.

Carnaby's cockatoos generally breed in Wandoo and Salmon Gum in the Wheatbelt, Marri in forested areas, and Tuart along the Swan Coastal Plain. They are also known to nest in Jarrah, Flooded Gum, York Gum, Gimlet, Powderbark Wandoo, and Karri.

Baudin's cockatoos generally nest in Jarrah, Marri, and Karri in densely forested areas. They are also known to nest in hollows in Wandoo and Tuart.

The breeding habitat for forest red-tailed black cockatoos is in uncleared forest or remnant patches of old Marri. They are also known to nest in Karri, Wandoo, Bullich, Blackbutt, Tuart, and Jarrah.

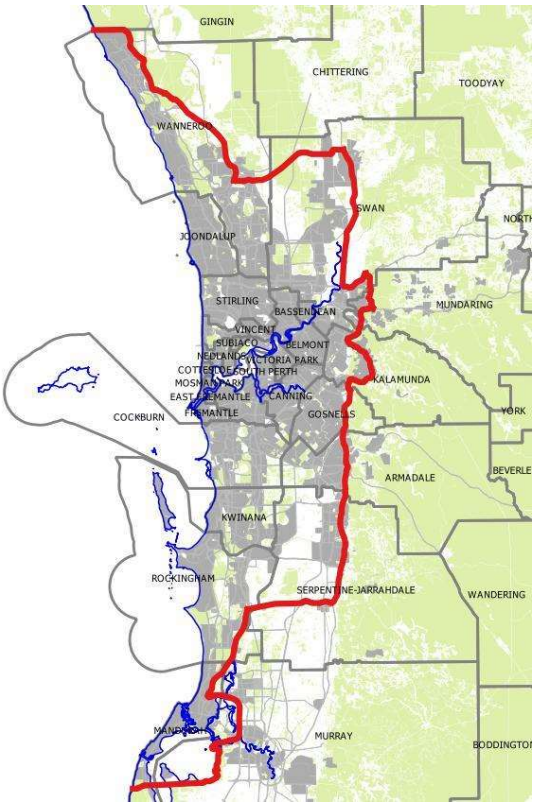
Is my site suitable for artificial hollows?

It is recommended that artificial hollows be used in known nesting areas where there has been a decrease in the availability of natural nesting hollows. Trials have shown that Carnaby's cockatoo and forest red-tailed black cockatoos will nest in artificial hollows if installed in suitable areas and are of a satisfactory design. However, putting up artificial hollows may not be the best way to help black cockatoos in your area.

Indeed, attracting birds to attempt to breed in unsuitable areas may result in increased risk of harm to adult birds or their chicks. The installation of artificial hollows in built up and urbanized areas of the metropolitan Perth and Peel regions, and other urban centres in the southwest is not recommended and should not be undertaken. This is due to the increased risk in this area, including car strike to young inexperienced birds, attack by predators such as Australian ravens and pets, and in highly urbanised and cleared areas there may not be sufficient food resource for the adults to successfully raise chicks).

To decide if your site is suitable for artificial hollows you need to consider five essential criteria (Table 1). If your site does not match all criteria, you may wish to consider alternative conservation actions including:

- protecting habitat by fencing and/or rabbit and stock control to encourage regeneration of native vegetation;
- controlling competitive species such as galahs, corellas and feral bees that may occupy hollows;
- repairing old and damaged natural nesting hollows;
- providing access to fresh water;
- revegetating with preferred food species and nesting trees; and/or
- creating linkages of vegetation between nesting and feeding areas.



Installing artificial hollows in built up areas to the west of the red line above, increases the risk of harm to birds. No artificial hollows should be installed west of this line. (green = remnant vegetation; grey = extent of existing and future urban and industrial development)

Table 1: Essential criteria for a site to be considered suitable for installation of artificial hollows, with alternative conservation actions suggested for each criterion that is not met.

1.	**The site is Eucalypt woodland or forest within the known breeding range of the species**	
	Important consideration	Carnaby's cockatoos tend to nest in Wandoo and Salmon Gum in the Wheatbelt, Marri in forested area and Tuart along the Swan Coastal Plain. Baudin's cockatoos generally nest in Jarrah, Marri, and Karri and forest red-tailed black cockatoos usually nest in Marri.
	Alternative conservation actions	If the site is not within the known current breeding range of black cockatoos, then it is unlikely that the installation of artificial hollows will attract the birds to the site. However, black cockatoos are highly mobile species that also require habitat for feeding and roosting which means that it is important to protect and manage habitat visited by the cockatoos by fencing, and carrying out other management, such as rabbit and stock control, to retain existing habitat, and to encourage regeneration of native vegetation. It is also important to revegetate areas within the breeding and non-breeding areas with preferred food species, and to create linkages of vegetation to assist the movement of the birds through the landscape.
2.	**Breeding by Black cockatoos is known or suspected at the site. There must also be evidence that a lack of suitable available tree hollows is preventing breeding that would otherwise occur in the area.**	

	Important consideration	If the lack of available hollows is due to nest competitors such as galahs, western long-billed corellas or feral bees then any attempt to install artificial hollows must be accompanied by efforts to deter or control these competitors. Alternatively, successful control of competitors may mean that artificial hollows are not needed.
	Alternative conservation actions	If sufficient suitable natural hollows are available in an area, then there is no need to install artificial hollows. This overcomes the need for ongoing maintenance of unnecessary artificial hollows. If breeding is already occurring at the site and there are plenty of available hollows, efforts can be redirected towards caring for existing or future nesting hollows. This may involve repairing old or damaged nesting hollows by covering cracks, removing debris blocking access to hollows or replacing rotted wood in the hollow so that the depth of the nest floor is manageable for the birds. Future hollows can be protected by preventing compaction of ground around trees, fencing and/or rabbit and stock control to encourage regeneration to produce future nesting trees, fire management, and the strategic pruning of limbs to prevent limbs breaking and tearing open hollows. Efforts can also be aimed at enhancing the success of existing breeding by revegetating with preferred food and nesting species, as well as creating linkages of suitable vegetation and fresh water between nesting and feeding areas. If breeding is not occurring at the site despite hollows being available, then there may be a range of factors making the site unsuitable for breeding. These factors must be identified and addressed before breeding can resume in the area (if at all possible). Lack of sufficient food could be the cause, and this can be addressed by revegetating with preferred food species and increasing connectivity in the landscape. To compile a list of plant species suitable for revegetation at your site, refer to the document *Plants Used by Carnaby's Black Cockatoo* available on the Department of Biodiversity, Conservation and Attractions (DBCA) black cockatoo webpage.
3.	**The artificial hollows can be located in close proximity to adequate feeding areas – within a 12 km radius.**	
	Important consideration	Feeding areas commonly contain proteaceous species such as banksias (including dryandras) and hakeas. A list of food plants can be obtained by use of the document *Plants Used by Carnaby's Black Cockatoo*.
	Alternative conservation actions	If the site is not close to adequate food, then the black cockatoos will not be able to successfully raise young. Cockatoos require sufficient food close to nesting areas in order to be able to forage during the day and return to feed nestlings. Existing feeding habitat close (within 12km) to breeding areas can be protected by fencing and/or undertaking rabbit and stock control to encourage regeneration of native vegetation. The amount of feeding habitat in an area can be increased by planting or revegetating with preferred food species.
4.	**The hollows are placed in secure locations and the owner/manager of these areas is supportive and willing to provide the necessary long-term security and annual maintenance for the entire time that the artificial hollow will be in place.**	
	Important consideration	For advice on the monitoring and maintenance requirements, please refer to the section on how to monitor and maintain artificial hollows.
	Alternative conservation actions	Artificial hollows can be subject to nest robbing and vandalism. It is highly recommended that artificial hollows are not put in exposed or easily accessible areas such as road verges unless they are above 8m and placed on the side of trees away from roads. If the site is considered at high risk of nest robbing or vandalism then alternative actions to assist the conservation of the species are recommended including: revegetation, fencing, repairing old or damaged natural nesting hollows and planting vegetation linkages to connect nesting and feeding areas.
5.	**A suitable artificial hollow design is used.**	
	Important consideration	For greatest chance of success, please refer to the sections below on how to design and place artificial hollows.
	Alternative conservation actions	If an alternative design is proposed, it is recommended that Department of Biodiversity, Conservation and Attractions, BirdLife Australia, or WA Museum are contacted to discuss and approve design.

