Government of Western Australia
Department of Mines, Industry Regulation and Safety

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	8207/3
Permit type:	Purpose Permit
Applicant name:	AWE Perth Pty Ltd
Application received:	12 October 2022
Application area:	40 hectares
Purpose of clearing:	Maintenance of Petroleum Production Infrastructure, Decommissioning, Rehabilitation and Associated Activities
Method of clearing:	Mechanical Removal
Tenure:	Production Licences L 4, L 5 Pipeline Licence PL 6
Location (LGA area/s):	Shire of Carnamah
Colloquial name:	Woodada Project

1.2. Description of clearing activities

AWE Perth proposes to clear up to 40 hectares of native vegetation within a boundary of approximately 3,798.63 hectares, for the purpose of maintenance of petroleum production infrastructure, rehabilitation and associated activities. The project is located approximately nine kilometres west of Eneabba, within the Shire of Carnamah.

The amendment application is to allow for maintenance of petroleum production infrastructure, and also for the decommissioning and rehabilitation of infrastructure, pipelines and roads.

Clearing permit CPS 8207/2 was granted by the Department of Mines, Industry Regulation and Safety on 5 August 2022 and was valid from 29 December 2018 to 30 September 2033, amending the permit to increase the amount of approved clearing by 5 hectares. The permit (8207/2) authorised the clearing of up to 20 hectares of native vegetation within a boundary of approximately 3,769.035 hectares, for the purpose of maintenance of petroleum production infrastructure, rehabilitation and associated activities.

On 12 October 2022, the Permit Holder applied to amend CPS 8207/3 to increase the amount approved clearing by 20 hectares, increase the permit boundary and add tenure to the permit. This is to allow for the decommissioning of the pipeline and rehabilitation activities.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	7 February 2023
Decision area:	40 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 28 October 2022. DMIRS advertised the application for a public comment for a period of 21 days, and one submission was received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix C), relevant datasets (Appendix F), supporting information provided by the applicant (Appendix A) including the results of targeted flora surveys, the clearing principles set out in Schedule 5 of the EP Act (Appendix E), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- impacts to conservation significant flora;
- the loss of suitable habitat for malleefowl (*Leipoa ocellata*); and

- potential land degradation in the form of 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 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;
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity;
- engage an environmental specialist to identify active Malleefowl mounds if clearing is occurring between 1 September and 31 January;
- engage a botanist to conduct a targeted survey of the permit area for the presence of rare flora; and
- retain vegetative material and topsoil, revegetation and rehabilitation.

The assessment has not changed since the assessment for CPS 8207/2, except in the case of Principle (b). The Delegated Officer determined that the proposed additional clearing of 20 hectares for the purposes of decommissioning a pipeline and rehabilitation is not likely to lead to an unacceptable risk to environmental values.

1.5. Site map

A site map of proposed clearing is provided in Figure 1 below.

