GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9470/1

File Number: DWERDT520836

Duration of Permit: From 1 May 2022 to 1 May 2027

PERMIT HOLDER

Centerwest Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 3314 on Plan 207262, Shire of Gingin

AUTHORISED ACTIVITY

The permit holder must not clear more than 5 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 1 May 2024.

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

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

(a) avoid the clearing of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of clearing on any environmental value.

3. Weed and dieback management

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

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and

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

4. Revegetation - mitigation

(a) The Permit Holder must, within 18 months of the commencement of clearing authorised under this Permit:

(i) undertake deliberate *planting* of at least 420 trees within the area cross-hatched red in Figure 2 of Schedule 1, or an alternative area identified as otherwise approved by the *CEO*;

(ii) the trees planted in accordance with condition 4(a)(i) must comprise suitable Carnaby's black cockatoo foraging species and include a combination of *Corymbia calophylla*, *Eucalyptus todtiana* and *Banksia menziesii*;

(iii) ensure *planting* is undertaken at the *optimal time*;

(iv) undertake *weed* control and watering of seedlings for at least three years post *planting*.

5. Wind erosion management

The permit holder must commence horticultural development activities no later than one (1) month after undertaking the authorised clearing activities to reduce the potential for wind erosion.

6. 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

No.	Relevant matter	Specifications
		System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 2; (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 3; (g) the date that horticultural development activities commenced in accordance with condition 5; and (h) actions taken to revegetate in accordance with condition 4.

7. Reporting

The permit holder must provide to the *CEO* the records required under condition 6 of this permit when requested by the *CEO*.

DEFINITIONS

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

Table 2: Definitions

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

END OF CONDITIONS

Ryan Mincham
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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

8 April 2022

SCHEDULE 1

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

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

The boundary of the area within which revegetation of Black Cockatoo foraging habitat is to occur is shown in the map below (Figure 2).

Figure 2: Map of the boundary of the area within which revegetation of Black Cockatoo foraging habitat is to take place

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9470/1
Permit type:	Area permit
Applicant name:	Centerwest Pty Ltd
Application received:	27 October 2021
Application area:	5 hectares of native vegetation
Purpose of clearing:	Irrigated horticulture
Method of clearing:	Mechanical removal
Property:	Lot 3314 on Plan 207262
Location (LGA area/s):	Shire of Gingin
Localities (suburb/s):	Wanerie

1.2. Description of clearing activities

The vegetation proposed to be cleared comprises scattered trees within three proposed irrigation pivots on a land parcel covering 382 hectares (see Figure 1, Section 1.5). The total area of clearing proposed throughout the proposed pivots equals 5 hectares (Centerwest, 2021). The proposed clearing is for the purpose of developing irrigated horticulture.

1.3. Decision on application

Decision:	Granted
Decision date:	8 April 2022
Decision area:	5 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and one submission was received. Consideration of matters raised in the public submission is summarised in Appendix B.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix C), relevant datasets (see Appendix H.1), the findings of the Black Cockatoo habitat survey (see Appendix B), the clearing principles set out in Schedule 5 of the EP Act (see Appendix D), relevant planning instruments and any other matters considered relevant to the assessment (see Section 2).

The assessment identified that the proposed clearing will result in:

- the loss of native vegetation that is suitable foraging habitat for Carnaby's Black Cockatoos
- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- potential land degradation in the form of phosphorus export (eutrophication) and wind erosion.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined that the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

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

- avoid, minimise to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- commence proposed works within one month of clearing; and
- revegetate at least five hectares of Carnaby's Black Cockatoo foraging species.

1.5. Site maps

Figure 1 Map of the application area

The areas cross-hatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

Figure 2 Map of the revegetation area

The areas cross-hatched red indicates the area conditioned for the revegetation of Black Cockatoo foraging habitat under the granted clearing permit.

2 Legislative context

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

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

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

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

2.1. Avoidance and mitigation measures

Evidence was submitted by the applicant, demonstrating that avoidance and mitigation measures have been considered. The applicant utilised the services of Western Irrigation to design the pivot placements with a brief to minimise the disturbance of native vegetation.

The applicant has undertaken to revegetate a five hectare area on the same property with Carnaby's Black Cockatoo foraging habitat (Figure 3) to mitigate any potential impact to the species through loss of foraging potential. Based on the climate of the area and the applicant's experience of planting on the property, the month of September is considered the optimal planting time to ensure the successful establishment of vegetation. In order to allow time for the appropriate ground preparation and the sourcing of an adequate number of trees, the revegetation is scheduled to begin within 18 months of the commencement of clearing.