How to Design and Place Artificial Hollows

A wide variety of artificial hollow designs have been previously used with mixed success. Evidence suggests that, while artificial hollows must meet some basic requirements, other factors such as proximity to existing breeding areas may be more important in determining the success of artificial hollows.

Successful artificial hollows have been constructed from sections of salvaged natural hollows, or black and white industrial pipe. Research results show that the most effective artificial hollows are made of plastic culvert pipe which is readily available, durable, light, cheap, and easy to install and maintain (see right picture below). When using non-natural materials care must be taken to ensure there are no toxic residues, and that the materials are safe to ingest.

Below are three examples of successful artificial hollows that have been used by black cockatoos for nesting:

- natural log with cut side entrance (left);
- white industrial pipe with top entrance (centre); and
- DBCA recommended polypropylene pipe design (right)



Photo: Christine Groom (left), Rick Dawson (centre and right)

The notes below provides general guidance on design and construction of artificial hollows for black cockatoos. Additional specifications are provided at the end of this Fauna Note which outline current best practice and may be considered recommendations for minimum requirements.

Walls, size, base, and entrance design

The walls of the artificial hollow need to be constructed from a material that is:

- durable enough to withstand exposure to elements for at least 20 years; and
- able to simulate the thermal properties of a natural tree hollow.

Artificial hollows should be:

- not less than 375 mm in internal diameter; and
- preferably 1200 mm deep overall with 200 mm of substrate/nesting material covering the base.

The base of the artificial hollow must be:

- securely fixed to the walls and able to support the weight of an adult and nestling(s);
- durable enough to last the life of the nest, and survive chewing by cockatoos;
- free draining;

- at least 375 mm in diameter; and
- covered with 200 mm of sterile, dry, free draining substrate/nesting material such as charcoal, hardwood woodchips or wood debris. Do not use saw dust or fibre products that will retain moisture.

Example materials that could be used for artificial hollow bases include heavy duty stainless steel, galvanised or treated metal (e.g. Zincalume®), thick hard plastic, thick hardwood timber slab or marine ply (not chipboard or MDF). The base material must be cut to fit internally with sharp or rough edges ground away or curled inwards, be fixed securely to the walls and have small drainage holes.

The entrance of the artificial hollow:

- must have a diameter of at least 375 mm; and
- preferably be top entry which will minimise use by non-target species.

Top entry hollows are less attractive to nest competitors such as feral bees, galahs and corellas. Side entry hollows have been successful in areas where feral bees, galahs and corellas are not competitors.

Adding ladders and sacrificial chewing posts

For artificial hollows made of non-natural materials, or of processed boards, it is necessary to provide a ladder to enable the birds access to the hollow, and sacrificial chewing posts so that birds can chew material, and so that non-target species can exit the hollow. The post can also assist in providing further material to the substrate, however research has shown that not all posts are heavily chewed.

The ladder must be:

- securely mounted to the inside of the hollow;
- made from an open heavy wire mesh with a mesh size of 30 - 50 mm (such as WeldMesh™); or heavy chain; and
- reach to, or below the level of substrate/nesting material.

If using mesh for the ladder, the width will depend on the curvature of the nest walls. A minimum width of about 60 - 100 mm is recommended.

Do not use material for ladders that the birds can chew, including galvanised metal because the birds may grip or chew the ladder, and ingest harmful compounds.

The sacrificial chewing posts must be:

- made of untreated hardwood such as Jarrah, Marri or Wandoo;
- thick enough to satisfy the birds' needs between maintenance visits;
- extended beyond the top of the hollow as an aid to see whether the nest is being used and reach to the floor of the hollow;
- placed on the inside of the hollow; and
- attached in such a way that they are easy to replace (e.g. a hook over the top of hollow or can slide in/out of a pair of U-bolts fitted to the side of the hollow).

It is recommended that at least one chewing post is provided. Posts 70 x 50 mm have been used but require monitoring at least every second breeding season when the nest is active and replacing when found to be no longer reaching the nesting material or otherwise significantly chewed. Birds do vary in their chewing habits, and therefore the frequency at which the chewing posts require replacement will also vary.

Mounting and placement

It is important that artificial hollows are placed where they will be accessible for future monitoring and maintenance, but preferably not conspicuous to the general public.

The height at which artificial hollows should be placed is variable, between 4 - 8m for Carnaby's cockatoo, and the average height of natural hollows in dominant tree species in the area is a good guide. If located in an area that the general public cannot access, such as a private property, the hollows can be placed as low as 4 m from the ground so that they are easily accessible by ladder. If located in an area where the general public are allowed access, hollows should be placed at least 8 m high (i.e. higher than most ladders) and on the side of the tree away from public view to reduce the chance of interference or poaching.

Black cockatoos show no preference for aspect of natural hollows. However, it may still be beneficial to place artificial hollows facing away from prevailing weather and where they receive the most shade and protection.

Artificial hollows to be placed in trees require:

- accessibility of the tree for a vehicle, elevated work platform or cherry picker;
- a section of trunk 2 - 3 m long suitable for attaching the hollow; and
- fitted on the side where the most shade can be obtained.

Artificial hollows must be mounted such that:

- the fixings used will last the duration of the nest e.g. galvanized bracket or chain and fixed with galvanized coach screws;
- it is secured by more than one anchor for security and stability;
- it is positioned vertically or near vertically; and
- where possible living trees are to be used to provide shade.

Artificial hollows should not be placed in the open on poles, as this may result in excessive exposure to sun during very hot weather.

Safety

Care needs to be taken when placing artificial hollows to ensure human safety is paramount.

Monitoring and Maintaining Artificial Hollows

It is important to monitor and maintain artificial hollows after they have been erected to ensure their effectiveness and so that problems with pest species or maintenance requirements can be identified and resolved. This will ensure the artificial hollow continues to provide opportunities to be used and that birds will be able to successfully raise chicks

Without regular maintenance, artificial hollows are likely to fail to achieve their objective to provide safe nesting opportunities for threatened black cockatoos. Therefore, it is important to continue a regime of regular maintenance for however long the artificial hollow is required. It may be several (to many) decades until a natural replacement hollow is available. Artificial hollows erected as a condition of development to offset the loss of natural hollows may be required to be available and maintained for the life of the development approval.

