Clearing Desktop Report – CPS 818

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Swan River Crossings Project –
Underground service relocation works
Fremantle Traffic Bridge
Metro Region
EOS1808

D22#1056088
February 2024

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Document Control

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	FBA Environment Sustainability and Approvals Manager	Draft v1	29/09/2022
Reviewer:	Principal Environment Officer	Rev 1	04/10/2022
Reviewer:	Senior Environment Officer	Rev 1	17/10/2022
Author	REDACTED, Environment Contractor	Rev 2	22/2/2024
Reviewer	REDACTED, Fremantle Bridge Alliance Environmental Manager	Rev 2	23/2/2024
Reviewer	REDACTED, Principal Environmental Officer	Rev 2	29/02/2024

1 PROPOSAL

1.1 Purpose and Justification

The purpose of this Clearing Desktop Report (CDR) is to provide a report detailing the assessment of native vegetation clearing that is proposed to be undertaken using the Statewide Clearing Permit CPS 818 issued to Main Roads Western Australia (Main Roads).

The Swan River Crossing Project plans to replace the Fremantle Traffic Bridge (FTB) by constructing a dual carriageway road bridge over the Swan River on the location of the existing FTB. The existing 1939 FTB was designed as a temporary structure, with an initial anticipated lifespan of 40 years. Upgrades to the bridge have allowed the bridge to serve its function well beyond that initial lifespan, the bridge's structure has been deteriorating over a number of years. Despite extensive strengthening and maintenance works, recent investigations have identified that the State heritage listed bridge needs to be replaced. The replacement of the deteriorating bridge will ensure traffic flows in the locality can be maintained. Future road planning in the area has shown that there is a need to maintain a four lane traffic bridge across the Swan River at this location. At least 30,000 vehicles use the traffic bridge per day.

The proposed clearing is for enabling works for the Swan River Crossing project. Replacing the FTB will result in the existing historical bridge structure being demolished. The bridge currently houses various critical utility infrastructure and services and relocation of services off the existing FTB are required to safeguard the assets and ensure reliability of services for the community.

The CDR outlines the key activities associated with the service relocation works, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the works using the ten Clearing Principles, and the strategies used to manage vegetation clearing.

1.1.1 Main Roads Approach to Road Safety and the Environment

Main Roads is committed to minimising the environmental impacts of all of its activities and manages the State road network to achieve balanced economic, social, safety and environmental benefits for the community. Main Roads recognises that Western Australia's environment is significant from a global perspective and the unique conservation values that are contained within its road reserve. Main Roads' road network often adjoins natural areas and, in some locations, the reserve itself hosts remnant vegetation with high environmental values. Although the reserves were not established for this purpose, Main Roads recognises that it has a responsibility to conserve the environmental values that occur within the State's road network and minimise the impact its proposals have on the environment. In addition to providing a safe and efficient road network for all people using the roads under its control, Main Roads is also committed to protecting and enhancing the natural environment.

In accordance with National and State Government road safety policies, Main Roads is also committed to substantially reducing road trauma on the road network through Safe System principles. The Safe System approach acknowledges that more than two thirds of all serious crashes are due to human error rather than deliberate risk taking (e.g. speeding or drink driving) and seeks to improve behaviour through education and enforcement while managing the safety of vehicles, speeds and the road and road infrastructure. It is shown that improving sub-optimal road formation will substantially reduce the likelihood and severity of road crashes. For example, according to the Road Safety Management Guideline, increasing the sealed shoulder from 0.5 m to 2 m will reduce Killed and Seriously Injured numbers by more than 50%.

As the statutory authority responsible for providing and managing a safe and efficient main road network in Western Australia, Main Roads focuses on improving road safety by thoroughly considering all environmental, economic and community benefits and impacts. It operates on a hierarchy of avoiding, minimising, reducing and then, if required, offsetting our environmental impacts. This has been achieved through changes in proposal scope and design. Main Roads regularly reduces its clearing footprint by restricting earthworks limits for proposals, steepening batters, installing barriers, establishing borrow pits in cleared paddocks and avoiding temporary clearing for storage, stockpiles and turn around bays to avoid and minimise its impacts.
Further details on measures to avoid, minimise and reduce are provided in Section 1.5 and 1.6.

1.2 Proposal Scope

Project Name: Swan River Crossings – Underground Utilities Service Relocation Project

Project Purpose / Components: The Project scope is a forward works activity relating to the Swan River Crossings project. The Underground Utility Services Relocation Project will include the following key activities:

- Establish temporary works areas to allow general laydown, crib room, site office, and staff parking.
- Establish temporary laydown areas will also be required at the Horizontal Directional Drilling (HDD) entry and exit locations and pipe stringing area.
- Install three trenchless crossings of HDPE pipeline using HDD method approximately 25-35m beneath the riverbed of the Swan River.
    - The HDD component of works will comprise of three separate underground lines approximately 600mm to 1m in diameter, that run in a north to south direction and located immediately east of the existing FTB underneath the Swan River riverbed.
    - Pipe assembly and pipe stringline will occur on the northern side of Canning Hwy is required for the storage and assembly of the pipe stringline. All pipe assembly works are above ground and do not require any clearing of vegetation.
- Construct a retaining wall to remediate previous over-excavation by others in the clearing of the road reserve of Queen Victoria Street.
- Tie-in (including trenching excavations) to existing utility lines and pipeline commissioning works once trenchless crossings have been completed.
- Disconnect existing gas, potable water, and telecommunications services.

1.3 Proposal Location

The development envelope is located along Beach Street within the City of Fremantle (CoF) as shown in Figure 1. The central coordinate of the proposal is:

- Latitude: -32.042198
- Longitude: 115.7555808

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818: 0.25 ha in a development envelope of 3.45 ha.

Areas of Native Vegetation Clearing: The areas of native vegetation to be cleared are shown in Figure 1. A shapefile of the clearing area assessed in this report and approved to be cleared under CPS818 is available in D24#379228.