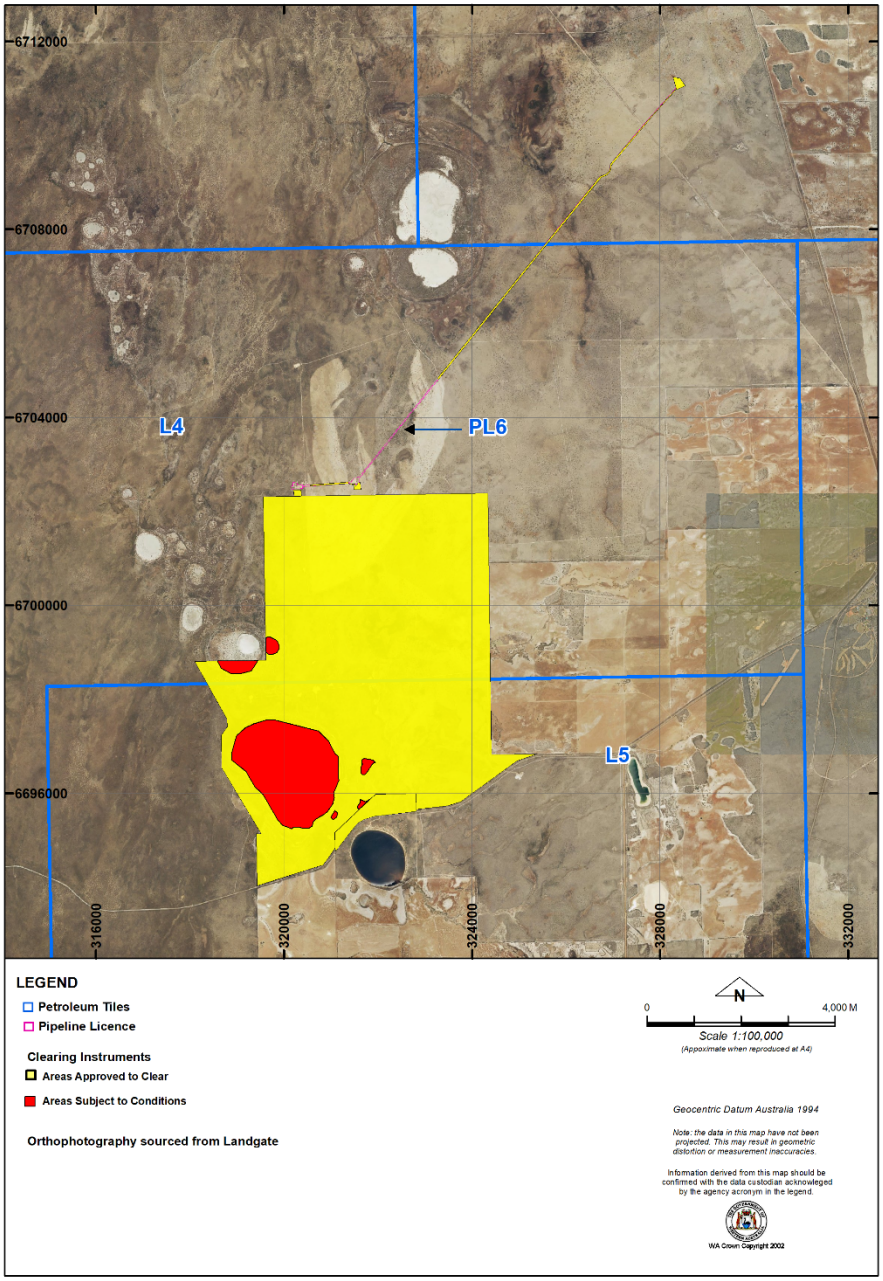

Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

2. Legislative context

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

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

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

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)
- *The Petroleum and Geothermal Energy Resources Act 1967* (WA)
- *The Petroleum Pipelines Act 1969* (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 – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

Evidence was submitted by the applicant, demonstrating avoidance and mitigation measures such as:

- using compact equipment to minimise disturbance;
- always staying within the previously disturbed and previously cleared areas when decommissioning and rehabilitation of the pipelines, flowlines and access tracks;
- locations of black cockatoo trees will be made known to earthworks contractor and exclusion zones of 5 metres on either side of the tree will be established and included as a control in the Permit to Work;
- a spotter will be made available during clearing activities;
- appropriate dieback hygiene management practices will continue;
- targeted surveys will be carried out for conservation significant flora prior to clearing; and
- appropriate buffers will be established around identified threatened flora (Mitsui E&P Australia, 2022b; 2023a).

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. 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.
A review of current environmental information reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 8207/2. The only change in the assessment against the clearing principles is principle (b), which has changed from 'Not likely to be at variance' to 'May be at variance', as discussed below.

From 29 December 2018 to 30 June 2022, 0.025 hectares of native vegetation has been cleared pursuant to clearing permit CPS 8207/2 (Mitsui E&P Australia, 2022a). The proposed amendment involves increasing the amount approved to be cleared by 20 hectares, increase the permit boundary and add tenure to the permit. The amended area is to address the change in decommissioning requirements of the buried infrastructure (DBCA, 2022; Mitsui E&P Australia, 2022b).

It has been estimated that the clearing will consist of clearing 40 hectares of native vegetation, approximately 20 percent of the clearing is estimated to be remnant native vegetation while the remaining 80 percent is estimated to be regrowth of vegetation from previous disturbances (i.e. installation and maintenance of petroleum infrastructure).

The amendment application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and the proposed clearing is at variance to Principles (c) and (f), may be at variance to Principles (b) and (g), is not likely to be at variance to Principles (a), (d), (h) and (i) and is not at variance to Principle (e).

3.2.1. Biological values (fauna) - Clearing Principle (b)

Assessment

No new fauna biological information has been provided in support of the amendment application. A review of current environmental information (Appendix C) reveals that the assessment against the clearing principles has not changed from the Clearing Permit Decision Report CPS 8207/2 with the exception of principal (b).

The assessing officer has conducted a search of available databases (GIS Database) to review the current environmental values and potential impacts to fauna and fauna habitat. The search has identified 11 conservation significant fauna species which have been previously recorded within the application area and an additional six conservation significant fauna species that have been recorded within 20 kilometres of the application area and could potentially occur in the area (GIS Database).

Of these, a total of seven migratory birds species have been previously recorded within the application area and a further three migratory bird species have been previously recorded within 20 kilometres (GIS Database). The Lake Logue-Indoon system is a major feeding stop-over, area for dispersal and drought refuge for waterbirds (DEC, 2008). The vegetation to be cleared is to maintain cleared areas around established petroleum assets (well sites, flowlines, access tracks and plant) and rehabilitation works, fringing on the cleared parts of the nature reserve. For the reasons discussed above and given the Lake Logue areas will be conditioned where clearing is not prohibited, it is unlikely that the clearing will lead to a significant impact on fauna habitats.

The curlew sandpiper, *Calidris ferruginea* (Critically Endangered), is a small, slim sandpiper and occurs around the coasts of Australia and is also quite widespread inland, though in smaller numbers (DCCEW, 2023). Inland, they inhabit around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand (DCCEW, 2023). This species forages on mud flats and nearby shallow water and generally roost on bare dry shingle, shell or sand beaches, sandspits and islets in or around coastal or near-coastal lagoons and other wetlands, occasionally roosting in dunes during very high tides and sometimes in saltmarsh (DCCEW, 2023). The species has been previously recorded within the application area and therefore the application area may be utilised by this species, however as part of a larger range than be reliant specifically on the habitat within the application area.

The blue-billed duck, *Oxyura australis* (Priority 4), is a small, compact duck with a large round head and a short neck (DSE, 2003). There are two populations of the blue-billed duck, isolated to the south-east and south-west of Australia (DSE, 2003). The species favours permanently deep water bodies and fresh well-vegetated wetlands (DSE, 2003). This species has been previously recorded within the application area therefore may potentially visit the area, however given clearing is not permitted within the Logue Lake areas and the activity is focused on areas which has previously been cleared around the petroleum infrastructure, the clearing is not likely to lead to a significant impact on this species habitat.