How do I monitor artificial hollows?

Before undertaking monitoring of artificial hollows for black cockatoos, it is recommended that you seek advice from the Department of Biodiversity, Conservation and Attractions, BirdLife Australia, or the WA Museum. It is also important to contact the Department's Wildlife Licensing Section, to determine if a lawful authority required (https://www.dbca.wa.gov.au/licences-permits).

Monitoring artificial hollows requires keen observation, and naturalist skills. It is often not possible to observe direct evidence of breeding (i.e. nestlings or eggs) and therefore inferences must be made based on other observations. It is also important to limit disturbance to breeding birds. There are many techniques available to monitor artificial hollows, and a combination of several is likely to achieve the best results (***Table 2***).

Monitoring of artificial hollows should consider and record:

- the condition of the tree, hollow fixings and general hollow condition;
- condition and connection of sacrificial chewing posts, ladder and substrate/nesting material inside hollow;
- any use by black cockatoos and nature of activity (adult birds, chewing, eggs, chicks etc.)
- details of use by non-target species (native or pest);
- identify any problems with pest species or maintenance requirements; and
- maintenance actions undertaken to resolve any problems.

The information collected from monitoring should be written down and reported. There are standard fauna report forms available on the Department's website (https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-animals) that can be used to record the details of your sighting. Alternatively, if you are

frequently monitoring a larger number of artificial hollows, you can put the details into a spreadsheet or use the black cockatoo monitoring forms available on the DBCA website. Records should be submitted to the Department by emailing fauna.data@dbca.wa.gov.au. The Department will put the records into the Threatened and Priority Fauna Database, and it will be used to inform conservation and management decisions. Any other opportunistic sightings of Threatened and Priority species can also be reported via the same email.

Table 2: Techniques for monitoring artificial hollows

<table>
<tr><th>Technique</th><th>Description of Technique</th></tr>
<tr><td>Looking for signs of use</td><td>Cobwebs covering the entrance to the hollow will indicate that the hollow has not been used recently. This would also apply to other light debris that may have fallen to cover the opening partially. Signs of recent use or interest in the hollow include evidence of chewing.</td></tr>
<tr><td>Observing parent behaviour around a hollow</td><td>The behaviour of parent birds around a hollow can indicate an approximate age of young in the nest.
<table>
<tr><th>Parent Behaviour</th><th>Approximate Stage and Age of Young</th></tr>
<tr><td>Prospecting for hollow</td><td>Unborn</td></tr>
<tr><td>Male only seen out of hollow</td><td>Egg or very young nestling (< 3 - 4 weeks)</td></tr>
<tr><td>Both parents seen entering/exiting the hollow</td><td>Nestling(s) has hatched (> 3 - 4 weeks)</td></tr>
</table></td></tr>
<tr><td>Observing feeding flocks</td><td>Flocks of all male birds can indicate that females are incubating eggs. When flocks are mixed it suggests the birds have either not laid yet or that the nestlings have hatched and no longer require brooding (approximately 3 - 4 weeks old).</td></tr>
<tr><td>Tapping to flush female</td><td>When females are sitting on eggs they will usually respond to tapping or scraping at the base of their tree by appearing at the entrance or flying from the hollow opening. This is not a guarantee of breeding activity, but an indication that breeding is possibly occurring in the hollow.
Tapping or scraping is best undertaken between 10 am - 3 pm when females will most likely to be sitting.</td></tr>
<tr><td>Observing insect activity around a nest</td><td>Faecal matter produced by nestlings attracts insects, especially flies and ants. The type and number of these insects will help to indicate how old any nestlings present may be. Factors such as temperature and humidity will also affect insect activity and so observations of insect activity should only be used as supporting evidence for other indications of age/use. Blowflies around the entrance of a nest usually indicate that a death has occurred.</td></tr>
<tr><td>Listening for nestling</td><td>With experience it is possible to determine if nestlings are present, and a broad estimate of age based on the type and volume of noises they make.</td></tr>
<tr><td>Looking inside a nest</td><td>This can be achieved either with the aid of a telescopic pole and camera or mirror, or with the use of a ladder or other climbing equipment. This method can obtain the most detailed monitoring information for artificial hollows. However, it is also the most time consuming and difficult to organize. Also keep in mind that it is important to limit disturbance to breeding birds. Special equipment is likely to be needed depending on the height and positioning of artificial hollows. There are also safety issues associated with ladder or rope climbing to reach nests to undertake observations.</td></tr>
</table>

When do I monitor artificial hollows?

The minimum frequency of monitoring, and the techniques used will be determined by the aims of the monitoring, and the resources available. It is important to limit disturbance to breeding birds, and this should be considered when determining the techniques, frequency, and timing of monitoring (Table 3).

Breeding by the three southwest black cockatoos varies, and the timing of monitoring of artificial hollows should accommodate the breeding of the likely target species. The Commonwealth Department of Climate Change, Energy,

the Environment and Water (DCCEEW) Species Profile and Threats Database (SPRAT) database records the breeding periods of each of the species as:

- Carnaby's cockatoo - July to November (with peak between August to September)
- Baudin's cockatoo - October to January
- Forest red-tailed black cockatoo - every month, with peaks in April to June and August to October

The age of Carnaby's cockatoo nestlings can be determined by using the following publication:

Saunders, D. A., Dawson, R. and Nicholls, A. O. (2015). Aging nestling Carnaby's cockatoo, *Calyptorhynchus latirostris,* and estimating the timing and length of the breeding season. *Nature Conservation* **12:** 27-42 http://dx.doi.org/10.3897/natureconservation.12.4863

This document provides a series of photographs to illustrate changes in size and plumage of nestlings over the 10–11 weeks of the nestling period which can be used to estimate the approximate age of Carnaby's cockatoo nestlings, up to about nine weeks, by comparing appearance with the nestlings illustrated in the photographs.

Any monitoring that involving disturbance or handling of black cockatoos, requires lawful authority (https://www.dbca.wa.gov.au/licences-permits). Such activity requires specialist skills and authorisation under the *Biodiversity Conservation Act 2016*.

Table 3: Recommended frequency for monitoring artificial hollows, as determined by the aim of the monitoring

Monitoring Aim	Frequency of Visits	Monitoring Techniques
To determine possible use by black cockatoos	At least once during peak breeding season.	• Looking for signs of use (evidence of chewing) • Observing behaviour of adults around a hollow • Tapping or scraping to flush female • Listening for nestlings • Looking inside nest
To confirm use by black cockatoos	At least two visits during peak breeding season.	• Looking for signs of use (evidence of chewing) • Observing behaviour of adults around a hollow • Tapping or scraping to flush female • Listening for nestlings • Looking inside a nest Observing breeding evidence from at least two of the techniques confirms use by black cockatoos.
To determine nesting success by black cockatoos	Preferably fortnightly visits between July and December. As a minimum, at least 3 visits spread throughout breeding season.	• Observing insect activity around a nest • Listening for nestlings • Looking inside a nest The presence of eggs or nestlings inside a nest will help to determine nesting success.
To determine use by any species	As often as possible.	As a minimum, inspection from the ground: • Looking for signs of use To confirm: • Looking inside a nest
To determine maintenance requirements	At least every two years and preferably annually.	A basic maintenance check can be undertaken from the ground. Looking inside the nest using a telescopic pole with camera or mirror enables inspection of the sacrificial chewing posts and level of substrate/nesting material. A ladder or elevated work platform will be required for a comprehensive check, and to replace sacrificial chewing posts and carry out other maintenance.