Type of Native Vegetation:

An assessment of vegetation in the area indicated that vegetation in the development area is not likely to be naturally occurring. The vegetation has been planted and consists of a significant portion of locally occurring species as if to be representative of (i.e. mimicking) native vegetation.

Although the vegetation is expected to consist entirely of vegetation that is not remnant native vegetation, this clearing is being assessed as though it is native vegetation as a precautionary approach to demonstrate the highest level of consideration and due-diligence has been employed.

Vegetation to be cleared under this Proposal is shown in Figure 1 and has been described as:

- EdCpLOF: *Eucalyptus decipiens* and *Callitris preissii* low open forest
- EgCpMOF: *Eucalyptus gomphocephala* and *Callitris preissii* mid open forest

Figure 1. Clearing Area and Development Envelope

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

There are no alternatives to the proposed clearing as the footprint has been reduced as far as practicable through consultation with the Department of Biodiversity, Conservation and Attractions (DBCA), and only a minimal amount of native vegetation will be removed for the works.

1.6 Measures to Avoid, Minimise, Reduce and Manage Proposal Clearing Impacts

The design and management measures implemented to avoid and minimise the potential clearing impacts of the Proposal are provided in Table 1.

The proposed clearing area will be marked before clearing and the movement of machinery will be restricted to the approved limits of vegetation clearing. Where possible, trees will be pruned rather than cleared.

Table 1 Justification of avoiding, minimising, mitigating, and managing project clearing impacts.

Design or Management Measure	Discussion and Justification
Preferential use of existing cleared areas for access tracks, construction storage and stockpiling	As far as practicable, the two pipe string corridors down the embankment have been selected to avoid clearing native trees and shrubs. Cleared/parkland areas have been selected for infrastructure placement.
Minimise tree removal	As far as practicable, alignment and infrastructure placement been selected to avoid clearing native trees. Wherever possible, trees that have been approved for clearing will be pruned in preference to removal.
Lower impact clearing methodology	In the area of native vegetation, clearing will be done by tree loppers and stump grinding, and the area will not be grubbed. Topsoil / root systems will remain intact as far as practicable.
Reduction in scope of works	Original design and consultation with DBCA and CoF included the installation of three underground utility pipelines. The revised plan includes installation of only two pipelines and this reduces the impact area.

1.7 Approved Policies and Planning Instruments

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, Main Roads has also had regard to the below instruments where applicable. Consideration of these instruments has been documented in either the vegetation survey and/or assessment against the 10 clearing principles.

Other Legislation potentially relevant for assessment of clearing and planning/other matters:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS 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)
- *Rights in Water and Irrigation Act 1914*
- *Aboriginal Heritage Act 1972* (WA).
- *Swan and Canning Rivers Management Act 2006*

Environmental Protection Policies:

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011.

Other relevant policies and guidance documents:

- Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (Government of WA, December 2014)
- Procedure: Native vegetation clearing permits (Government of WA, October 2021)
- Environmental Offsets Guidelines (Government of Western Australia, 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities.

2 SCOPE AND METHODOLOGY ASSESSMENT OF CLEARING

Native vegetation will be cleared to accommodate this Proposal. This clearing will be undertaken using the Main Roads Statewide Clearing Permit CPS 818.

To comply with CPS 818, Main Roads must prepare a Clearing Desktop Report (CDR) that outlines the key activities associated with the Proposal, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the Proposal using the ten Clearing Principles listed under s51 of the *Environmental Protection Act 1986* (EP Act) and strategies used to manage vegetation clearing.

2.1 Report Terminology and Sources

The following terms are used in this Clearing Report:

- **Proposed Clearing Area** – The maximum amount of native vegetation to be cleared for the Proposal that will accommodate the designed earthworks and, typically, a nominal buffer to allow for the safe movement of machinery during construction.
- **Development Envelope** – The total footprint of the works including both cleared and uncleared areas. This is based on the current design. It usually includes a buffer to allow for constructability and the movement of machinery during construction.
- **Survey Area** - Area covered by the Biological Survey.

2.2 Desktop Assessment

An initial desktop environmental impact assessment of the service relocation works was undertaken by viewing internal datasets and other government agency managed databases, and consulting with relevant stakeholders where necessary (FBA 2022). GIS layer viewing and mapping is done using ArcMap and/or Main Roads corporate mapping system known as iMaps. This assessment concluded:

- There is no remnant native vegetation within the development envelope. To the north of the river, there is a limited amount of landscaping and streetscaping of low aesthetic quality. To the south of the river has been landscaped with a mix of lawn and planted native species.

A biological survey conducted by Ecoscape (2024) also included a desktop assessment. This included a review of government agency databases and spatial datasets, historical imagery, and relevant literature. Results from the searches of DBCA databases are presented in Appendix 1.

This Clearing Desktop Report has been informed by the above desktop assessments and the biological survey (refer below) to conduct a desktop assessment against the clearing principles as required by Condition 6 of CPS818/17. Referencing of the GIS layers accessed is done under the relevant methodology section of each clearing principle. Government managed databases were searched to locate additional information.

2.3 Surveys and Assessments

Although the desktop impact assessment concluded that there was no native vegetation present, a biological survey of the vegetation was commissioned to assess any values that may be associated with the vegetation in the proposed Beach Street Reserve. The details of the biological survey is outlined in Table 2 and a summary of the findings in these reports are presented in Sections 3.

Table 2. Summary of Biological and Targeted Surveys Relevant to the Proposal

Consultant & Survey Name	Survey Details
Ecoscape (2024) Beach Street Reserve Spring Biological Surveys	**Survey Area:** The survey area comprised approximately 2.56 ha consisting of the Beach Street Reserve and an area to the west of the FTB between Beach Street and Queen Victoria Street. **Type:** The results incorporate the outcomes of a desktop assessment, a reconnaissance level flora and vegetation survey conducted during April 2022, and a detailed flora and vegetation survey conducted over two days in November 2022. The detailed flora and vegetation survey was conducted according to current Environmental Protection Authority (EPA) guidance (as below) to describe the flora and vegetation values of the site, including determining if it represents native vegetation. A basic fauna survey was also conducted according to current EPA guidance) to describe the fauna and fauna habitat values of the site, including its value to Black Cockatoo species. **Timing:** April 2022 (reconnaissance) and November 2022 and a site visit in January 2023. **Survey Results Shapefile TRIM Ref**: D24#350259 **Document TRIM Ref:** D24#307423

3 SURVEY RESULTS

The biological survey concluded that all areas in the development envelope are either revegetated with native vegetation (but in Degraded-Completely Degraded condition), gardens, parkland and lawn, or not having vegetation i.e. cleared (noting that this also includes gardens immediately adjacent to existing buildings). None of the fauna habitat types present in the survey area have any significance for any fauna species. The survey indicated that the values of the site are likely to be social rather than environmental as the site is significantly disturbed and degraded.