Malleefowl, *Leipoa ocellata* (Vulnerable), are found in semi-arid to arid shrublands and low woodlands, especially those dominated by mallee and/or acacias (DCCEW, 2023). This species requires a sandy substrate with an abundance of leaf litter for breeding (DCCEW, 2023). Malleefowl are known to occur in the region and may utilise the area for foraging, but the application area is not likely to represent significant habitat for this species as similar habitat can be found in the adjacent areas. However, this species known to occur within at least ten kilometres from the application area and therefore measures should be taken to identify the presence of any active Malleefowl mounds.

The hooded plover, *Thinornis rubricollis* (Priority 4), is a small Australian beach nesting bird that occurs on the south-west Western Australian coast from Cape Naturaliste to Eyre, and on inland lakes as far north as lakes Cowan, Moore and Yalgorup (DCCEW, 2023). This species inhabits ocean beached and the edges of near-coastal and inland salt-lakes located hundreds of kilometres from the coast (DCCEW, 2023). The species has been previously recorded within the application area and therefore may potentially visit the application area, however the habitat present is not deemed significant to this species as similar habitat can be found in adjacent areas.

The western spiny-tailed skink, *Egernia stokesii badia* (Vulnerable), is known to occur in a broad semi-arid area in the south-west Western Australia, between Shark Bay and Minnivale and east to Cue (DCCEW, 2023). Most records of this species are in York Gum (*Eucalyptus loxophleba*) woodland with some records in Gimlet (*Eucalyptus salubris*) and Salmon Gums (*Eucalyptus salmonophloia*) woodland (DCCEW, 2023). The species is known to refuge in hollow logs in woodland habitat (DCCEW, 2023). Given the closest record of this species is approximately <10 kilometres from the application area, and the habitat present within the application area is not known to be significant to the species, the proposed clearing is unlikely to have a significant impact on the species. Potential impacts to fauna may be managed with a fauna condition (slow directional clearing and a fauna spotter) to allow for individuals to relocate to the adjacent vegetation.

The shield-backed trapdoor spider, *Idiosoma kwongan* (Priority 1), is a poorly knowns species with a restricted distribution in the southern Geraldton Sandplains IBRA region of south-western Western Australia, from Eneabba south to Green Head and Lesueur National Park (Western Australian Museum, 2022). This species requires leaf litter and twigs to provide materials for the burrows (Western Australian Museum, 2022). The spider has been recorded at least three times within 10 kilometres from the application area (GIS Database). As similar habitat is available in adjacent area, the application area is not deemed significant to the species and clearing of native vegetation for the removal and rehabilitation of petroleum infrastructure is not likely to lead to a significant impact.

The application area is located within the modelled distribution of Carnaby's cockatoo (*Zanda latirostris*) (Endangered) (DCCEEW, 2023). Surveys have been undertaken in 2022 and 2023, targeting conservation significant flora and black cockatoo values in the Woodada Gas Field (WGF) (Mitsui E&P Australia, 2022c; 2023b). No foraging evidence was recorded during the targeted surveys, however, the primary vegetation noted was *Banksia prionotes* woodland and proteaceous and myrtaceous heath which both had multiple Banksia present, with Banksia seeds providing a primary food source for the Carnaby's black cockatoo (Mitsui E&P Australia, 2022c; 2023b). No evidence of black cockatoo roosting was recorded during the targeted surveys and no trees meeting the diameter-breast-height (DBH) criteria for the species breeding habitat trees were recorded within the application area (Mitsui E&P Australia, 2022c; 2023b). The nearest roost site is located approximately 10 kilometres

from the application area in the Eneabba townsite (Mitsui E&P Australia, 2022c; 2023b). Roosting within the application area is considered unlikely as the dominant tree species, *Eucalyptus todtiana,* would not become suitably large (Mitsui E&P Australia, 2022b).

The clearing of 40 hectares of foraging habitat for the Carnaby's cockatoo within a moderately cleared landscape is likely to be regionally significant (DBCA, 2023). Given the proposed clearing is linear in nature (following existing infrastructure e.g. buried pipelines), and the rehabilitation condition on the permit continues, the impact may be less significant in some areas (DBCA, 2023). In addition, the recent fire that has gone through the area has also resulted in the regeneration of dominant food resources plants (e.g. *Banksia prionotes*) which may result in increased food availability over time (DBCA, 2023; GIS Database). The cumulative impact may be considered regionally significant, however, the level of consequence is likely considered to be moderate due to the proximity of the application area to extensive areas of similar vegetation, the linear disturbance footprint and previous developments to the site, and the areas potential capacity for recruitment (DBCA, 2023). Clearing of Carnaby's cockatoo foraging habitat should be minimised as much as practicable.

Conclusion
Based on the above assessment, the proposed clearing will result in a disturbance to available fauna habitat.

For the reasons set out above, it is considered that the impacts of the proposed clearing on fauna habitats can be managed by the implementation of management conditions, which are summarised below.