How do I maintain artificial hollows?

Natural hollows used by black cockatoos are typically present for many decades and if artificial hollows are expected to provide a similar role, then they will require maintenance to ensure they continue to function as potential nesting locations for black cockatoos for the long term.

In many cases artificial hollows are required as a condition of development to offset loss of natural hollows, in which case State and Commonwealth offset policy expects that the artificial hollows continue to provide that function for the duration of the impact (or alternatively the expected period of time the natural hollow would have persisted, or the life of the environmental approval). As part of establishing artificial hollows the responsibility and regime for long term monitoring and maintenance should also be established.

Periodic maintenance checks should be undertaken at least every two years, preferably annually, for as long as the artificial hollow is required. Maintenance actions should be completed prior to the breeding season.

Artificial hollow base needing repair.
Photo by Christine Groom

Any problems identified during monitoring or maintenance checks should be addressed as soon as possible and will require similar specialist skills and equipment as used in installation. If breeding is currently occurring, maintenance may need to be delayed if it is likely to disturb the parents or nestling. Maintenance concerns regarding the security of attachment points or the stability of the tree or pole should be addressed as a priority for safety reasons. Likely maintenance includes:

- replacement of sacrificial chewing posts (frequently);
- top-up or replacement of nesting substrate to ensure it reaches the ladder and chewing posts (occasionally);
- replacement of nest bases (occasionally);
- repair or replacement of attachment points (infrequently); and/or
- repair of any cracks to wooden hollows (infrequently).

For artificial hollows known to be used, spare chewing posts should be taken into the field when undertaking maintenance checks as these are likely to need replacement.

Artificial hollows are likely to need to be completely replaced after many years, and other circumstances may require the relocation of artificial hollows (e.g. if the tree they are in becomes damaged).

Applying this guidance to forest red-tailed black cockatoo and Baudin's cockatoo

The information presented here is based on experience with Carnaby's cockatoo, for which many examples of successful use of artificial hollows exist, and forest red-tailed black cockatoo for which a few known examples of use exist. However, to date there are no records of Baudin's cockatoo using artificial nest hollows.

A definite reason for this lack of use is not yet known but may relate to the location of artificial hollows installed to date (few or none placed in Baudin's cockatoo breeding sites where breeding is occurring and natural hollows are limiting) or design or installation issues, such as hollows not being installed high enough in tall forest canopy.

Before deciding to install artificial hollows for forest red-tailed black cockatoo or Baudin's cockatoo, it is recommended that you discuss your proposal with, and/or seek advice from, the Department of Biodiversity, Conservation and Attractions, BirdLife Australia, or the WA Museum.

Maps of Black Cockatoo Breeding Range

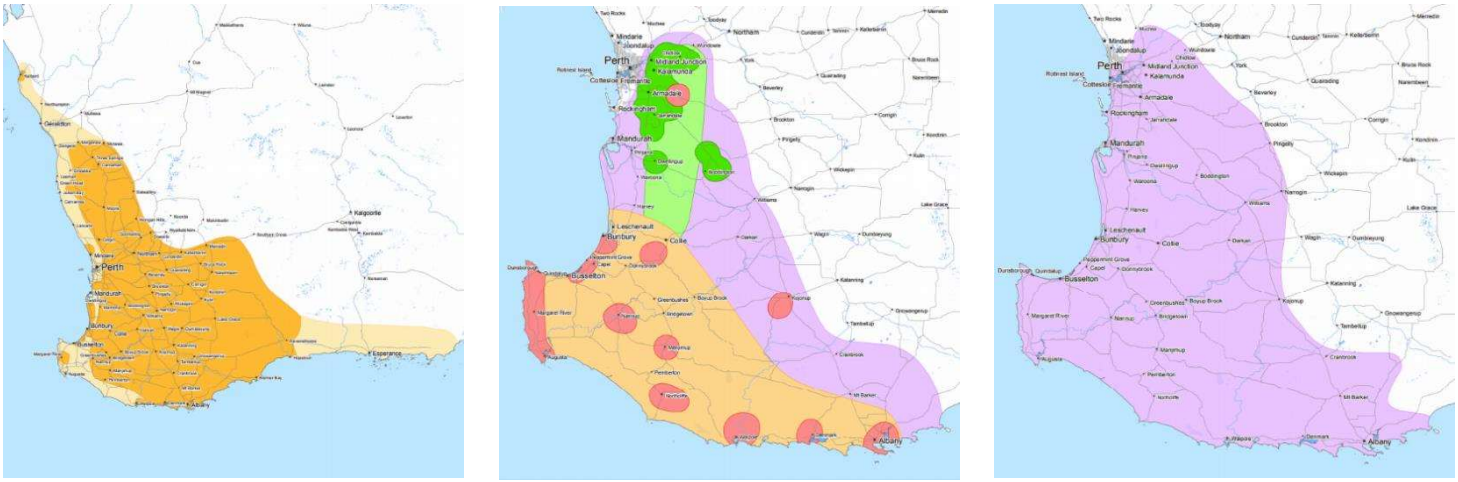


Image: Commonwealth of Australia, 2011

The maps show the modelled distributions of Carnaby's cockatoo (left), Baudin's cockatoo (centre) and forest red-tailed black cockatoo (right). For Baudin's cockatoo, the breeding range is indicated by the red (known breeding areas) and yellow (predicted breeding range), and for Carnaby's cockatoo, the breeding range is indicated by the orange.

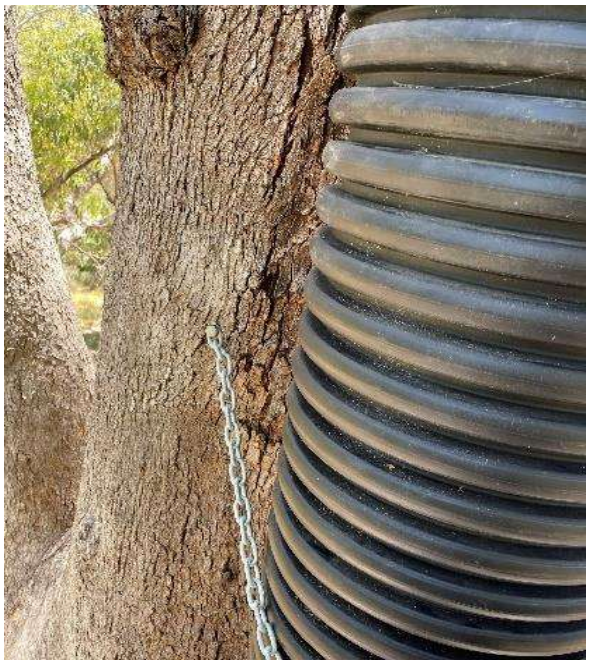
Artificial Hollows – best current design and installation specifications