The Delegated Officer was satisfied that the applicant has undertaken reasonable measures to avoid and minimise potential impacts of the proposed clearing on environmental values (for further details see Appendix A).

2.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix C) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix D) identified that the impacts of the proposed clearing present a risk to biological values (fauna) and land degradation. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

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

Assessment

A desktop assessment of the application area identified eight conservation significant fauna species specially protected under the *Biodiversity Conservation Act 2016* within the local area. This included five bird species, one invertebrate species and one mammal species. Noting the habitat requirements of the recorded species, the mapped vegetation type and the condition of the vegetation within the application area, the application area is likely to only comprise suitable habitat for Carnaby's Black cockatoo (*Calyptorhynchus latirostris*).

The application area is located within the modelled distribution of Carnaby's cockatoo (*Calyptorhynchus latirostris*). The species is classified as threatened under the BC Act, as well as the EPBC Act. Carnaby's cockatoos were once numerous in the southwest of Western Australia (DPaW, 2013), however has suffered at least a 50 per cent decline in the total population and has disappeared from more than a third of its breeding range between 1968 and 1990 (DPaW, 2013). It is now listed as endangered under both the federal *Environmental Protection and Biodiversity Conservation Act* (EPBC Act) and state *Biodiversity Conservation Act 2016* (WA) (BC Act). The decline of Carnaby's cockatoo has been due primarily to the loss and fragmentation of habitat, as a result of clearing of native vegetation, since the middle of the 20th century (DPaW, 2013). Identified breeding and nearby feeding habitat, former breeding habitat that has hollows intact and vegetation that provides habitat for feeding, watering and regular night roosting is considered habitat critical for recovery of the species (DPaW, 2013).

Carnaby's cockatoo forages on the seeds, nuts and flowers of variety of plants, including Proteaceous species (banksia, hakea and grevillea), allocasuarinas, eucalyptus species, marri and a range of introduced species (DPaW, 2013). Food resources within the range of breeding sites and roost sites are important to sustain Carnaby's cockatoo populations. Carnaby's cockatoos generally forages within six kilometres (and up to 12 kilometres) of its nesting or night roost site (Commonwealth of Australia, 2017). A confirmed Black Cockatoo breeding site has been recorded approximately 900 metres west of the application area.

A Black Cockatoo Habitat Survey was undertaken by Tony Kirkby on 25 January 2022 to assess breeding, feeding and roosting habitat suitable for use by Black Cockatoos *Calyptorhynchus spp.* over the application area. The vegetation proposed to be cleared includes Carnaby's cockatoo foraging species Marri (*Corymbia calophylla*), Prickly Bark (*Eucalyptus todtiana*) and *Banksia menziesii*within the foraging distance to the known breeding site (Kirkby, 2022). The survey noted the following with regards to foraging habitat (Kirkby, 2022):

- evidence of feeding on seeds from *Banksia menziesii* was identified at two locations. One of these was outside the proposed clearing area. *Banksia menziesii* is represented at the survey area by only a few individuals.
- no evidence of feeding on Marri or Prickly Bark was located. Marri is often taken by Carnaby's Cockatoos at some locations and the reason for the lack of foraging evidence is unknown. It may be possible that the nearby Moore River National Park provides richer foraging opportunities on banksia species.

Nearby foraging habitat, in better condition, occurs within conservation estate including Moore River National Park to the east and the Gnangara-More River State to the west of application area. Based on vegetation mapping, there is 30,737 hectares of mapped foraging habitat in the local area. The application area represents approximately 0.02 per cent of the current foraging habitat in the local area. Based on the current mapping of potential Black Cockatoo foraging habitat within the SCP, there is approximately 20,119.55 hectares available within the local area, a majority of which is in conservation areas (Figure 3). The application area is not mapped as potential Carnaby's cockatoo feeding habitat.