The results of the biological survey are summarised below.

3.1 Summary of Flora and Vegetation Surveys

The 2.56 ha survey area is in the city of Fremantle in the Swan Coastal Plain bioregion. The survey area primarily consists of the Beach Street Reserve. The survey area was subject to a detailed flora

and vegetation survey conducted over two days in November 2022 and a brief site visit during January 2023. The results also incorporate the outcomes of a reconnaissance survey conducted in April 2022.

The significant findings of these surveys were:

- Vegetation is not likely to be remnant native vegetation because it has been historically cleared. The vegetation is either regrowth or replanted but contains a significant portion of locally occurring species as if to be representative of (i.e. mimicking native vegetation).
- 73 vascular flora species recorded from the 12 quadrats and relevés (noting that some overlap in extent) and nine vegetation observation points recorded in planted gardens. This included at least 49 introduced (weeds) or deliberately planted non-native species (67.12% of the total inventory), including one Declared Pest plant/Weeds of National Significance (WoNS) species; **Asparagus asparagoides* (Bridal Creeper) that has no management requirements.
- The survey identified four vegetation types that were potentially native vegetation and two garden (planted) vegetation types (that do not represent native vegetation) plus parkland cleared areas (i.e. planted trees over grass). The vegetation types identified to potentially represent native vegetation or native (natural) or semi-native (planted using local native species) vegetation were:
    - AxTrMhTS: *Acacia xanthina*, *Templetonia retusa* and *Melaleuca huegelii* tall shrubland
    - EdCpLOF: *Eucalyptus decipiens* and *Callitris preissii* low open forest
    - EgCpMOF: *Eucalyptus gomphocephala* and *Callitris preissii* mid open forest
    - StLCF: **Schinus terebinthifolia* low closed forest.
- All vegetation to be cleared is in 'Degraded' or 'Completely Degraded' condition.
- None of the vegetated areas are representative of any currently described Threatened Ecological Community (TEC) or Priority Ecological Community (PEC) and no Threatened or Priority Flora species were recorded during the survey. The results of the vegetation survey were used to conduct a likelihood of occurrence assessment for the presence of potential significant flora or ecological communities. The likelihood of occurrence assessment did not identify any flora species or ecological communities that were considered likely to occur in the survey area.
- The flora and vegetation of the survey area was not considered to be locally or regionally significant according to the descriptions of significance outlined in the Flora and Vegetation Technical Guidance (EPA 2016).

3.2 Summary of Fauna Surveys

A basic fauna survey was conducted at the same time as the flora and vegetation survey and found:

- three fauna habitat types were present in the survey area:
    - Shrubland that provided the greatest variety of structure and species for shelter, nesting and food sources,
    - Woodland that provided perching habitat and ground foraging, and
    - Grassland that provided open foraging in lawn (grass) areas
- 11 fauna species (all birds) were recorded including three introduced species, none of which were conservation-listed and all common in urban areas.

The fauna survey also assessed the suitability of the area for Black Cockatoos. This assessment found:

- No evidence of Black Cockatoo use.

- Three trees of a suitable diameter to be Black Cockatoo nesting trees, however, none had hollows. One of these trees occurs in the clearing area.
- Although potential roosting trees were present, there are more suitable areas 1.2 km to the south-east which have a source of fresh water.
- The report concluded that if Black Cockatoos occur in the survey area it is likely to be briefly for resting during traverses of the area (day roosting) and not for foraging or for night roosting.
- After considering the results of the survey the report determined that three species had the potential to visit the survey area, but would not depend on the resources within it:
    - *Zanda latirostris* (Carnaby's Cockatoo) – EPBC EN; BC EN
    - *Calyptorhynchus banksii naso* (Forest Red-tailed Black Cockatoo) – EPBC VU; BC VU
    - *Falco peregrinus* (Peregrine Falcon) – BC OS

4 VEGETATION DETAILS

Although the report has indicated vegetation to be cleared is unlikely to be remnant native vegetation, this clearing is being assessed as native vegetation as a precautionary measure in case some was not historically cleared or it would meet the definition of native vegetation under the Environmental Protection Regulations (e.g. if it was originally planted for biodiversity or land conservation).

4.1 Proposal Site Vegetation Description

The area proposed to be cleared is in the Swan Coastal Plain IBRA region and the Perth subregion (SWA2).

Department of Primary Industries and Regional Development (DPIRD) mapping on Native Vegetation Extent (DPIRD 2023) indicates there is no remnant native vegetation in the application area. An aerial photograph from 1974 shows that the application area has been previously cleared and subsequent aerial photos from the 1970s and 1980s (refer Appendix 2) show landscaping and plantings with some areas being maintained as grassed parkland (Ecoscape 2024). The vegetation is replanted but contains a significant portion of locally occurring species as if to be representative of (i.e. mimicking) native vegetation. Therefore, the vegetation within the application area is likely planted and not considered native vegetation. However, because the areas may contain some natural regeneration they have been considered 'native vegetation' as a precautionary measure for the purposes of project approvals.

The proposed clearing area and immediate surrounds intersect one pre-European Vegetation Association: 998: Woodland southwest: Jarrah, marri and wandoo *Eucalyptus marginata*, *Corymbia calophylla*, *E. wandoo*. Table 3 provides a summary of the remaining extents of this association.