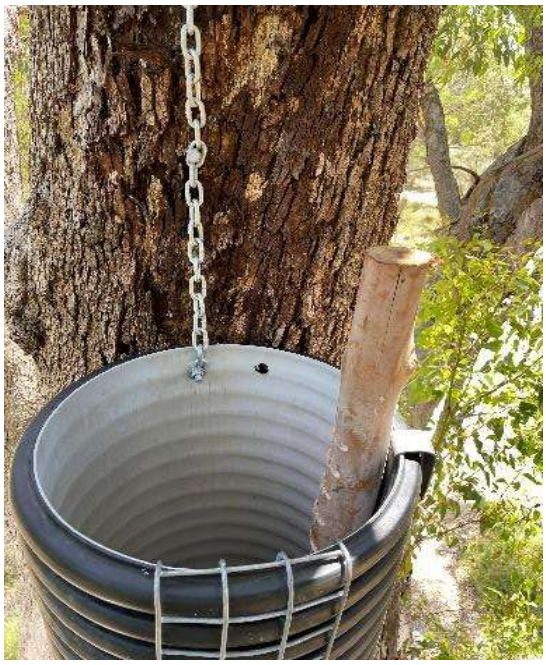
The specifications below outline the most recent detailed specifications for artificial hollow construction installation and maintenance. These would provide for a well-constructed and installed artificial hollow that is most likely to have an adequate lifespan (minimum 50-years). To ensure longevity, regular maintenance will be required on the nesting material, sacrificial post, and removal of debris from the hollow.

It is highly recommended that any artificial hollows installed as a condition of environmental approval (for example where the artificial hollow is expected to provide benefit for a long period), or installed on DBCA managed lands would meet these specifications as a minimum.

Artificial Hollow Construction Specifications

Dimensions:	internal diameter 375mm (430 mm external), 1200 mm in height, and installed a minimum of 4 m above ground on private property and 8 m on public land.
Pipe material:	Fifty-year UV rated culvert pipe (polypropylene material used with corrugated outer wall and thin inner sleeve. Recommended brand or similar: The 'Vinidex StormPRO' pipes are twin wall, corrugated, polypropylene pipes for non-pressure stormwater and drainage applications, which meet all the requirements for artificial hollows.
Chain:	6 mm galvanised (not zinc plated). The hollows will be attached to the tree by chain and fixed by 4 points.
Fixings:	Galvanised M10 coach screws four x 75 mm. Two on the weight bearing chain at the top and one each side of the hollow.
Ladder:	50 x 50 mm square galvanised weldmesh 4mm thick.
Chewing posts:	Untreated Jarrah, Marri or Wandoo that meet requirements in "Adding ladders and sacrificial chewing posts" above.





Artificial hollow design, the fixing method, and the sacrificial chewing post extending above the hollow rim. Left image shows the side chains that are to be at a 30-degree upwards angle to allow the hollow to move up the tree as the tree grows. Right image shows the top weight bearing fixing which is to be 100 mm above the hollow to allow upwards movement.

Left image shows the internal view, including substrate material placed on the floor to line the hollow, and the internal weld mesh ladder. Substrate material must be course, hard, wood chips at least 200 mm deep.

Centre image shows one hard wood sacrificial post which is to fit and connect to the rim of the hollow by a hook screwed to the post to ensure it does not come loose, block the hollow or injure the occupants.

Right image shows the hard plastic floor which is to be securely fixed with a minimum of 12 small drainage holes. Larger holes may result in the occupants chewing the base.

Monitoring and Maintaining Artificial Hollows

It is important to continue a regime of regular maintenance for however long the artificial hollow is required. Artificial hollows erected as a condition of development to offset the loss of natural hollows may be required to be available and maintained for the life of the development approval. As part of establishing artificial hollows the responsibility and regime for long term monitoring and maintenance should also be established.

Periodic maintenance checks should be undertaken at least every two years, preferably annually, for as long as the artificial hollow is required. Maintenance actions should be completed prior to the breeding season.

Further Reading

DBCA webpage and fauna profiles: Black cockatoos

Department information sheets: Fauna Note – Corellas and other flocking cockatoos

BirdLife Australia webpage and brochure: Identify your Black cockatoo

Western Australian Museum webpage and fact sheets: Cockatoo Care

Saunders DA et al. (2022) Artificial nesting hollows for the conservation of Carnaby's cockatoo *Calyptorhynchus latirostris*: definitely not a case of erect and forget. Pacific Conservation Biology doi:10.1071/PC21061

Acknowledgements

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Citation

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Disclaimer

Last updated: 08 Feb 2023

Government of Western Australia
Department of Water and Environmental Regulation

Bilateral Assessment
Clearing Permit Decision Report

This report has been prepared to fulfil the requirements of an accredited environmental assessment process between the Commonwealth and State governments, pursuant to a bilateral agreement established under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This report is set out in four parts:
- Part 1: Application and site details;
- Part 2: Assessment against matters of national environmental significance (pursuant to the EPBC Act);
- Part 3: Assessment against the clearing principles (pursuant to the *Environmental Protection Act 1986* (EP Act)); and
- Part 4: References and databases

Part 1: Application and site details

1. Application details and outcome

1.1. Permit application details

Permit number:	CPS 9352/2
EPBC number:	2021/8894
Permit type:	Purpose permit
Applicant name:	Co-operative Bulk Handling Limited
Application received:	24 May 2024
Application area:	1.7 hectares (ha) of native vegetation within 9.59 ha of footprint
Purpose of clearing:	Construction of a rail siding and fixed loading facility
Method of clearing:	Mechanical clearing
Property:	Lot 8 on Deposited Plan 419100, Bindoon-Moora Road reserve (PIN 11709929) Unnamed rail reserve (PIN 1053262)
Location (LGA area/s):	Shire of Moora
Localities (suburb/s):	Moora

1.2. Description of clearing activities.

On 6 December 2023, the Department of Water and Environmental Regulation (DWER) granted Co-operative Bulk Handling Limited (CBH) a Clearing Permit CPS 9232/1 under section 51E(1) of the *Environmental Protection Act 1986* (EP Act), and in accordance with the bilateral agreement under section 45 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

Clearing Permit CPS 9352/1 authorised CBH to clear up to 1.7 hectares (ha) of native vegetation within a larger 9.59 ha application area for the purpose of constructing a new rail siding and fixed loading facility associated with the grain storage infrastructure as part of upgrades to the CBH Grain Receival Point, Moora. Upgrades to the rail siding and grain infrastructure are a component of the State significant Agricultural Supply Chain Initiative (ASCI) project that will deliver economic value for the grain industry in Western Australia. The 1.7 ha of native vegetation proposed to be cleared is contained within a single, contiguous area located immediately east of the existing railway. The vegetation is a part of a roadside corridor of remnant vegetation in an extensively cleared landscape and is characterised as the Eucalypt Woodlands of the Western Australian Wheatbelt Ecological Community, listed as a Threatened Ecological Community (TEC) under the EPBC Act.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	24 May 2024
Decision area:	1.7 hectares (ha) of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

On 6 December 2023, DWER determined to grant Clearing Permit CPS 9352/1 to authorise CBH to clear no more than 1.7 ha of native vegetation within a larger 9.59 ha application area.