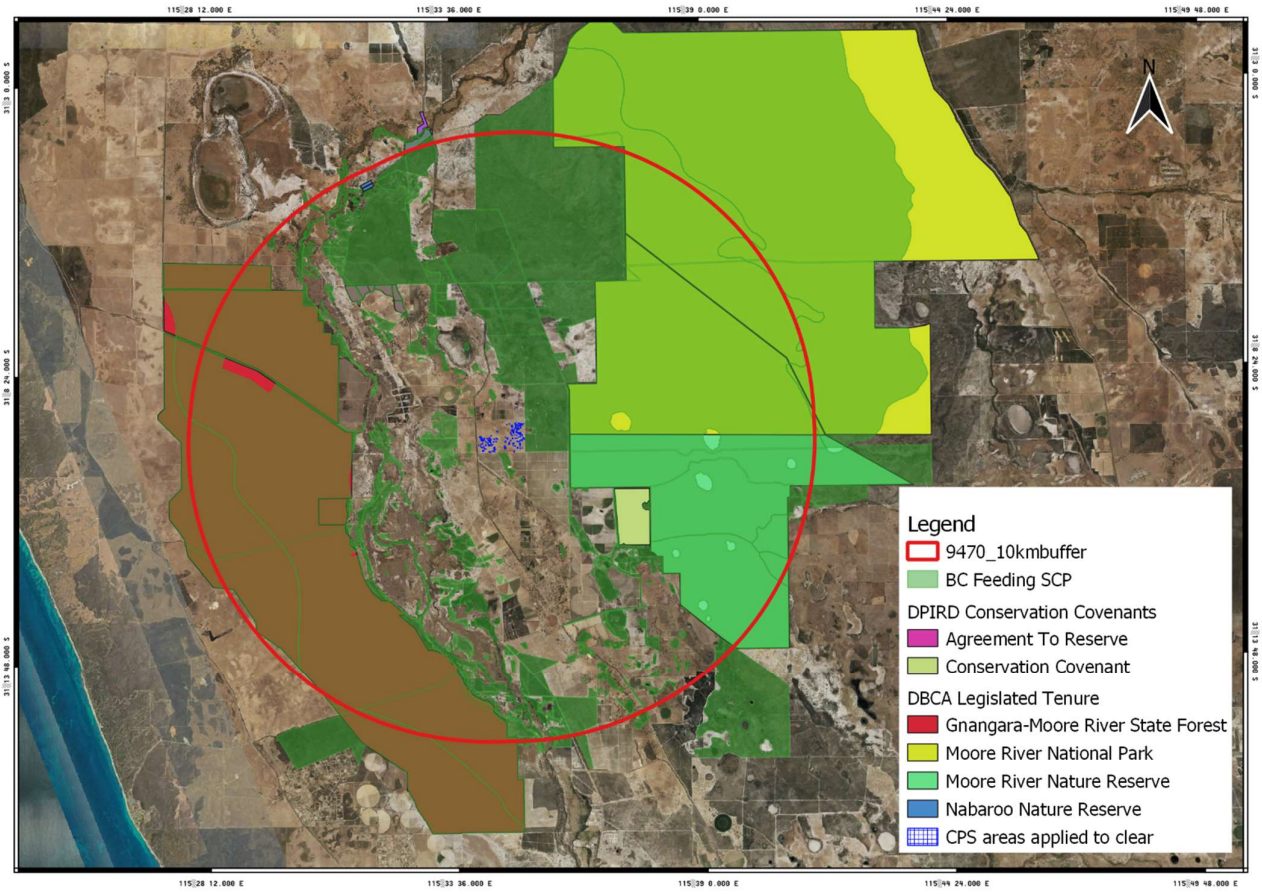

Figure 3: Black Cockatoo foraging habitat and conservation areas within the surroundings of the application area.

Foraging habitat for Black Cockatoos within seven kilometres of a breeding site is important to adequately support breeding pairs (EPA, 2019). There is a record of a natural confirmed breeding point approximately 900 metres west of the application area. No breeding hollows suitable to be used by Black Cockatoos were located at the survey area (Kirkby, 2022). The survey noted that there appeared to be a lack of hollows at any size. The trees at the survey area appeared in good condition and not very old or to have lost many branches and aren't senescing as would be the case with trees above 500mm DBH in a forest environment (Kirkby, 2022). It may be the case that many of these trees are regrowth from the original clearing activities and not yet old enough to provide hollows. Although they are above 500mm DBH, they are growing with very little competition and attain this diameter at a much younger age than forest trees (Kirkby, 2022).

Individual night roosting sites need suitable foraging habitat and water within six kilometres (EPA, 2019). Overlapping foraging ranges within 12 kilometres also support roosting sites and maintain habitat connectivity and movement across the landscape (EPA, 2019). There are two Black Cockatoo roosting sites within the local area, located approximately 5.7 and 11.5 kilometres north from the application area. Whilst there are two confirmed Black Cockatoo roosting sites within the local area, taking into consideration the abundance of native vegetation in the local area that is likely to comprise better quality foraging habitat for Carnaby's cockatoo, the foraging habitat is not considered significant to support night roosts. Marri is the only species at the survey area likely to be utilised by Carnaby's Cockatoo as a roosting site and all stands of Marri were inspected and no roosting sites were located (Kirkby, 2022).