Table 3. Pre-European Vegetation Representation (Government of Western Australia 2019)

Pre-European Vegetation Association	Scale	Pre–European Extent (ha)	Current Extent (ha)	% Remaining	% Current Extent in DBCA Managed Land (proportion of pre-European Extent)
Veg Assoc No. 998	**Statewide**	51,015.33	18,492.63	36.25	*48.68*
	IBRA Bioregion *Swan Coastal Plain*	50,867.50	18,492.32	36.35	*48.68*
	IBRA Sub-region *Perth*	50,867.50	18,492.32	36.35	*48.68*
	Local Government Authority *City of Fremantle*	1,147.71	12.33	1.07	*N/A*

The vegetation survey described two vegetation types of potentially native vegetation within the clearing area:

- ***Eucalyptus gomphocephala* and *Callitris preissii* mid open forest (EgCpMOF):** *Eucalyptus gomphocephala* and *Callitris preissii* mid open forest over *Melaleuca huegelii, Spyridium globulosum* and *Acacia xanthina* tall open shrubland over *Rhagodia baccata* and **Tetragonia decumbens* low chenopod open shrubland/forbland
- ***Eucalyptus decipiens* and *Callitris preissii* low open forest (EdCpLOF):** *Eucalyptus decipiens* and *Callitris preissii* low open forest over *Acacia rostellifera, Spyridium globulosum* and *Acacia xanthina* tall shrubland over *Rhagodia baccata*, **Fumaria capreolata* and **Euphorbia terracina* low open chenopod shrubland/forbland

Other areas of the development envelope consist of planted trees that the survey found are not considered representative of native vegetation. These areas have not been considered in this assessment.

The vegetation condition of the potentially native vegetation to be cleared is mapped as 'Degraded' or 'Completely Degraded' (Ecoscape 2024). The main factor affecting vegetation condition within the portion considered as native vegetation was the amount of weeds. Table 4 provides details of the vegetation types and their condition within the proposed clearing area. Table 5 provides a summary of the vegetation complexes found within the Survey Area.

Table 4. Summary of Vegetation Types within Clearing Area

Vegetation Type	Vegetation Condition	Extent within Clearing Area (ha)	Total Extent Mapped within Survey Area (ha)
EgCpMOF	Total: • Degraded	0.03 • 0.03	0.05
EdCpLOF	Total: • Degraded • Completely Degraded	0.22 • 0.01 • 0.20	0.25

Table 5. Vegetation Complexes (Heddle/Mattiske) within the Development Envelope

Heddle/Mattiske Veg Complex	Pre-European Extent (ha)	Current Extent (ha)	% Remaining
Cottesloe Complex – Central and South	45,299.61	14,567.87	32.16

5 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

In assessing whether the Proposal's proposed clearing is likely to have a significant impact on the environment, the Proposal was assessed against the ten Clearing Principles (EP Act, Schedule 5).

Each principle has been assessed in accordance with the former Department of Environment Regulation (now Department of Water and Environmental Regulation (DWER)) '*A Guide to the Assessment of Applications to Clear Native Vegetation*' (DER 2014) and other relevant clearing permit application decision reports prepared by DWER.

The proposed clearing is not likely to be at variance with the ten Clearing Principles.

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

Proposed clearing is not likely to be at variance to this Principle.

Assessment

The proposed clearing area is 0.25 ha and occurs in the Swan Coastal Plain bioregion in a highly developed area that is surrounded by urban, transport (roads, rail), industrial (port) and parks and recreation land uses. The proposed clearing area was surveyed by Ecoscape (2024) as part of a wider 2.56 ha survey area. The flora and vegetation survey did not identify any significant vegetation (Threatened or Priority Ecological Communities) or conservation significant (Threatened or Priority) flora within the survey area. The survey recorded 73 vascular flora species of which 49 (67.12%) were introduced. The vegetation is in 'degraded' or 'completely degraded' condition.

An aerial photograph from 1974 shows that the application area has been previously cleared and subsequent aerial photos from the 1970s and 1980s show landscaping and plantings (Ecoscape 2024). Therefore, the vegetation within the application area is likely planted however may contain some natural regeneration and has been considered 'native vegetation' as a precautionary measure.

The native vegetation proposed to be cleared has been mapped as:

- *Eucalyptus gomphocephala* and *Callitris preissii* mid open forest (EgCpMOF)
- *Eucalyptus decipiens* and *Callitris preissii* low open forest (EdCpLOF)

Although by its description the EgCpMOF vegetation typr has potential to represent the EPBC Tuart Woodlands TEC, the Ecoscape (2024) vegetation survey included an assessment against Approved Conservation Advice for this TEC (DotEE 2019). Ecoscape's assessment found only 0.05 ha of the EgCpMOF vegetation type in the survey area. Consequently, this vegetation type does not meet the minimum patch size (0.5 ha) criteria set out in the Approved Conservation Advice and therefore does not represent this TEC.

The survey found the proposed clearing area and surrounding vegetation provides negligible fauna habitat, and therefore the area is not expected to have high fauna diversity.

Overall, the vegetation proposed to be cleared does not represent a high level of biodiversity. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology

- Vegetation Survey (Ecoscape 2024)
- DotEE (Department of the Environment and Energy) (2019)

(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.

Proposed clearing is not likely to be at variance to this Principle.

Assessment

A search of DBCA databases conducted by Ecoscape (2024) identified that 11 conservation listed species have previously been recorded within a 10 km buffer of the survey area. This included one mammal, nine birds, and one invertebrate. The EPBC Act Protected Matters Search Tool identified three mammal and 13 bird species that either have known habitat in the area or habitat is likely to occur in the area.

A desktop likelihood assessment conducted by Ecoscape (2024) indicated that two fauna species were likely to occur in the survey area and one that may occur. Following the field survey this likelihood assessment was reviewed but resulted in no changes to the desktop assessment with the following three conservation significant species may use the area:

- *Calyptorhynchus banksii naso* Forest Red-tailed Black Cockatoo (EPBC VU; BC VU) – Likely
- *Calyptorhynchus latirostris* Carnaby's Cockatoo (EPBC EN; BC EN) – Likely
- *Falco peregrinus (Peregrine Falcon) – BC OS* – May Occur

This survey report indicates that although these species may use the area, none of these species were likely to depend on the resources within the survey area.