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

- Fauna Management – Malleefowl: inspection for active Malleefowl mounds and placement of appropriate buffers;
- Fauna Management: slow directional clearing and a fauna spotter to allow fauna to move into adjacent vegetation ahead of the clearing activity which will minimise impact to individuals; and

3.2.2. Biological values (flora) - Clearing Principle (c)

Assessment

A targeted flora survey was undertaken by Biota Environmental Sciences in 2022 and 2023 and eight conservation significant flora species were identified within the application area (Mitsui E&P Australia, 2022c; 2023b). A further 11 conservation significant flora species has been previously recorded within the application area or could potentially occur (GIS Database). The following 19 conservation significant flora have been previously recorded within the application area:

- *Eremophila glabra* subsp*. chlorella (*Gand.) Chinnock
- *Banksia elegans*
- *Stawellia dimorphantha*
- *Calytrix eneabbensis*
- *Dampiera tephrea*
- *Grevillea biformis* subsp*. Cymbiformis*
- *Hemiandra* sp. Eneabba (H. Demarz 3687)
- *Verticordia aurea*
- *Acacia telmica*
- *Acacia vittata*
- *Comesperma rhadinocarpum*
- *Desmocladus elongatus*
- *Eremophila subangustifolia*
- *Fabronia hampeana*
- *Hopkinsia anoectocolea*
- *Korthalsella arthroclada*
- *Patersonia argyrea*
- *Verticordia aurea*
- *Verticordia densiflora* var. *roseostella*
- *Drakaea concolor* (Mitsui E&P Australia, 2022c; 2023b; GIS Database)

Eremophila glabra subsp*. chlorella (*Gand.) Chinnock, Threatened, is a prostrate and spreading or crawling shrub, 0.2-1 metre high, it flowers from July to November and can often be found inhabiting sandy clay in winter-wet depressions (Western Australian Herbarium (1998-)). The species has been recorded within the Avon Wheatbelt, Geraldton Sandplains, Jarrah Forest and Swan Coastal Plain Interim Biogeographic Regionalisation for Australia (IBRA) (Western Australian Herbarium (1998-)). One individual has been recorded within the application area and an authorisation to take the threatened flora was applied for by the proponent (Mitsui E&P Australia, 2022c; 2023b). Mitigation measures were re-assessed following further conversations with the proponent and retaining these individuals were deemed possible (Mitsui E&P Australia, 2023a). An exclusion zone of two metres will now be established around the flagged threatened flora (Mitsui E&P Australia, 2023a).

Banksia elegans, Priority 4, is a shrub (with fire-tolerant rootstock), 1-4 metres high, it flowers between October and November and is found inhabiting sandplains and low consolidated dunes (Western Australian Herbarium (1998-)). This species has been recorded within the Avon Wheatbelt and Geraldton Sandplains IBRA regions (Western Australian Herbarium (1998-)). A total of 184 individuals was recorded during the targeted survey and 136 individuals have been recorded within the application area (Mitsui E&P Australia, 2022c; 2023b). Impacts to this species are unlikely to be deemed significant at a local, regional or species level as there are additional records within a few kilometres of the application area and is well represented in the region (DBCA, 2023).

Stawellia dimorphantha, Priority 4, is a silt-rooted perennial herb, 0.05-0.2 metres high, it flowers between June to November and can be found inhabiting white, grey and/or yellow sand (Western Australian Herbarium (1998-)). This species has been recorded within the Geraldton Sandplains IBRA region (Western Australian Herbarium (1998-)). A total 111 individuals were recorded during the targeted flora survey and 86 individuals have been recorded within the application area (Mitsui E&P Australia, 2023b). Impacts to this species are unlikely to be deemed significant at a local, regional or species level as there are additional records within a few kilometres of the application area and is well represented in the region (Western Australian Herbarium (1998-)).

Calytrix eneabbensis, Priority 4, is a shrub, 0.3-1 metre high, it flowers between July and October and can be found inhabiting white, grey or yellow sand over laterite (Western Australian Herbarium (1998-)). This species has been recorded within the Geraldton Sandplains IBRA region (Western Australian Herbarium (1998-)). A total 86 individuals have been recorded within the application area (Mitsui E&P Australia, 2022c). Impacts to this species are unlikely to be deemed significant at a local, regional or species level as there are additional records within a few kilometres of the application area and is well represented in the region (DBCA, 2023).

Dampiera tephrea, Priority 3, is an ascending to erect perennial herb or shrub, 0.3-0.6metre high, it flowers in July and can be found inhabiting Sand and gravelly loam (Western Australian Herbarium (1998-)). The species has been recorded within the Geraldton Sandplains and the Swan Coastal Plain IBRA region (Western Australian Herbarium (1998-)). A total 128 individuals were recorded during the targeted flora survey and 36 individuals were recorded within the application area (Mitsui E&P Australia, 2022c; 2023b). This species is less well represented and the nearest location is 6 kilometres and 12 kilometres from the application area (DBCA, 2023). Clearing 36 of 128 individuals will result in a 28% loss within the application area, however given the linear nature of the survey and proposed clearing, the population is likely to extend beyond the survey area and the impacts to this species is unlikely deemed significant at the regional or species level (DBCA, 2023).

Grevillea biformis subsp. *Cymbiformis*, Priority 3, is a shrub, 1.5 metres high that can be found inhabiting white sand (Western Australian Herbarium (1998-)). The species has been recorded within the Geraldton Sandplains IBRA region (Western Australian Herbarium (1998-)). A total 53 individuals were recorded during the flora targeted survey, however no individuals were recorded within the application area (Mitsui E&P Australia, 2022c; 2023b). There is potential for some individuals of this species to be located within application area, however impacts to this species are unlikely to be deemed significant at a local, regional or species level as there are additional records within a few kilometres of the application area and is well represented in the region (DBCA, 2023).

Hemiandra sp. Eneabba (H. Demarz 3687), Priority 3, is a straggly, erect shrub, 0.5-0.9 metres high, it flowers in February and can be found inhabiting sand and disturbed sites (Western Australian Herbarium (1998-)). The species has been recorded within the Geraldton Sandplains IBRA regions (Western Australian Herbarium (1998-)). A total 13 individuals were recorded during the targeted flora survey and 10 individuals were recorded within the application area (Mitsui E&P Australia, 2022c). Impacts to this species are unlikely to be deemed significant at a local, regional or species level as there are additional records within a few kilometres of the application area and is well represented in the region (DBCA, 2023).