One appeal was lodged under section 101A(4) of the EP Act against the granting of CPS 9352/1. On 22 May 2024, the Minister for Environment; Climate Action (the Minister) issued a determination to dismiss an appeal against the grant of CPS 9352/1 (appeal 054/23). This amendment to Clearing Permit CPS 9352/1 is to give effect to the determination made by the Minister. In his determination, the Minister recommended the following amendments to the clearing permit:

- amend Condition 12 (b) to replace the words "…. Designed to prohibit access to livestock and kangaroos into the offset sites' with the words 'of such a design as to prohibit access of livestock and kangaroos into the offset sites whilst preventing native fauna entanglement'
- amend Condition 13(a)(i): the locations of five proposed artificial Carnaby's Black Cockatoo hollows are as detailed in Figure 2E of Schedule 2.

In his determination, the Minister concurred with DWER's assessment that the proposed clearing is at variance with Clearing Principles (a), (b), (d) and (e), and that upon a review by DWER, the proposed clearing may be at variance to Clearing Principle (c). The Delegated Officer noted that the recommended amendments do not require any changes in the extent and location of proposed clearing area and the offset requirements. The total extent of clearing proposed under this amendment (CPS 9352/2) remains no more than 1.7 ha of native vegetation within a larger 9.59 ha.

Given the above, the Delegated Officer decided to grant a clearing permit to give effect to the Minister's determination and modify the relevant conditions. The assessment has not changed from the assessment for CPS 9352/1, except for aspects of Clearing Principle (c).

2. Site Information

The proposed clearing area has not changed from CPS 9352/1 as depicted in Figure 1, below.
Given no changes in the application area, the site information described for CPS 9532/1 has not changed and is also applicable for CPS 9352/2.

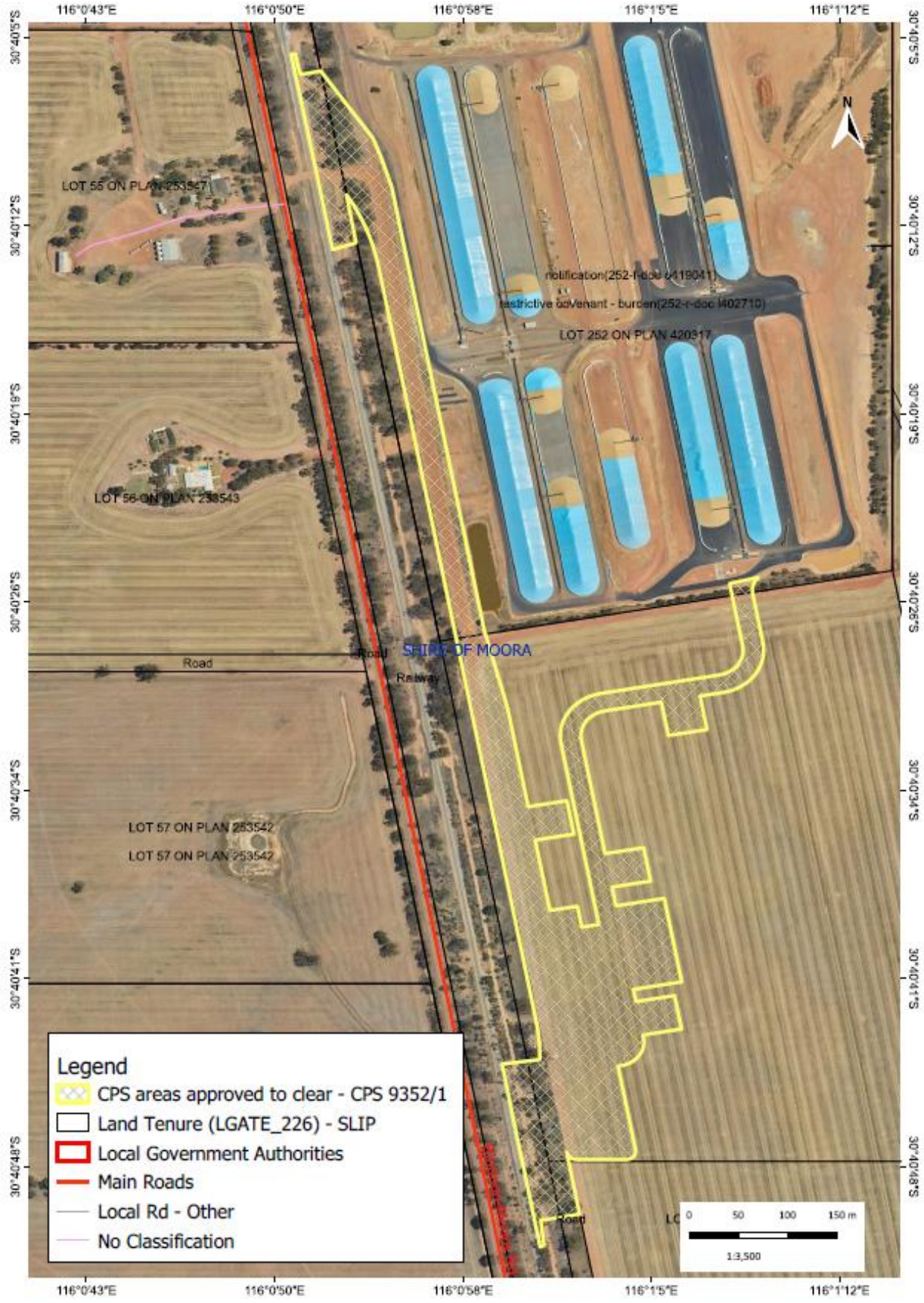

Figure 1. Approved clearing area hatched yellow

Part 2: Assessment against matters of national environmental significance

The assessment against matters of national environmental significance (MNES) has not changed from that of CPS 9352/1.

3. Description of controlling provision(s)

The controlling provision for CPS 9352/1 remains applicable to CPS 9352/2.

4. Summary of impacts

The Ministerial amendment does not change the extent and location of the proposed clearing. Consequently, the impacts of the proposed clearing under CPS 9352/2 to the MNES are the same as those under CPS 9352/1.

5. Public consultation

For CPS 9352/1, the applicant had undertaken consultation with the following stakeholders:

- Shire of Moora
- Department of Water and Environmental Regulation
- Department of Biodiversity, Conservation and Attractions
- Department of Planning, Lands and Heritage
- Main Roads Western Australia
- Department of Primary Industries and Regional Development
- The Yued people as part of the Noongar claimants of the Yued Native Title Claim area (WC1998/070), Southern Noongar Claim (WC1996/109), and the Single Noongar Claim (Area 1) WC2003/006 (Archae-aus, 2021).

CPS 9352/1 was advertised on DWER's website on 6 December 2023 with a 21-day public appeal period. With the Minister's determination on the appeal and that no changes in the extent and location of the application area and offset sites are required, no further public consultation is required for CPS 9352/2. The decision for the amendment will be published on DWER's website, however, under section 105(b) of the EP Act, there are no appeal rights for either the permit holder or third parties in relation to this amendment.