Ecoscape's assessment found that the Forest Red-tailed Black Cockatoo (FRTBC) and Carnaby's Cockatoo may occur in the survey area as they are relatively common on the Swan Coastal Plain and there are records in the DBCA database of sightings in proximity to the survey area. However, no direct or indirect evidence of either species was recorded by Ecoscape during the April 2022, November 2022 and January 2023 field surveys (Ecoscape, 2024). The 0.25 ha of vegetation proposed to be cleared provides marginal foraging habitat for the FRTBC and Carnaby's Cockatoo. The area does not contain any of the preferred foraging sources (such as Banksia species, Jarrah, Marri or Pine) for either Cockatoo species. Although some isolated flora species in the area may be used for foraging, they are unlikely to provide any significant food source and Ecoscape (2024) concluded that Black Cockatoos are not likely to be dependent on the resources in the survey area. There is one tree with a DBH (diameter at breast height) >50cm within the proposed clearing area, however it has no evidence of hollows. Furthermore, it is noted that the proposed clearing area is not within the modelled breeding range of any Black Cockatoo species (DAWE 2022; EPA 2019). Considering the scale and nature of the vegetation proposed to be cleared, it is not considered significant habitat for black cockatoos.

The Ecoscape (2024) fauna survey found that Peregrine Falcons may occur on rare occasions by overflying the survey area during traverses of the area. However, as there are no suitable nest areas and unlikely to be significant prey, the species would not be dependent on any resources in the survey area.

In summary, Ecoscape's biological survey found no significant habitat for terrestrial fauna occurs within the proposed clearing area. The proposed clearing area is very small in extent, degraded in nature and surrounded by roads, urban and industrial areas. All areas have been heavily disturbed for many years and there is no significant habitat for fauna.

Based on the above, the proposed clearing is not likely at variance to this Principle.

Methodology

- Biological Survey (Ecoscape 2024)
- DAWE (Department of Agriculture, Water and the Environment) (2022)
- EPA (Environmental Protection Authority) (2019)

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

Proposed clearing is not at variance to this Principle.

Assessment

Database searches undertaken by Ecoscape (2024) identified 12 threatened flora species within a 10 km buffer of the survey area. This consisted of one species known to occur within the search buffer and the remaining species identified in the EPBC Protected Matters Search Tool (which identifies where associated habitat may occur).

Ecoscape (2024) did not identify any threatened flora within the survey area during the field assessment. Ecoscape undertook a likelihood of occurrence assessment which considered the results of the field assessment, vegetation condition, disturbances, and habitat availability. The assessment concluded Threatened flora species were highly unlikely to occur in the survey area.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

- Biological Survey (Ecoscape 2024)

(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.

Proposed clearing is not at variance to this Principle.

Assessment

Ecoscape (2024) reported that four Threatened Ecological Communities (TECs) occur within a 10 km buffer of the survey area. One of these TECs; SCP30a: *Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain) occurs within a 5 km buffer of the survey area.

An assessment of likelihood was conducted by Ecoscape (2024) based on the vegetation and flora survey results. The likelihood assessment concluded that two of the four TEC's do not occur due to a lack of suitable habitat or species:

- Subtropical and Temperate Coastal Saltmarsh (EPBC-VU)
- Banksia Woodlands TEC (EPBC-EN)

The assessment determined the vegetation present within the survey area does not constitute any currently described TEC, including the remaining two identified from the 10km buffer database search:

- Tuart Woodlands TEC (EPBC-CR).
- *Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain (floristic community type 30a as originally described in Gibson et al. (1994)) (BC Act-VU).

Although by its description the EgCpMOF vegetation type has potential to represent the EPBC Tuart Woodlands TEC, the Ecoscape (2024) vegetation survey included an assessment against Approved Conservation Advice for this TEC (DotEE 2019). Ecoscape's assessment found only 0.05 ha of the EgCpMOF vegetation type in the survey area. Consequently, this vegetation type does not meet the minimum patch size (0.5 ha) criteria set out in the Approved Conservation Advice and therefore does not represent this TEC.

Based on the above, the vegetation proposed to be cleared does not comprise a TEC and is not necessary for the maintenance of a TEC. The proposed clearing is not at variance to this Principle.

Methodology

- Biological Survey (Ecoscape 2024)
- DotEE (Department of the Environment and Energy) (2019)

(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.

Proposed clearing is not likely to be at variance to this Principle.

Assessment

The survey area is located within an urban and industrial area that has been extensively cleared.

According to desktop mapping, the Pre-European Vegetation Association intersecting the survey area was identified as Association 998: Woodland southwest: Jarrah, marri and wandoo *Eucalyptus margin*ata*, Corymbia calophylla*, *E. wandoo* (Table 3, page 14). This association has over 30% of its original extent remaining at State, bioregion, and subregional scales, but only 1.07% remaining within the LGA (Government of Western Australia 2019).

The intersecting Heddle vegetation complex ('Cottesloe Complex – Central and South') has over 30% of its original extent remaining (Government of Western Australia 2019) (Table 5, page 14).

Although the proposed clearing is located in an area that has been extensively cleared at the local scale, the Ecoscape survey report found that the vegetation has no conservation significance at a local or regional scale because:

- The vegetation has been previously cleared, is planted, and is not considered remnant vegetation. Rather it has been planted to mimic native vegetation. Ecoscape (2024) noted that no Jarrah, Marri or Wandoo were present in the survey area, indicating the area is not representative of Pre-European Vegetation Association 998.
- The vegetation is in 'Degraded' to 'Completely degraded' condition with large proportion of weeds present and low biodiversity values.
- The vegetation does not form part of a conservation reserve, ecological linkage or provide habitat for significant flora or ecological communities.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

- Biological Survey (Ecoscape, 2024)
- Government of Western Australia (2019)

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

Proposed clearing is not likely to be at variance to this Principle.