Noting the above, the vegetation within the application area is not likely to represent a significant proportion of foraging habitat for Carnaby's cockatoos. However, due to the loss of approximately five hectares of foraging resource from the proposed clearing within a mapped Carnaby's cockatoo distribution area, an impact to Carnaby's cockatoo foraging habitat remains. The applicant is committed to replacing foraging vegetation removed by planting Carnaby's cockatoo foraging species at a rate greater than three trees planted for each tree cleared to mitigate the potential impact. The location of the revegetation area is favourable to strengthen ecological linkages to adjacent

high quality foraging habitat and is also located close to a water source, both factors which could enhance the potential utilisation of the area by Black Cockatoos for the purposes of foraging.

Considering the extent of the application area and that native vegetation within adjacent properties provides similar or better-quality habitat, the proposed clearing is not likely to restrict Carnaby's cockatoo ability to migrate across the landscape.

Conclusion
For the reasons set out above, and the avoidance and mitigation measures provided by Centerwest Pty Ltd (Section 2.1), it is considered that potential impacts of the proposed clearing on Carnaby's Black Cockatoo can be mitigated by the planting of Carnaby's cockatoo foraging species within the same property to ensure the habitat is not permanently lost.

Centerwest Pty Ltd proposes to revegetate the application area with five hectares of Carnaby's cockatoo foraging habitat to counterbalance the potential impacts of clearing foraging habitat. It is also considered appropriate that hygiene measures should be implemented during clearing to help protect adjacent remnant vegetation from weed and dieback spread and the resultant degradation in habitat that can occur.

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

- The permit holder is to take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.
- The permit holder is to revegetate a minimum of 5 hectares of native vegetation, with known Carnaby's cockatoos foraging species to mitigate the impact of clearing Carnaby's cockatoos foraging habitat.

2.2.2. Environmental value: Land and water resources - Clearing Principles (g)

The application area is on the mid and upper slopes of the landscape and is located on the yellowish-brown sands of the Spearwood Phase 3 Map Unit 211Sp-3 and the brown siliceous soils of the Spearwood Phase 2 Map Unit 211Sp_2. (DPIRD, 2022).

The application area is not located within an area that is mapped as having a risk of acid sulfate soils. Soils within some extents of the application area are mapped susceptible to wind erosion and subsurface acidification (DPIRD, 2022). As the purpose of the proposed clearing is for horticultural pivots, DWER sought advice from Department of Primary Industries and Regional Development (DPIRD) in relation to the land degradation risk categories.

The land degradation assessment report contained the following conclusions:

- The risk of eutrophication causing land degradation will be low if the application area is appropriately monitored (CSLC, 2022).
- The risk of wind erosion causing land degradation will be low if the soils are wetted down when not in production (CSLC, 2022).

Conclusion
Based on the above assessment, it is considered that the impact of the proposed clearing on land degradation as identified by DPIRD can be managed by the proposed Farm Management Plan required by the Shire of Gingin. Wind erosion and soil monitoring commitments conditioned on the Development Approval issued by Shire of Gingin (Centerwest, 2022a) have not been conditioned on the clearing permit as these primarily relate to post-clearing impacts and are more appropriately regulated under other statutory processes administered by the Shire of Gingin. An alternate condition has been imposed on the permit for the purpose of mitigating erosion risks associated with the clearing.

Conditions

Commencement of horticultural development activities within one month of clearing to further mitigate the risk of wind erosion will be required as a condition on the clearing permit.

2.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include:

- Development Approval under the *Planning and Development Act 2005* (issued by the Shire of Gingin)
- Licence to abstract ground water under the *Rights in Water and Irrigation Act 1914* (GWL47031).

Centerwest Pty Ltd has received Development Approval from the Shire of Gingin for the proposed Agricultural Intensive use and associated structures (pivots) on 17 February 2022.

In addition, as part of the Shire of Gingin Development Approval, a comprehensive Farm Management Plan needs to be submitted to the Shire, which includes mitigation measure for reducing wind erosion and minimising eutrophication.

The application area is located within the Gingin Groundwater Area proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act) (DWER-034) and within Moore River and certain Tributaries Surface Water Area or Irrigation Districts proclaimed under the RIWI Act (DWER-037). The applicant holds a valid groundwater licence (GWL47031) which expires on 7 February 2032.

The application does not fall within a public drinking water source, or a clearing control catchment protected under the *Country Areas Water Supply Act 1947* (CAWSA).