Verticordia aurea, Priority 4, is a shrub, 0.6-1.5 metres high, it flowers between September to December and can be found inhabiting deep sand and sandplains (Western Australian Herbarium (1998-)). The species has been recorded within the Geraldton Sandplains IBRA region (Western Australian Herbarium (1998-)). A total 11 individual has been recorded during the targeted flora survey and seven individuals were recorded within the application area (Mitsui E&P Australia, 2022c; 2023b). Impacts to this species are unlikely to be deemed significant at a local, regional or species level as there are additional records within a few kilometres of the application area and is well represented in the region (DBCA, 2023).

The following conservation significant species have records within application area, however were not identified during the targeted flora survey: *Acacia telmica, Comesperma rhadinocarpum, Desmocladus elongates, Eremophila subangustifolia, Fabronia hampeana, Hopkinsia anoectocolea, Patersonia* argyrea, and Verticordia *densiflora var. roseostella* (GIS Database). Given the predominantly linear nature of most of the clearing (following existing infreastructure), if these species were found to occur, impacts are unlikely deemed significant at the regional or species level as they are represented by several locations and occur elsewhere in the region (DBCA, 2023).

Two conservation significant species, *Korthalsella arthroclada* and *Acacia vittata,* have records within the application area (GIS Database).These species are only known from a few locations but are represented well regionally with several collections from the Lake Logue area (DBCA, 2023). Due to the restricted footprint of the proposed clearing, if present, impacts may have the potential to be locally significant but are unlikely to be considered regionally significant, however, it is noted that the likelihood assessment considers these species unlikely to occur as suitable habitat is not present (DBCA, 2023).

Drakaea concolor, Threatened, is a tuberous, perennial herb, 0.25-0.3 metres high, it flowers between August and September and can be found inhabiting sandy environments (Western Australian Herbarium (1998-)). The species has been recorded within the Geraldton Sandplains IBRA region (Western Australian Herbarium (1998-)). The species has been recorded within 2.5 kilometres of the application area and the habitat present within the application area is considered suitable (DBCA, 2023; GIS Database). As the targeted survey was not undertaken during an appropriate time to identify the species and suitable habitat is considered to occur, a section 40 authorisation will be required.

Conclusion

Based on the above assessment, the proposed clearing will result in the removal of priority flora. For the reasons set out above, it is considered that the impacts of the proposed clearing on flora can be managed by the mitigation and management strategies provided by the applicant and through flora management conditions.

Conditions

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

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- retain vegetative material and topsoil, revegetation and rehabilitation; and
- prior to any clearing, a botanist shall be engaged to conduct a targeted flora survey for the presence of *Eremophila glabra* subsp. *chlorella* (Gand.) Chinnock and *Drakaea concolor*. The species will be flagged and an appropriate buffer will be erected to ensure the preservation of identified individuals.

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 28 October 2022 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. Two submissions were received in relation to this application.

There is one native title claim over the area under application (DPLH, 2023). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2023). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:
- An Environment Plan approved under the *Petroleum Pipelines Act 1969*.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
A targeted flora survey was undertaken in 2022 identifying the locations of conservation significant flora, this was submitted following the application (Mitsui E&P Australia, 2022c). IBSASUB-20230123-32429C73.	The information provided in the survey has been used in assessing the clearing permit application.
An additional targeted flora survey was undertaken in 2023 identifying the locations of conservation significant flora, this was submitted following the application (Mitsui E&P Australia, 2023b). IBSASUB-20230123-1FF2A590.	The information provided in the survey has been used in assessing the clearing permit application.

Appendix B. Details of public submissions

Summary of comments	Consideration of comment
Comments were received from a research group, the Conservation Medicine Program in the School of Veterinary Medicine at Murdoch University. 1. Concern that (i) no fauna report or Targeted Black Cockatoo Habitat Assessment has been submitted for this clearing action (or prior clearing actions under CPS 8207); (ii) the previous decision (8207-2 Decision Report) was based heavily on the initial 8207-1 Decision Report, which is now clearly outdated with respect to Carnaby's cockatoos. 2. The proposal would remove Carnaby's cockatoo foraging habitat in a known breeding area; our research shows that the area is also a post-breeding area for flocks that breed in the wider vicinity; 3. Importance of considering cumulative impacts when assessing clearing applications; and 4. The need for mitigation measures that are effective for black cockatoo conservation.	Targeted Flora Surveys were undertaken between October 2021 and February 2022 which included assessment for presence of priority flora and black cockatoo habitat. Impacts to black cockatoos are addressed in the assessment against the clearing principles.

Appendix C. Site characteristics

C.1. Site characteristics

Characteristic	Details
Local context	The application area is located approximately nine kilometres west of Eneabba, within the Shire of Carnamah (GIS Database). The area proposed to be cleared is part of an isolated patch of native vegetation in the intensive land use zone of Western Australia (GIS Database). The application area is surrounded by native vegetation to the north and west and pastoral land to the east and south (GIS Database).
Ecological linkage	According to available databases, the application area does not contain any known or mapped ecological linkages (GIS Database).
Conservation areas	The application area occurs within the Lake Logue Nature Reserve (GIS Database). The amendment area is located within an un-named Nature Reserve (R 39744) which is vested within the Conservation Commission of Western Australia (GIS Database).
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation association: • 378: Shrublands; scrub-heath with scattered *Banksia* spp, *Eucalyptus todtiana* & *Xylomelum angustifolium* on deep sandy flats in the Geraldton Sandplain Region (GIS Database); • 393: Thicket with medium open woodland, low woodland or scattered. Teatree with York gum, wandoo or casuarina Melaleuca spp. with *Eucalyptus loxophleba*, *Eucalyptus wandoo* and Allocasuarina spp; and