Assessment

No watercourses or wetlands intersect the proposed clearing area (DBCA-019; DWER-031). The clearing area is in close proximity to the Swan River Estuary which is a classified as a conservation category wetland (DBCA-019) and within the Swan Canning Riverpark boundary (DBCA-035).

The river foreshore is highly modified by development consisting of a hard engineered foreshore edge and is immediately surrounded by either hard surfaces (roads, wharfs, carparks), developments or grassed parklands. No native vegetation is present in the foreshore area. The vegetation to be cleared is located approximately 35 to 65 metres from the foreshore river's edge and outside the floodplain (DWER-020) and therefore is outside the typical riparian zone. On this basis the vegetation is not considered to contributing to an ecological or hydrological buffer for the river.

Because the vegetation is not within the riparian zone or growing in association with the Swan River Estuary wetland the only risk from clearing is from indirect impacts to the ecological function of the Swan River estuary such as sedimentation from surface runoff or wind erosion. The soils have a low risk of water

erosion but a high risk of wind erosion (DPIRD-013, DPIRD-016). This risk can be managed post-clearing through typical stabilisation and dust management controls (which are required by the DBCA endorsed environmental management plan approved under condition 4 of the development approval) and indirect impacts to the Swan River are not considered likely.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

- Biological Survey (Ecoscape 2024)
- Government GIS shapefiles:
    - Geomorphic Wetlands, Swan Coastal Plain (DBCA-019). Accessed 23/2/2024.
    - FPM Floodplain Area (DWER-020). Accessed 23/2/2024
    - Hydrography, Linear (Hierarchy) (DWER-031). Accessed 23/2/24.
    - Soil landscape land quality - Water Erosion Risk (DPIRD-013). Accessed 23/2/24.
    - Soil landscape land quality - Wind Erosion Risk (DPIRD-016). Accessed 23/2/24.
    - Swan Canning Riverpark (DBCA-035). Accessed 23/2/24.

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

Proposed clearing is not likely to be at variance to this Principle.

Assessment

The survey area is extensively degraded with likely no natural landforms remaining.

Mapped soils in the clearing area have a low risk of ASS (DWER-055), water erosion, salinity, and waterlogging, but are mapped as having a high risk of wind erosion (DPIRD-009; DPIRD-013; DPIRD-015; DPIRD-016). Given the small scale of clearing it is considered unlikely that there would be significant land degradation from wind action and this risk can be managed post-clearing through typical stabilisation and dust management controls which are required by the DBCA endorsed environmental management plan approved under condition 4 of the development approval.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

- Government GIS Shapefiles:
    - Acid Sulfate Soil Risk Map, Swan Coastal Plain (DWER-055). Accessed 23/2/24.
    - Soil landscape land quality - Water Erosion Risk (DPIRD-013). Accessed 23/2/24.
    - Soil landscape land quality - Wind Erosion Risk (DPIRD-016). Accessed 23/2/24.
    - Soil landscape land quality - Salinity Risk (DPIRD-009). Accessed 23/2/24.
    - Soil landscape land quality - Waterlogging Risk (DPIRD-015). Accessed 23/2/24.
    - Soil landscape land quality - Surface Acidity (current) (DPIRD-035). Accessed 26/2/24.
    - Soil landscape land quality – Flood Risk (DPIRD-007). Accessed 26/2/24.

(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.

Proposed clearing is not likely to be at variance to this Principle.

Assessment

The nearest mapped conservation area is Bush Forever site #490 Cantonment Hill located approximately 40 to 70 metres to the south of the proposed clearing area and is separated by the Canning Highway and parkland cleared areas (DPLH-019). No direct or indirect impacts to this site (#490) are expected because of the minor clearing activities.

The clearing will occur in the Swan Canning Riverpark (DBCA-035) and Development Control Area (DBCA-028) and development approval has been obtained in consultation with DBCA. Approval to conduct the works has been obtained from DBCA. The clearing is not expected to impact on the Swan River (refer principle i) which is a conservation category wetland (DBCA-019). The works will be conducted in accordance with the DBCA-approved management plan, which is a condition of the development approval.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

- Government of Western Australia (n.d.) Environmental Offsets Register [website]. Accessed 26/2/24.
- Government GIS Shapefiles:
  - DBCA - Legislated Lands and Waters (DBCA-011). Accessed 23/2/24.
  - Geomorphic Wetlands, Swan Coastal Plain (DBCA-019). Accessed 23/2/2024.
  - Ramsar Sites (DBCA-010). Accessed 26/2/24.
  - Directory of Important Wetlands in Australia - Western Australia (DBCA-045). Accessed 23/2/24.
  - Bush Forever Areas 2000 (DPLH-019). Accessed 23/2/24.
  - Swan Canning Riverpark (DBCA-035). Accessed 23/2/24.
  - Swan and Canning River - Development Control Area (DBCA-028). Accessed 23/2/24.

(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.

Proposed clearing is not likely to be at variance to this Principle.

Assessment

The proposed clearing area is not located within a proclaimed surface water area but is located in the proclaimed Perth Groundwater area (DWER-037; DWER-034). The proposed clearing of native vegetation is very minor in scale (0.25 ha), and would not be expected to result in changes to the groundwater regime. The soils of the area are mapped as having a low risk for factors that may affect groundwater quality.