No Aboriginal sites of significance have been mapped within the application area. The closest known Aboriginal site is the Gingin Brook Waggyl Site (20008). It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
Black Cockatoo Habitat Survey prepared by Tony Kirkby on behalf of Centerwest Pty Ltd (Kirkby, T., 2022).	The purpose of the survey was to assess breeding, feeding and roosting habitat suitable for use by Black Cockatoos *Calyptorhynchus spp*. at Lot 3314 Cowalla Rd (Kirkby, T., 2022).
Centerwest Pty Ltd utilised the services of an irrigation contracting company to design the pivot placements with a brief to minimise the disturbance of native vegetation. Given the topography of the block and the fact that pivots will operate on a maximum gradient of 15 degrees coupled with the limestone ridges that run through the property making any other areas unsuitable, the current placement is considered to be preferable.	Consideration as to evidence of measures taken to minimise vegetation clearing.
Location of area for rehabilitation of vegetation for Black Cockatoo foraging habitat.	Consideration of mitigation measure to reduce the potential impact of the proposed clearing.
Centerwest Pty Ltd provided DWER with a copy of the Farm Management Plan required by the Shire of Gingin.	To demonstrate how the Farm Management Plan addresses the matters raised by DPIRD with regards to wind erosion and eutrophication.
Centerwest Pty Ltd provided DWER with a copy of the Shire of Gingin development approval.	To demonstrate implementation of appropriate mitigation measures.

Appendix B. Details of public submissions

Summary of comments	Consideration of comment
Not convinced sufficient avoidance and mitigation measures have been implemented, for example alternative location for pivots and reduce size of radius could be considered.	Refer to Section 2 and Appendix A of the Decision report for details
Habitat quality or age of the trees to be removed is not known.	A Black Cockatoo Foraging Habitat Survey (Appendix F) was undertaken. Refer to Section 2 for discussion on Black Cockatoo foraging habitat.
No rehabilitation of areas left is proposed.	Centerwest has committed to the rehabilitation of 5 hectares of Black Cockatoo foraging habitat which has been conditioned on the permit

Appendix C. Site characteristics

C.1. Site characteristics

Characteristic	Details
Local context	The application area occurs approximately 22 kilometres north-east of Guilderton within the Swan Coastal Plain Interim Biogeographic Regionalisation for Australia (IBRA) bioregion, Perth subregion. The area proposed to be cleared is a 5-hectare sum total of isolated paddock trees in the intensive land use zone of Western Australia. It is surrounded areas that have been by primarily cleared of natural vegetation for agricultural land uses in a south to north strip, with the exception of the road reserve adjacent to the west side of the property which is a road with roadside conservation status and the property to the east that has retained natural vegetation and borders the Moore River Nature Reserve. The Moore River floodplain is approximately 2 kilometres to the west of the application area. The proposed clearing area is isolated remnant vegetation (trees) in a highly cleared landscape. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 68.24 per cent of the original native vegetation cover.
Ecological linkage	No ecological linkages are mapped or known to exist within the application area. Cowalla Road on the western edge of the property is mapped as a Roadside Conservation area. From aerial imagery, the vegetation on adjacent property to the east and vegetation along the roadside conservation strip comprises dense vegetation which would be preferable as an ecological corridor compared to the completely degraded (Keighery, 1994) vegetation within the application area.
Conservation areas	The closest conservation area to the application area is Moore River National Park located approximately 1.5 kilometres east of the application area with dense vegetation in between. Gnangara-Moore River State Forest is 4 kilometres to the west, separated from the application area by a patchwork of remnant vegetation, cleared areas, road and the Moore River watercourse. The proposed application area does not fall within a conservation covenant, regional park or DBCA areas of interest.
Vegetation description	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of cleared pastureland with large, scattered trees. Representative photos are available in Appendix F. The vegetation consists of scattered individuals of *Eucalyptus todtiana, Corymbia calophylla, Nuytsia floribunda* and *Banksia menziesii* over pasture grassland. This is consistent with the mapped vegetation type(s): • Karrakatta Complex-North, which is described as predominantly low open forest and low woodland of Banksia species *E- Eucalyptus todtiana* (Pricklybark), less consistently open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus todtiana* (Pricklybark) - Banksia species. • Bassendean Complex-North, which is described as vegetation ranges from a low open forest and low open woodland of Banksia species *Eucalyptus todtiana* (Pricklybark) to low woodland of *Melaleuca* species and sedgelands which occupy the moister sites. The mapped vegetation types retain approximately 45.12% and 71.67% per cent of the original extent respectively (Government of Western Australia, 2019)
Vegetation condition	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in completely degraded (Keighery, 1994) condition, described as:

Characteristic	Details
	• "The structure of the vegetation is no longer intact, and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs" (Keighery, 1994). The full Keighery (1994) condition rating scale is provided in Appendix E. Representative photos are available in Appendix F.
Climate and landform	The climate of the area is warm and temperate (Mediterranean). The winter months have higher rainfall than summer months with an annual rainfall of around 700 millimetres. The application area generally occupies the upper slope position in the landscape with an elevation 50-100m AHD.
Soil description	The application area is on the mid and upper slopes of the landscape and is located on the yellowish-brown sands of the Spearwood Phase 3 Map Unit 211Sp-3 and the brown siliceous soils of the Spearwood Phase 2 Map Unit 211Sp_2.
Land degradation risk	The Department of Primary Industries and Regional Development (DPIRD) identified wind erosion and eutrophication (nutrient export) as limitations to the clearing and proposed landuse. The land degradation table C.4. below summarises the soil degradation risk within the application area.
Waterbodies	There are no watercourses or wetlands mapped within the application area. The closest wetlands and watercourses to the application area include – • a resource enhancement management category basin (artificial lake) located adjacent to a single tree outcrop in the far north of the clearing area • Moore River, located around 1.5 km away
Hydrogeography	The application area is mapped within the Moore River and certain tributaries surface water area and within the Gingin groundwater area under the *Rights in Water and Irrigation Act 1914* (RIWI Act). Groundwater salinity level (Total Dissolved Solids) is mapped as 500-1000 milligrams per litre (fresh water).
Flora	Nine conservation significant flora taxa are known to occur within the local area. The closest record identified is (*Dodonaea hackettiana*), located approximately 1 kilometre from the application area and is categorised as a Priority four species. *Drakaea elastica* is the closest known record of threatened flora to the application area, located approximately 8.5 kilometres southeast. Based on the habitat features identified within the application area, the risk of threatened or priority flora occurring within the application area is low.
Ecological communities	Three conservation significant ecological communities occur within the local area: • Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region listed as Threatened under the EPBC Act and Priority 3 by DBCA • Dense shrublands on clay flats (floristic community type 9 as originally described in Gibson et al. (1994)) listed as Critically Endangered under the EPBC Act and Vulnerable under the BC Act; and • Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain listed as Critically Endangered under the EPBC Act and Priority 3 by DBCA. The application area does not comprise species which would represent the above communities.
Fauna	According to available datasets, there are records of eight conservation listed fauna species within the local area. Noting the habitat requirements, distribution of the recorded species, the mapped vegetation type and the condition of the vegetation within

Characteristic	Details
	the application area, the application area is assessed as comprising suitable habitat for Carnaby's cockatoo.

C.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62%	222,916.97	38.45%
Vegetation complex*					
Bassendean Complex-North	79,057.35	56,659.67	71.67%	30,558.65	38.65%
Karrakatta Complex-North	44,272.94	19,976.32	45.12%	12,500.70	28.24%
Local area					
10km radius	36,653.97	25,011.18	68.24%	-	-

*Government of Western Australia (2019a)

C.3. Fauna analysis table

Species name	Conservation status	Suitable habitat features?	Distance of closest record to application area (m)	Are surveys adequate to identify?
Carnaby's black cockatoo (*Calyptorhynchus latirostris*)	Endangered	Yes	1,613	Yes

CR: critically endangered, EN: endangered, VU: vulnerable, EX: Presumed extinct species, IA (M) Migratory birds protected under an international agreement, CD: Conservation dependent fauna, OS: Other specially protected fauna

C.4. Land degradation risk

Land quality risk level against aspects of land degradation.

RISK	LIKELIHOOD	DESCRIPTION	PROPORTION OF APP AREA	RISK LEVEL
Water Erosion	L1	<3% of map unit has a high to extreme risk	100	Low
Wind Erosion	H2	>70% of map unit has a high to extreme risk	100	High
Salinity	L1	<3% of map unit has a moderate to high salinity risk or is presently saline	100	Low
Flood	L1	<3% of map unit has a moderate to high salinity risk or is presently saline	100	Low
Waterlogging	L1	<3% of map unit has a high to extreme risk	100	Low
Subsurface Acidification	H1	50-70% of map unit has a high subsurface acidification risk or is presently acid	90	High
Subsurface Acidification	M2	30-50% of map unit has a high subsurface acidification risk or is presently acid	10	Medium
Phosphorus Export	L2	3-10% of map unit has a high to extreme risk	10	Low
Phosphorus Export	L1	<3% of map unit has a high to extreme risk	90	Low