6. Avoidance, mitigation and offsets

There are no significant changes to the avoidance, mitigation and offsets assessment since CPS 9352/1. The applicant remains committed to the application of avoidance, minimisation and mitigation measures previously committed for CPS 9352/1.

Offset management plan

For CPS 9352/1, the applicant proposed to offset the significant residual impacts by managing and improving the quality of native vegetation, TEC, black cockatoo foraging and breeding habitat on Lot 4300 on Plan 30175, Moora in the Shire of Moora (Lot 4300) and Lot 1397 on Plan 125128, Lake Hinds in the Shire of Wongan Ballidu (Lot 1397). Both properties will be afforded in perpetuity protection through conservation covenants executed under section 30B of the *Soil and Land Conservation Act 1945*.

The amendment does not change the magnitude of the significant residual impact, the offset requirements and adequacy of offsets proposed for CPS 9352/1. To reflect the Minister's recommendation in his determination, two amendments to the details of the offset management plan, particularly with regards to the location of the proposed artificial nesting boxes (ANB) and the specification of the fencing of the offset sites are discussed below.

Installation of artificial nest boxes.

For CPS 9352/1, the applicant had committed to installing five artificial nest boxes (ANB) at Lot 4300 as a part of the offset management plan to ensure breeding opportunities for black cockatoos are maintained after clearing.

In late April 2024, the applicant commissioned Mr Rick Dawson of Australian Black Cockatoo Specialists (ABCS) to install five ANB on Lot 4300. However, upon inspection and assessment on site, ABCS determined that the trees within Lot 4300 are less suitable to support ANBS due to the small trunk sizes. Alternatively, ABCS identified five trees along the Bindoon-Moora Road that are suitable for the purpose. On 24 April 2025, five ANBs were installed. The five ANBs were numbered CBHM01 to CBHM05 (south to north) and placed on Salmon Gum *Eucalyptus salmonophloia* within CBH land (see Table 1, below) (R. Dawson, 2024). The locations of the trees are depicted in Figure 2, below. The changes in the locations of the ANBs from CPS 9352/1 is reflected in the amendment of Condition 13(a)(i) of the Permit.

Table 1. Artificial nesting boxes details (R. Dawson, 2024)

Hollow No	SJ No	Tree Species	Northing	Southing	Post	Aspect	Height to Entrance	Diameter	Depth	Depth to substrate	Lts wood chips	Shade (1-5)
CBHMO1	1162	**E.Salmonophloia**	4050810	6605640	Yes	ESE	7900	375mm	1200	900	30	3
CBHMO2	1153	**E.Salmonophloia**	0405684	6606280	Yes	WNW	8200	375mm	1200	910	30	3
CBHMO3	1128	**E.Salmonophloia**	0405679	6606315	Yes	SSW	8000	375mm	1200	900	30	4
CBHMO4	1195	**E.Salmonophloia**	0405640	6606517	Yes	E	7700	375mm	1200	920	30	3
CBHMO5	1210	**E.Salmonophloia**	0405575	6606923	Yes	N	8000	375mm	1200	920	30	3

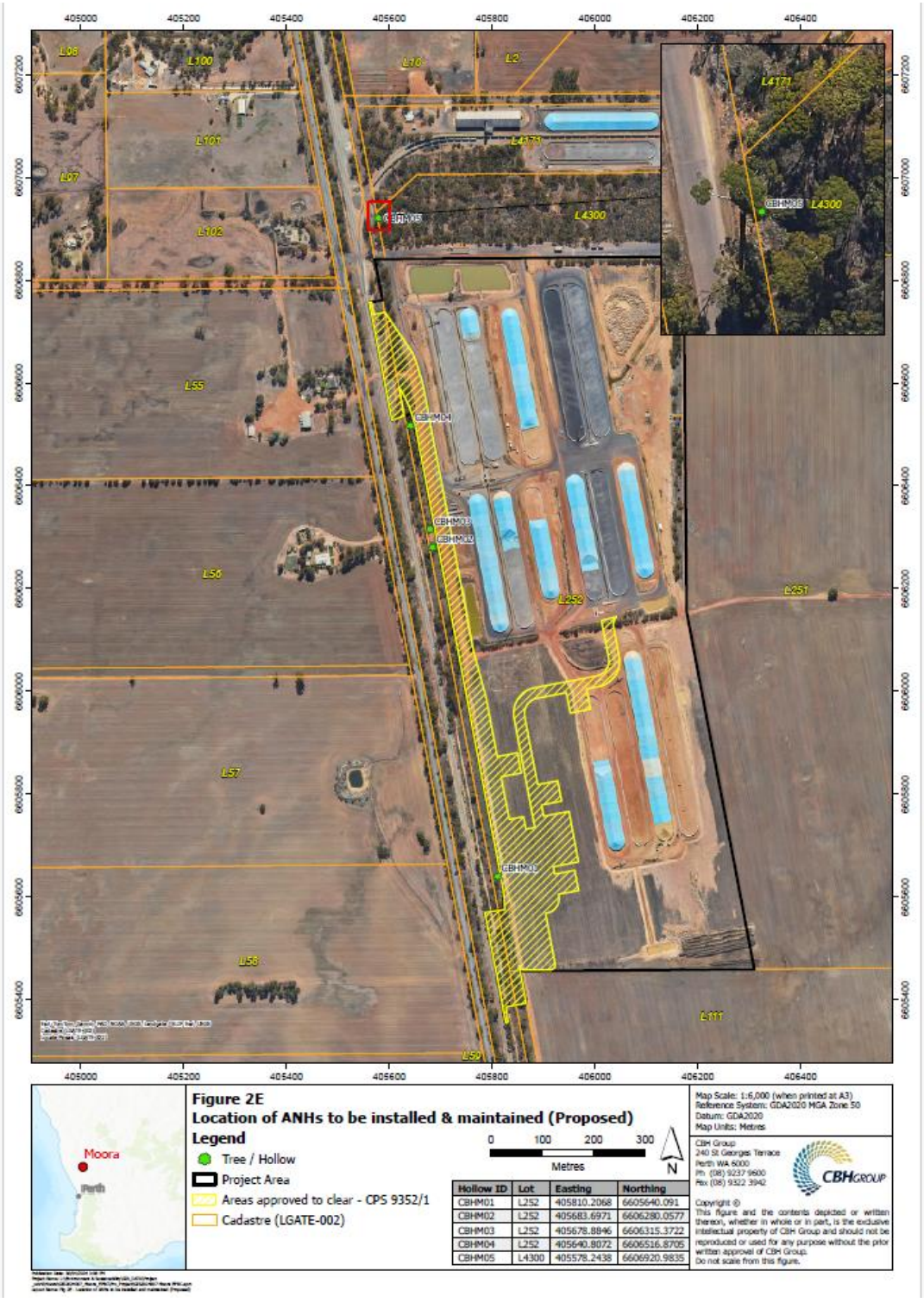

Figure 2. The locations of five artificial nesting boxes

Fencing of the offset sites

In the Decision Report for CPS 9352/1, it was acknowledged that grazing posed a threat to the vegetation and proposed rehabilitation program within the offset sites at Lot 4300 and Lot 1397. Fencing of the offset sites can prohibit access of livestock and kangaroos into the sites. As a part of the offset management plan, the applicant was required to construct fences around the offset sites, and this was placed as a condition of CPS 9352/1. The assessment and fencing requirement have not changed for CPS 9352/2. However, it is considered important to ensure that the fencing design would prevent native fauna entanglement while prohibiting access of livestock and kangaroos. This design requirement is reflected in the amended offset management condition of the amended Permit CPS 9352/2.