The clearing area is approximately 35 to 65 metres from the edge of the Swan River Estuary (which is a classified as a conservation category wetland) and within the Swan Canning Riverpark and development control area (DBCA-019; DBCA-035; DBCA-028). Due to the site's proximity to the Swan River, precautionary measures will be undertaken to prevent surface runoff and potential sedimentation from any works. An environmental management plan was prepared to comply with Condition 4 of the Development Approval. This plan was reviewed and endorsed by DBCA. The plan commits to erosion and sediment controls to be implemented post-clearing to ensure sediment laden water does not enter the swan river or stormwater drains.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

- Government GIS Shapefiles:

- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037). Accessed 23/2/24.
- RIWI Act, Groundwater Areas (DWER-034). Accessed 23/2/24.
- Acid Sulfate Soil Risk Map, Swan Coastal Plain (DWER-055). Accessed 23/2/24.
- Soil landscape land quality - Water Erosion Risk (DPIRD-013). Accessed 23/2/24.
- Soil landscape land quality - Wind Erosion Risk (DPIRD-016). Accessed 23/2/24.
- Soil landscape land quality - Salinity Risk (DPIRD-009). Accessed 23/2/24.
- Soil landscape land quality - Waterlogging Risk (DPIRD-015). Accessed 23/2/24.
- Soil landscape land quality - Surface Acidity (current) (DPIRD-035). Accessed 26/2/24.
- Soil landscape land quality – Flood Risk (DPIRD-007). Accessed 26/2/24.
- Geomorphic Wetlands, Swan Coastal Plain (DBCA-019). Accessed 23/2/2024.
- Swan Canning Riverpark (DBCA-035). Accessed 23/2/24.
- Swan and Canning River - Development Control Area (DBCA-028). Accessed 23/2/24.

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Proposed clearing is not likely to be at variance to this Principle.

Assessment

Fremantle (Swanbourne Weather Station located approximately 11.5 km away) has an annual average rainfall of 728.7 mm (Bureau of Meteorology Australia 2024).

The site is predominantly underlain by limestone (LS1) – pale yellow brown fine-grained angular and medium-grained rounded quartz and calcite cross-bedding minor heavy minerals. The unvegetated southern bank of the Swan River is underlain by sand (S14) – white to pale grey subangular to subrounded medium to coarse-grained quartz sand abundant shells and shell fragments. These soils have a low flood hazard risk and waterlogging risk (Department of Primary Industries and Regional Development n.d.).

Whilst the Swan River foreshore is at risk of tidal and storm surges in the winter months, the area to be cleared is outside the floodplain for a "designated flood event". According to DWER's floodplain mapping tool this floodplain area represents "the peak flood level for the 1 in 100 (1%) AEP flood event with the application of sea level rise" (DWER n.d.). Although clearing of vegetation can contribute to flooding from increased runoff from the cleared area, the proposed clearing area of 0.25 ha represents approximately 0.01% of the 1,741 ha sub-catchment which is also largely cleared.

Based on the above and considering the proposed clearing of native vegetation is minor in scale (0.25 ha), it is unlikely to increase the intensity or incidence of flooding above the current risk level.

Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology

- Bureau of Meteorology Australia. (2024). Climate Data Online – Swanbourne (Station 009215). Available online from http://www.bom.gov.au/climate/data/index.shtml. Accessed 26/2/24.
- Department of Primary Industries and Regional Development (n.d.). Soil Landscape Mapping - Best available [spatial dataset], NRInfo (natural resource information) for Western Australia. Accessed 22/2/24.
- Department of Water and Environmental Regulation (n.d.). Floodplain mapping tool, WA.gov.au - Floodplain mapping tool. Accessed on 23/2/24.
- Government GIS Shapefiles:
  - FPM Floodplain Area (DWER-020). Accessed 23/2/2024.
  - Soil landscape land quality - Waterlogging Risk (DPIRD-015). Accessed 23/2/24.
  - Soil landscape land quality – Flood Risk (DPIRD-007). Accessed 26/2/24.
  - Hydrographic Catchments - Subcatchments (DWER-030). Accessed 23/2/24.

6 REHABILITATION, REVEGETATION & OFFSETS

6.1 Revegetation and Rehabilitation

The area being cleared for the service relocation works is within the footprint of the larger bridge replacement works. Pursuant to condition 9(b) of CPS 818, Main Roads intends to use areas cleared for the purposes of service relocation works for bridge replacement works within the next 24 months. As such, no revegetation or rehabilitation will be undertaken pursuant to CPS 818.

6.2 Offset Proposal

No offset proposal is required as the proposed clearing will not result in significant residual impacts to native vegetation within the region.

7 COMPLIANCE WITH CPS 818

The clearing associated with the proposal is not at variance, or not likely to be at variance, with any of the ten Clearing Principles. Additional management actions under CPS 818 are detailed in Table 6.

Table 6. Summary of Additional Management Actions Required by CPS 818

Impact of Clearing	Yes/No or NA	Further Action Required
1. The CDR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.	**No**	No further action required.
2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality **or** (j) the incidence of flooding.	**No**	No further action required.
3. Clearing is at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality **and** (j) the incidence of flooding.	**No**	No further action required.
4. The Proposal involves clearing for temporary works (as defined by CPS 818).	**No**	The area being cleared for the service relocation works is within the footprint of the larger bridge replacement works. Pursuant to condition 9(b) of CPS 818, Main Roads intends to use areas cleared for the purposes of service relocation works for bridge replacement works within the next 24 months. As such, no revegetation or rehabilitation will be undertaken pursuant to CPS 818.

Impact of Clearing	Yes/No or NA	Further Action Required
5a. Proposal is within a Region that: • has rainfall greater than 400mm; and, • is South of the 26th parallel; and, • works are necessary in 'Other than dry conditions'; and, • works have potential for **uninfested** areas to be impacted.	**No**	The clearing area occurs in the Swan Canning Riverpark and Development Control Area for which DBCA have responsibilities in management. Whilst Fremantle has an average annual rainfall of 728.7 mm annually, clearing works are expected to occur in dry conditions (March). There is minimal potential for uninfested areas to be impacted.
5b. Do the proposed works require clearing within or adjacent to DBCA managed lands in non-dry conditions?	**No**	
6. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback.	**No**	No further action required.
7. Weeds are likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.	**No**	There is no vegetation in the immediate area that is in 'good' or better condition. All surrounding areas are either parkland cleared, lawns or vegetation in degraded' to 'completely degraded' condition.
8. Did an environmental specialist conduct the survey or field assessment?	**Yes**	The Environmental Specialist undertaking the biological assessments was suitably qualified and had more than three years' experience.
9. Did an environmental specialist prepare the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal?	**Yes**	The Environmental Specialist preparing the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal was suitably qualified and had more than three years' experience.