Appendix D. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The vegetation proposed to be cleared consists of *Eucalyptus todtiana, Corymbia calophylla, Nuytsia floribunda and Banksia menziesii* scattered across the application area over a completely degraded (Keighery, 1994) understory devoid of vegetation. The proposed clearing area is unlikely to contain locally or regionally significant flora, fauna, habitats or assemblages of plants.	Not likely to be at variance	No
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: This area provides some foraging habitat for Carnaby's cockatoo, however, the Black Cockatoo Foraging Habitat Survey found limited foraging evidence and suggest that Moore River National Park provides richer foraging opportunities on banksia species (Appendix F). Taking into consideration the vegetation in the application area and the abundance of native vegetation in the local area in conservation estate which is likely to provide higher quality habitat, the application area is unlikely to provide significant habitat for Carnaby's cockatoo.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: Based on a review of photographs of the application area and considering the vegetation identified by DPIRD (2022), the application area is unlikely to contain flora species listed as threatened under the BC Act.	Not likely to be at variance	No
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: The proposed clearing area does not contain species composition indicative of a TEC listed under the BC Act or EPBC Act.	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extents of native vegetation in the local area and mapped vegetation complex are consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.	Not likely to be at variance	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: There are no wetlands or watercourses mapped within the application area. The proposed clearing is not likely to impact on the closest water feature, a resource enhancement artificial lake adjacent to the application area.	Not likely to be at variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The application area is located within two soil map units the yellowish-brown sands of the Spearwood Phase 3 Map Unit 211Sp-3 and the brown siliceous soils of the Spearwood Phase 2 Map Unit 211Sp_2. (DPIRD, 2019). The greatest risk of land degradation from the proposed clearing is identified as phosphorus export (eutrophication) and wind erosion based on the advice received by Commissioner of Soil and Land Conservation (CSLC). The risk of wind erosion can be mitigated if the soils are wetted down when not in production or cropping with alternative crops after harvesting. The risk of eutrophication can be mitigated by implementing monitoring of water and fertilizer inputs. CSLC considered it is unlikely that the proposed clearing will have an appreciable impact on land degradation.	May be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: There are no wetlands or watercourses mapped within the application area. The proposed clearing is not likely to impact on the closest water feature which is an artificial lake. The application area falls within the proclaimed Gingin groundwater area and the applicant holds a valid groundwater licence for the purpose of extracting water. Application area is within the Moore River and certain tributaries proclaimed area under the RIWI Act, surface water areas. Groundwater salinity is mapped at 500-1000 total dissolved salts (TDS) milligrams per litre (mg/L), which is considered fresh. The proposal is not likely to cause deterioration in the ground water.	Not likely to be at variance	No
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."*	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Assessment: The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.		

Appendix E. Vegetation condition rating scale

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

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

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

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix F. Black Cockatoo Habitat survey information excerpts.

The survey was undertaken by Mr Tony Kirkby using the guidelines provided by the Department of Water and Environmental Regulation (DWER) on 25 January 2022. The findings included:

Breeding hollows.

No breeding hollows suitable to be used by Black Cockatoos were located at the survey area. There also appeared to be a lack of hollows at any size. The trees at the survey area appear in good condition and don't look very old or to have lost many branches and aren't senescing as would be the case with trees above 500mm DBH in a forest environment. It may be the case that many of these trees are regrowth from the original clearing activities and not yet old enough to provide hollows. Although they are above 500mm DBH they are growing with very little competition and attain this diameter at a much younger age than forest trees.

Foraging.

Evidence of feeding on seeds from *Banksia menziesii* was noted at two locations. One of these was outside the projected clearing area. It is represented at the survey area by only a few individuals.

No evidence of feeding on Marri or Prickly Bark was located. Marri is often taken by Carnaby's Cockatoos at some locations and the reason for the lack of foraging evidence is unknown. It may be possible that the nearby Moore River National Park provides richer foraging opportunities on banksia species.

Roosting.

All stands of Marri at the survey area were inspected and no roosting sites were located.

Sightings.

A flock of eight Carnaby's Cockatoo were observed heading in a south easterly direction over the survey area at 08:30 hrs.