7. Other relevant considerations

Other relevant considerations for CPS 9352/1 have not changed and remain applicable to CPS 9352/2.

Part 3: Assessment against the clearing principles

8. Assessment of application against clearing principles

The assessment against the clearing principles has not changed substantially from the previous assessment of CPS 9352/1. Consistent with the assessment for CPS 9352/1, the proposed clearing is at variance with Clearing Principles (a), (b), (d) and (e). Upon review, the Delegated Officer found that the proposed clearing may be at variance to Clearing Principle (c), and the amended assessment for Clearing Principle (c) is discussed below.

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.

Proposed clearing is may be be at variance to this Principle

A flora and vegetation survey (ELA, 2020a) and a targeted survey (ELA, 2020b) considered 98 conservation significant flora species as possibly occurring within the application area and vicinity. The June 2020 survey (ELA, 2020a) recorded *Eremophila scaberula* (Threatened) and *E. glabra* subsp. *chlorella* (Threatened) from within the survey area. Subsequently, the project area was designed to be sited outside of the identified Threatened flora species occurrences. The application area is therefore void of Threatened flora species listed under the BC Act. However, the application area is within the recommended 50 metre buffer to a known population of *E. glabra* subsp. *chlorella* (endangered under the BC Act).

Evidence

- According to DBCA's TPFL and WA Herbarium datasets, records of four threatened flora species occur within a 10 kilometre radius of the application area; *Acacia cochlocarpa* subsp*. cochlocarpa, Eremophila glabra* subsp*. chlorella, Eremophila scaberula* and *Hemiandra gardneri*.
- As discussed under principle (a), one population of *Eremophila glabra* subsp*. chlorella* (endangered under the BC Act) occurs within 50 metres of the application area.
- The application area and the *Eremophila glabra* subsp. *chlorella* population are separated by a 28-metre cleared area associated with the existing railway infrastructure.

Assessment

For CPS 9352/1, the proposed clearing was assessed as not at variance to the principle. Since the grant of CPS 9352/1, the Delegated Officer reviewed the assessment.

The application area was selected to avoid and minimise clearing and indirect impacts to *E. glabra* subsp. *chlorella* populations recorded during the June 2020 survey (ELA, 2020a) in the central portion of the survey area, occurring on both sides of the railway line. A population of *E. glabra* subsp. *chlorella* is recorded within 28 metres of the application area. While the recommended buffer of 50 metres around threatened flora species cannot be achieved, no individuals of this population will be directly impacted by the proposal and the portion of the application area nearest to the identified *E. glabra* subsp. *chlorella* population is mostly void of vegetation and clearing in the area would be limited. Demarcating the project and clearing area could avoid inadvertent removal of adjacent vegetation including the threatened flora species. The existing railway line and the Bindoon-Moora Road to the west of the population are also more likely to have impact on the populations due to edge effects. The proposed clearing is not likely to further degrade the condition of the populations or significantly alter the likely persistence of the population at this location. The application area, however, can be considered suitable habitat for the population.

A population of the Threatened *E. scaberula* (Rough Emu Bush) was identified approximately one kilometre of the proposed clearing. However, the application area contains habitats that may support the movement of native pollinators of the nearby identified *E. scaberulla.* Considering the advice derived from the *Interim Recovery Plan* for this species that, *"… all known habitat is habitat critical …"* (Stack, G and English, D., 1994)2004), the proposed clearing can be considered as 'may be at variance' to this clearing principle. However, given the distance between the proposed clearing and the *E. scaberula* population and that no *E. scaberula* individuals will be cleared, it is considered unlikely that the proposed clearing represents a significant residual impact for the flora species.

Summary
The vegetation within the application area does not include threatened flora under the BC Act. Based on the evidence and assessment above, the proposed clearing may be at variance to this principle, but clearing is unlikely to result in significant residual impact for the identified threatened flora species in the local area. No conditions are required for the flora species.

9. Planning instruments and other relevant matters.

Planning instruments and other matters have not changed from the Clearing Decision Report CPS 9352/1.

Part 5: References and databases

10. GIS datasets

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

- Aboriginal Heritage Places (DPLH-001)
- 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)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Regional Parks (DBCA-026)
- Soil and Landscape Mapping – Best Available

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

11. References

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Eco Logical Australia (ELA) (2021a) *Native Vegetation Clearing Permit Supporting Document: Moora Grain Receival Site – Out-loading Project.* Prepared for Co-operative Bulk Handling Limited DWERDT456786

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Appendix A – Surveys of the application area

Eco Logical Australia (ELA) was engaged by CBH Group (CBH) to conduct a Reconnaissance and Targeted flora and vegetation survey and a Level 1 fauna survey and black cockatoo habitat assessment of a 3.3 kilometre (km) portion of rail reserve adjacent to the Moora CBH Depot, which included the application area, in June 2020 (ELA, 2020a). Based on the results of the June 2020, the survey area was modified to avoid an identified population of *Eremophila scaberula* (Endangered under the EPBC Act and Critically Endangered under the BC Act). Subsequently, ELA undertook a Detailed and Targeted flora and vegetation survey, Basic fauna survey and Targeted black cockatoo habitat assessment within the modified survey area in September 2020 (ELA, 2020b). All surveys were in accordance with the EPA Technical Guidance (EPA, 2016a and 2016b). Summary of the surveys were presented in the Decision Report for CPS 9352/1. The summary has not changed for CPS 9352/2.

Appendix B. Surveys of offset sites

CBH commissioned consultants to perform biological surveys to identify the flora, fauna and environmental values of Lot 4300 on Deposited Plan 30175, Moora, and Lot 1397 on Deposited Plan 125128. The surveys were intended to assess the Lots' suitability to offset the residual significant impacts resulted from the proposed clearing.

The following surveys were carried out over Lot 4300:

- *Moora Grain Receival Site – Biological Assessment* (360 Environmental, December 2019)
- *Moora Offset Site Investigation Wheatbelt Woodland TEC and Black Cockatoo (GHD, 2022)*
- *Lot 4300 Moora Further Ecological Studies* (ELA, May 2023)

Surveys relevant to Lot 1397 are as follows:

- *Moora Offset Site Investigation Wheatbelt Woodland TEC and Black Cockatoo (GHD, 2022)*
- *Lot 1397 Waddington-Wongan Hills Rd Detailed Flora and Vegetation Survey Phase One* (ELA, 2023).

Survey findings are summarised as the offset values of the Lots and presented in Section 6.4 of the Decision Report for CPS 9352/1. This summary has not changed for CPS 9352/2.

Appendix C. Summary of the Offset Calculations under the *EPBC 1999 Act Offset Policy 2012* and the Western Australia's *Environmental Offset Policy*

The Offset requirement calculations under the EPBC Act Offset Policy and the Western Australia's Environmental Offset Policy have not changed from CPS 9352/1. The summary is provided in the Decision Report for CPS 9352/1.