Characteristic	Details
	• 377: Scurb-heath. Mixed heath with scattered tall shrubs Acacia spp., Proteaceae and Myrtaceae (GIS Database). A flora and vegetation survey was conducted over the application area by Woodman Environmental Consulting (Mitsui E&P Australia, 2022c). The following vegetation associations were recorded within the application area (Mitsui E&P Australia, 2022c): **1.** Open Woodland of *Eucalyptus erythrocorys* over mixed shrubs including *Acacia spathulifolia*, *Melaleuca systena* and *Desmocladus asper* on brown sand with limestone outcropping; **2.** Heath dominated by *Banksia attenuata* and *Melaleuca leuropoma* with emergent *Banksia prionotes Banksia menziesii* and *Eucalyptus todtiana* on yellow sand; **3.** Heath of mixed myrtaceous species and sedges including *Ecdeiocolea monostachya* and *Mesomelaena pseudostygia* on grey sand; **4.** Open Woodland of *Banksia prionotes* over *Scholtzia laxiflora, Melaleuca leuropoma* and *Banksia leptophylla* on yellow sand; and **5.** Low forest of *Eucalyptus camaldulensis, Casuarina obesa* and *Melaleuca preissiana* over *Hakea preissii* over predominately introduced herbs.
Vegetation condition	The vegetation within the application area are in Excellent to Degraded (Trudgen, M.E., 1991) condition (Mitsui E&P Australia, 2022c). The full Trudgen (1991) condition rating scale is provided in Appendix C.
Climate and landform	The application area is mapped within elevations of 40-50 metres AHD. The annual average rainfall (Eneabba) is 489.6 millimetres (BoM, 2022).
Soil description	The soils of the application area are broadly mapped as the following soil types: • 221Ta_3d – Tamala South 3 subsystem, dune phase. Low hills with relict dunes and some limestone outcrop; deep and shallow yellow sand over limestone; • 221Ta_4 – Tamala South 4 subsystem. Low hills with relict dunes and some limestone outcrop; yellow shallow sand with limestone outcrops and yellow deep sand; • 2221In_1 – Indoon 1 subsystem. Lake, fresh or brackish, usually permanent; • 221In_2 – Indoon 2 subsystem. Plain associated with lake, lower lying areas seasonally inundated seasonally inundated, small lakes too small to map; • 221In_4 – Indoon 4 subsystem. Sand rises or lunettes sourced from, or associated with, unit In1. ; Deep sands, usually white or pale yellow; • 221EN_7 – Eneabba 7 subsystem. Gently undulating sandplain and low sandy rise; Pale deep sand with a yellow subsoil, yellow deep sands, minor wet soils; • 221En_2 – Eneabba 2 subsystem. Sandplain, with occasional areas of low sandy rises; Sandy and gravelly duplex soils and gravelly deep sands on the plain, minor pale deep sands on the rises; • 221En_3 – Eneabba 3 subsystem. Sandplain, with areas of low sandy rises; Deep sands on rises, grey sand duplex soils, pale deep sand and gravelly soils on flats; • 221En_5 – Eneabba 5 subsystem. Seasonally wet plain; Grey sandy duplex soils, wet soils and minor areas of deep sands; • 221En_7 – Eneabba 7 subsystem. Gently undulating sandplain and low sandy rise; Pale deep sand with a yellow subsoil, yellow deep sands, minor wet soils; and • 221En_8 – Eneabba 8 subsystem. Ironstone ridges.
Land degradation risk	The proposed area is located within three subsystems; Eneabba, Tamala South and Indoon (GIS Database). Following clearing, wind erosion is likely to occur on the crest of dunes if the bare soil is left exposed (DPIRD, 2018). The area may also be susceptible to water erosion on the non-wetting soils during peak periods of intense rainfall in areas where these is shallow sand over limestone (DPIRD, 2018)
Waterbodies	The desktop assessment and aerial imagery indicated that there are several lakes within the application area including Lake Logue, which is listed in the Directory of Important Wetlands (GIS Database).
Hydrogeography	The application area is no located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The Logue-Indoon System (listed in the Directory of Important Wetlands in Australia (DIWA)) consists of Lake Logue, Lake Indoon, smaller shallow ephemeral wetlands to the north and south of Lake Logue, intermittent creeks and drainage lines (Mitsui E&P Australia, 2022b). Recharge occurs via precipitation, surface runoff and discharge from ephemeral drainage and by fresh surface water via Eneabba, Erindoon and Bindoon Creeks, and from overflow from Weelawadgi Lake (Mitsui E&P Australia, 2022b). Lake Logue and Indoon are connected by groundwater trhough conduits and water is lost rapidly through evaporation (Mitsui E&P Australia, 2022b).
Flora	A number of flora surveys have been conducted in the area 19 conservation significant flora could potentially occur (Mitsui E&P Australia, 2022c; GIS Database). Twenty-seven alien weed species have been recorded within the application area, one of these species (*Echium plantagineum*) is listed as a 'Declared Plant' species under the Agriculture and

Characteristic	Details
	Related Resources Protection Act 1976 by the Department of Primary Industries and Regional Development (DPIRD) (ARC Energy, 2006; Mitsui E&P Australia, 2022c). A *Phytophthora cinnamomi* Dieback desktop survey and a ground survey was conducted by Glevan Consulting in December 2021 and the disease was identified in the east-west running creek line on the eastern access track (Mitsui E&P Australia, 2022b)
Ecological communities	There are no Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) located within the application area (GIS Database). The nearest known TEC, Ferricrete floristic community (Rocky Springs type) is located 3.5 kilometres south-east of the application area (GIS Database).
Fauna	There are records of 11 conservation significant fauna that intersect the application area and a further six conservation significant fauna have been recorded within a 20 kilometre radius (GIS Database).