Appendix G. Photographs of the application area

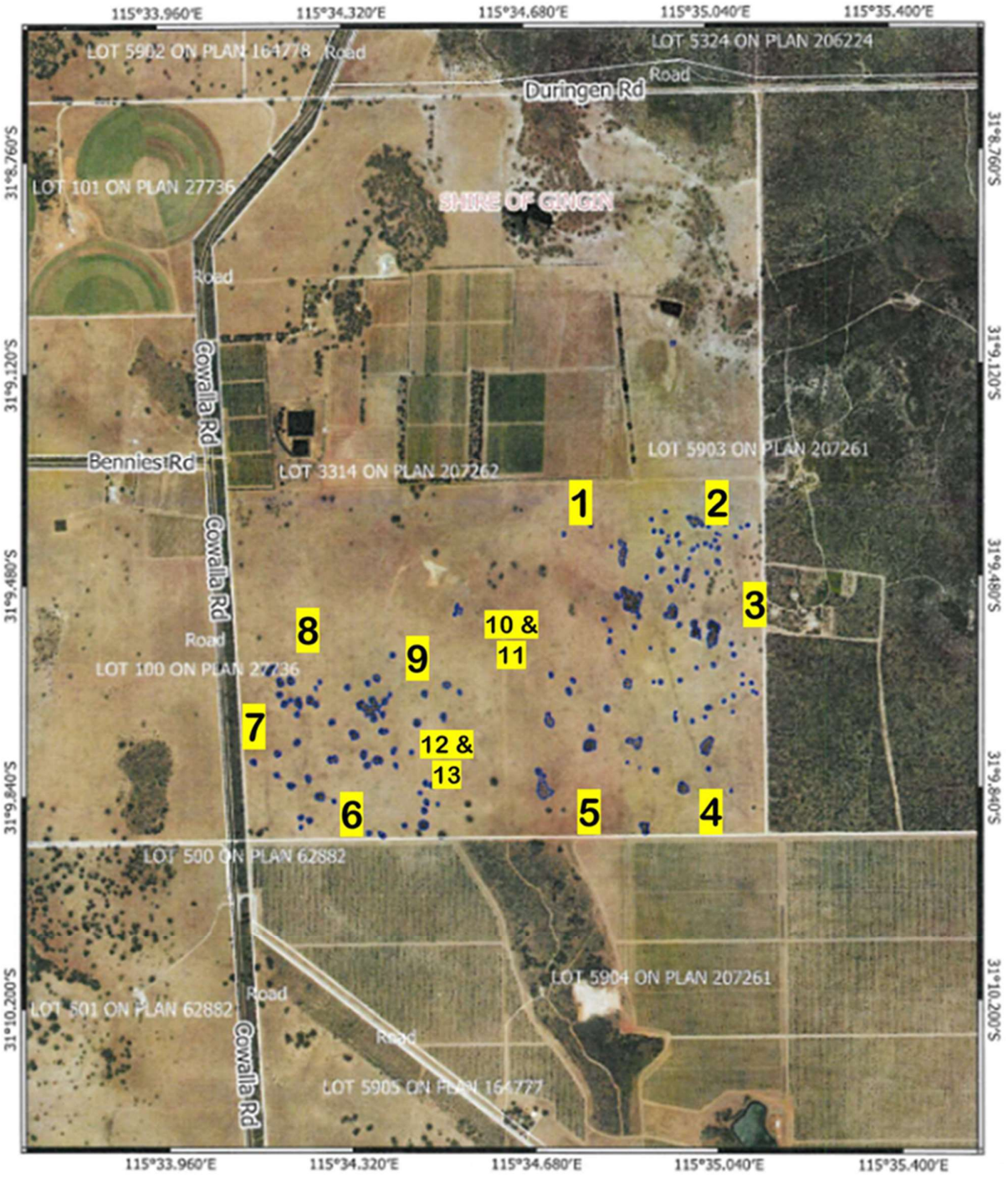

Plate 1: Farm Map including Photograph Location Points

Location 1: Co-ordinates -31.155793, 115.579526, South facing

Location 2: Co-ordinates -31.155674, 115.582788, South facing

Location 3: Co-ordinates -31.158735, 115.585292, West facing

Location 4: Co-ordinates -31.164542, 115.583938 , North facing

Location 5: Co-ordinates -31.164923, 115.579818, North facing

Location 6: Co-ordinates -31.165007, 115.572263, North facing

Location 7: Co-ordinates -31.162097, 115.568883, East facing

Location 8: Co-ordinates -31.159545, 115.570921, South facing

Location 9: Co-ordinates , South facing

Location 10: Co-ordinates -31.160683, 115.574022, West facing

Location 11: Co-ordinates -31.160683, 115.574022, East facing

Location 12: Co-ordinates -31.163054, 115.574660, West facing

Location 13: Co-ordinates -31.163054, 115.574660, East facing

Appendix H. Sources of information

H.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

H.2. References

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Centerwest (2022a) *Supporting information for clearing permit application CPS 9470/1,* received 18 February 2022 (DWER Ref: DWERDT587088).

Centerwest (2022b) *Supporting information for clearing permit application CPS 9470/1,* received 24 February 2022 (DWER Ref: DWERDT587148 and DWERDT585925).

Centerwest (2022c) Supporting information for clearing permit application CPS 9470/1, received 3 March 2022 (DWER Ref: DWERDT587155)

Centerwest (2022d) Supporting information for clearing permit application CPS 9470/1, received 30 March 2022 (DWER Ref: DWERDT587172 and DWERDT587165)

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