C.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion - Geraldton Sandplains	3,136,037.83	1,404,424.32	44.78	568,255.10	18.12
IBRA Subregion - Lesueur Sandplain	1,171,775.19	502,977.44	42.92	212,497.93	18.13
Local Government – Shire of Carnamah	287,231.20	118,658.74	41.31	49,792.85	17.34
Beard vegetation associations - State					
Veg Assoc No. 377	63,099.54	62,724.44	99.41	47,508.23	75.29
Veg Assoc No. 378	95,109.43	61,031.79	64.17	13,424.82	14.12
Veg Assoc No. 393	5,004.56	4,802.21	95.96	4,434.20	88.60
Beard vegetation associations - Bioregion					
Veg Assoc No. 377	63,099.54	62,724.44	99.41	47,508.23	75.29
Veg Assoc No. 378	95,109.43	61,031.79	64.17	13,424.82	14.12
Veg Assoc No. 393	5,004.56	4,802.21	95.96	4,434.20	88.60
Beard vegetation associations - subregion					
Veg Assoc No. 377	63,099.54	62,724.44	99.41	47,508.23	75.29
Veg Assoc No. 378	90,922.87	60,668.26	66.72	13,424.82	14.77
Veg Assoc No. 393	5,004.56	4,802.21	95.96	4,434.20	88.60

Government of Western Australia (2019)

C.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.2), and biological survey information, impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Distance of closest record to application area (km)	Number of known records derived from Florabase (total)
Eremophila glabra subsp. *chlorella (*Gand.) Chinnock	T	One individual recorded within application area (Mitsui E&P Australia, 2022c)	31

Species name	Conservation status	Distance of closest record to application area (km)	Number of known records derived from Florabase (total)
Banksia elegans	Priority 4	136 individuals located within the application area (Mitsui E&P Australia, 2022c; 2023b)	44
Stawellia dimorphantha	Priority 4	86 individuals located within the application area (Mitsui E&P Australia, 2023b)	23
Calytrix eneabbensis	Priority 4	53 individuals located within the application area (Mitsui E&P Australia, 2022c)	31
Dampiera tephrea	Priority 3	36 individuals located within the application area (Mitsui E&P Australia, 2022c; 2023b)	31
Grevillea biformis subsp. *Cymbiformis*	Priority 3	16 individuals located within the application area (Mitsui E&P Australia, 2022c)	24
Hemiandra sp. Eneabba (H. Demarz 3687)	Priority 3	10 individuals located within the application area (Mitsui E&P Australia, 2022c)	35
Verticordia aurea	Priority 4	Seven individuals located within the application area (Mitsui E&P Australia, 2022c)	31
Acacia telmica	Priority 3	Previously recorded within application area (GIS Database)	27
Acacia vittata	Priority 2	Previously recorded within application area (GIS Database)	15
Comesperma rhadinocarpum	Priority 3	Previously recorded within application area (GIS Database)	17
Desmocladus elongatus	Priority 4	Previously recorded within application area (GIS Database)	43
Eremophila subangustifolia	T	Previously recorded within application area (GIS Database)	13
Fabronia hampeana	Priority 2	Previously recorded within application area (GIS Database)	7
Hopkinsia anoectocolea	Priority 3	Previously recorded within application area (GIS Database)	50
Korthalsella arthroclada	Priority 1	Previously recorded within application area (GIS Database)	7
Patersonia argyrea	Priority 3	Previously recorded within application area (GIS Database)	12
Verticordia densiflora var. roseostella	Priority 3	Previously recorded within application area (GIS Database)	46
Drakaea concolor	T	<5	7

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

C.4. Fauna analysis table

Species name	Common name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)
Actitis hypoleucos	common sandpiper	MI	Y	Recorded within application area
Calidris acuminata	sharp-tailed sandpiper	MI	Y	Recorded within application area
Calidris ferruginea	curlew sandpiper	CR	Y	Recorded within application area
Calidris ruficollis	red-necked stint	MI	Y	Recorded within application area
Zanda latirostris	Carnaby's cockatoo	EN	Y	Recorded within application area
Oxyura australis	blue-billed duck	P4	Y	Recorded within application area
Plegadis falcinellus	glossy ibis	MI	Y	Recorded within application area
Thinornis rubricollis	hooded plover	P4	Y	Recorded within application area
Tringa glareola	wood sandpiper	MI	Y	Recorded within application area

Species name	Common name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)
Tringa nebularia	common greenshank	MI	Y	Recorded within application area
Xenus cinereus	Terek sandpiper	MI	Y	Recorded within application area
Egernia stokesii badia	western spiny-tailed skink	VU	Y	<10
Idiosoma kwongan	shield-backed trapdoor spider	P1	Y	<10
Leipoa ocellata	malleefowl	VU	Y	<10
Arenaria interpres	ruddy turnstone	MI	Y	<20
Hydroprogne caspia	Caspian tern	MI	Y	<20
Pluvialis squatarola	grey plover	MI	Y	<20

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

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 additional area proposed to be cleared contains similar vegetation as the previous application area (GIS Database). As the majority of vegetation clearing is for the maintenance/removal of petroleum infrastructure, the proposed clearing consists of mostly previously cleared areas, therefore the biodiversity values of the vegetation proposed to be cleared has been reduced.	Not likely to be at variance As per CPS 8207/2	No
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared contains foraging habitat for a number of conservation significant fauna and a total 17 conservation significant fauna have been recorded within a 20 kilometres radius of the application area (Mitsui E&P Australia, 2022c; GIS Database).	May be at variance Changed from CPS 8207/2	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: The area proposed to be cleared is likely contain flora species listed under the BC Act (Mitsui E&P Australia, 2022c; 2023b; GIS Database).	At variance As per CPS 8207/2	Yes *Refer to Section 3.2.2, above.*
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: The area proposed to be cleared does not contain species that can indicate a threatened ecological community (TEC). The nearest known TEC, Ferricrete floristic community (Rocky Springs type) is located 3.5 kilometres south-east of the application area (GIS Database).	Not likely to be at variance As per CPS 8207/2	No
Environmental value: significant remnant vegetation and conservation areas		

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the mapped vegetation type is consistent with the national objectives and targets for biodiversity conservation in Australia. The application area is broadly mapped as Beard vegetation associations 377, 378 and 393 (GIS Database). These vegetation associations have not been extensively cleared as over 60% of the pre-European extent of these vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2019). The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.	Not at variance As per CPS 8207/2	No
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: The application area is located within the Lake Logue Nature Reserve and the amendment area is located within an un-named Nature Reserve (R 39744) (GIS Database). Therefore the proposed clearing has the potential to have an impact on the environmental values of the conservation area. However, despite the area being on the Register of National Estate for natural values, it is considered that the clearing to take place is low impact and of a small scale due to being for the rehabilitation/removal/maintenance of petroleum production infrastructure, and subsequently will not significantly impact on the environmental values of the Lake Logue Nature Reserve.	Not likely to be at variance As per CPS 8207/2	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: The application area is located across several lakes including Lake Logue, which is listed in the Directory of Important Wetlands (GIS Database). It is recommended that the restricted clearing condition will remain to minimise potential impacts to the Lake Logue-Indoon System. The application area is mapped across several minor, non-perennial watercourses and one of the five vegetation associations found within the application area is associated with drainage areas, however are not unique and are considered common and widespread in the Geraldton Sandplains bioregion (Government of Western Australia, 2019; GIS Database). Based on the above, the proposed clearing is at variance to this principle. The clearing of native vegetation for the maintenance/removal of petroleum infrastructure is not considered to have a significant impact on the wetlands and watercourses, or the extent of the vegetation communities within the local area.	At variance As per CPS 8207/2	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are moderately susceptible to wind and water erosion. (DPIRD, 2018). Noting the location of the application area, the proposed clearing is likely to have an appreciable impact on land degradation. Impacts of land degradation may continue to be minimised by the implementation of the rehabilitation condition.	May be at variance As per CPS 8207/2	No
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: The application area is not located in a Public Drinking Water Source Area (PDWS) (GIS Database). Given the size of the area to be cleared (40 hectares) compared to the size of the Perth Groundwater Province (4,660,027 hectares (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly. The size and nature of the proposed clearing is unlikely to alter the water	Not likely to be at variance As per CPS 8207/2	Yes

Assessment against the clearing principles	Variance level	Is further consideration required?
table or salinity levels within the application area and is therefore unlikely to impacts on the groundwater dependent ecosystems within the application area (GIS Database).		
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: Various small drainage channels exist which flow into Stockyard Gully Cave and Lake Logue and following exceptional rainfall these drainage flows may cause extensive flooding (ARC Energy, 2006; GIS Database). However the permeable nature of the soils within the application area tends to allow rainwater to percolate vertically to the water table rather than running laterally off the surface (ARC Energy, 2006). The application area is located within the Indoon Logue catchment area (GIS Database). However, the small area to be cleared (15 hectares) in relation to the size of the Indoon Logue catchment area (137,421 hectares) (GIS Database) is not likely to increase the potential for flooding within the application area, local area or within the catchment (GIS Database). Based on the above, the proposed clearing is not likely to be at variance to this Principle.	Not likely to be at variance As per CPS 8207/2	No

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 Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix F. Sources of information

F.2. GIS databases

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

- Clearing Regulations – Schedule One Areas (DWER-057)
- 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)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Black Cockatoo WTBC Breeding
- Black Cockatoo FRTBC Breeding
- Black Cockatoo BC Roosts
- Black Cockatoo BC Feeding SCP
- Black Cockatoo Feeding JF
- Black Cockatoo Feeing Areas Buffered
- Black Cockatoo Baudins Distribution
- Black Cockatoo Forest Red Tail Distribution
- Black Cockatoo Carnabys Distribution
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

F.3. References

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4. Glossary

Acronyms:

BC Act	*Biodiversity Conservation Act 2016,* Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DAWE	Department of Agriculture, Water and the Environment, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DoEE	Department of the Environment and Energy (now DAWE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:-

T **Threatened species:**

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR **Critically endangered species**
Threatened species considered to be "*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN **Endangered species**
Threatened species considered to be "*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU **Vulnerable species**
Threatened species considered to be "*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct Species:

EX **Extinct species**
Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW **Extinct in the wild species**
Species that *"is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI **Migratory species**
Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD **Species of special conservation interest (conservation dependent fauna)**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS **Other specially protected species**
Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P **Priority species:**

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1 **Priority One - Poorly-known species**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 **Priority Two - Poorly-known species**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 **Priority Three - Poorly-known species**
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special

protection but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

(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.

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

(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.

(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.

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

(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.

(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.

(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.