8 REFERENCES

Bureau of Meteorology Australia. (2024). Climate Data Online – Swanbourne (Station 009215). Available online from http://www.bom.gov.au/climate/data/index.shtml. Accessed 26/2/24.

DAWE (Department of Agriculture, Water and the Environment) (2022) Referral guideline for 3 WA threatened black cockatoo species Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black-cockatoo.

DBCA (Department of Biodiversity, Conservation and Attractions) (2023) Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) [spatial dataset] Accessed via data.wa.gov.au 23/2/24.

DER (Department of Environment Regulation) (2014). A guide to the assessment of applications to clear native vegetation under Part V Division 2 of the Environmental Protection Act 1986. Department of Environment Regulation. Perth, Western Australia.

DotEE (Department of the Environment and Energy) (2019). Approved Conservation Advice (incorporating listing advice) for the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community.

DPIRD (Department of Primary Industries and Regional Development) (2023) Native Vegetation Extent (DPIRD-005) [spatial dataset]. Accessed via data.wa.gov.au 23/2/24.

DPIRD (n.d.). Soil Landscape Mapping - Best available [spatial dataset], NRInfo (natural resource information) for Western Australia. Accessed 22/2/24.

Ecoscape (2024) Beach Street Reserve Spring Biological Surveys. Report prepared for Fremantle Bridge Alliance. (MRWA internal reference D24#307423).

EPA (Environmental Protection Authority) 2016, Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. Available from: http://www.epa.wa.gov.au/policies-guidance/technical-guidance-flora-and-vegetation-surveysenvironmental-impact-assessment

EPA (2019) Carnaby's Cockatoo in Environmental Impact Assessment in the Perth and Peel Region.

FBA (Fremantle Bridge Alliance) (2022) Environmental Impact Assessment - Underground Utility Services Relocation. Report prepared for Main Roads WA (MRWA internal reference D22#673199).

Government of Western Australia. (2019). 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth. Available online from: https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

9 APPENDICES

Appendix 1: DBCA Threatened Flora and Fauna Database Searches

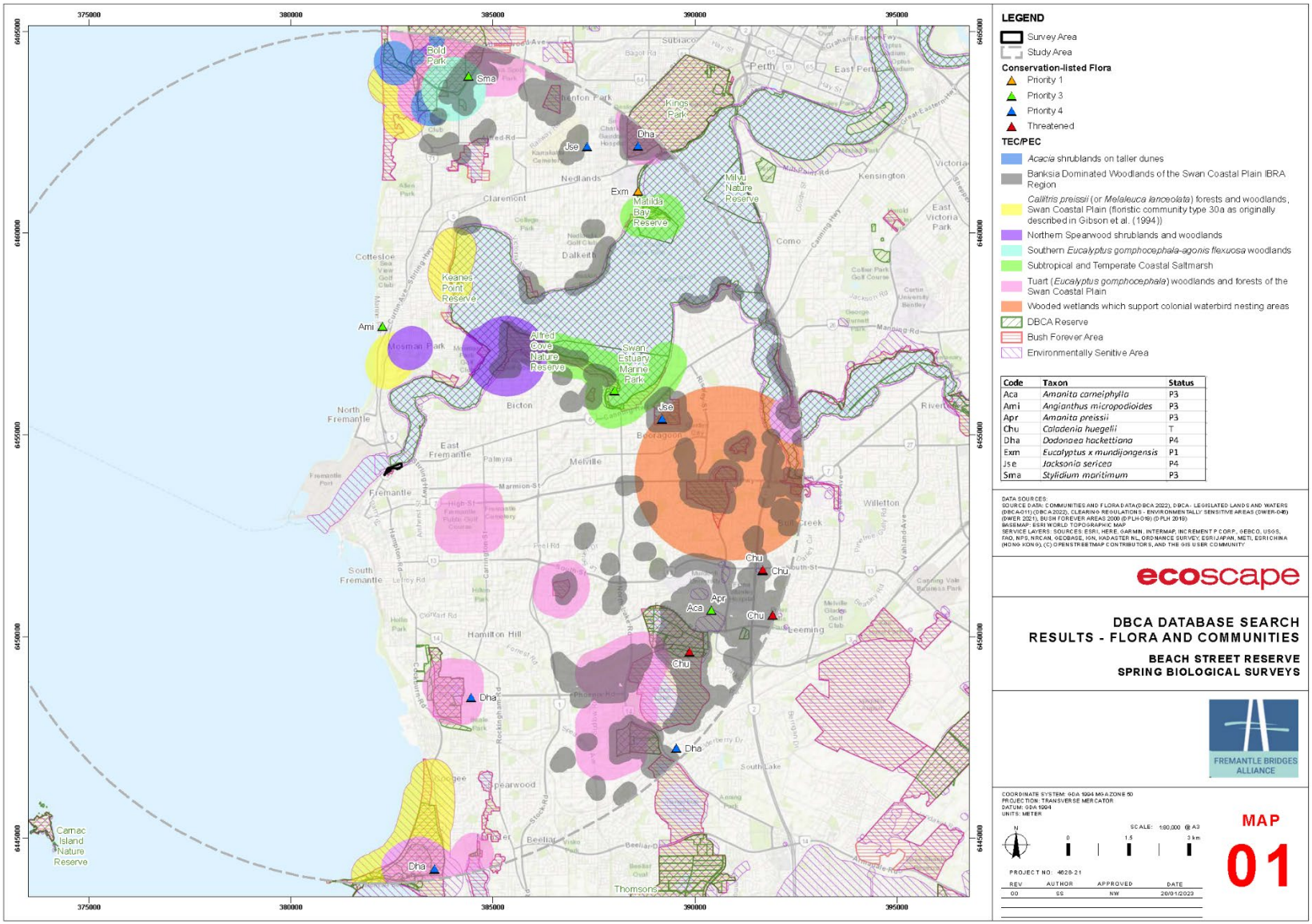

Figure 2 DBCA database search results – Flora and communities (Ecoscape 2024)

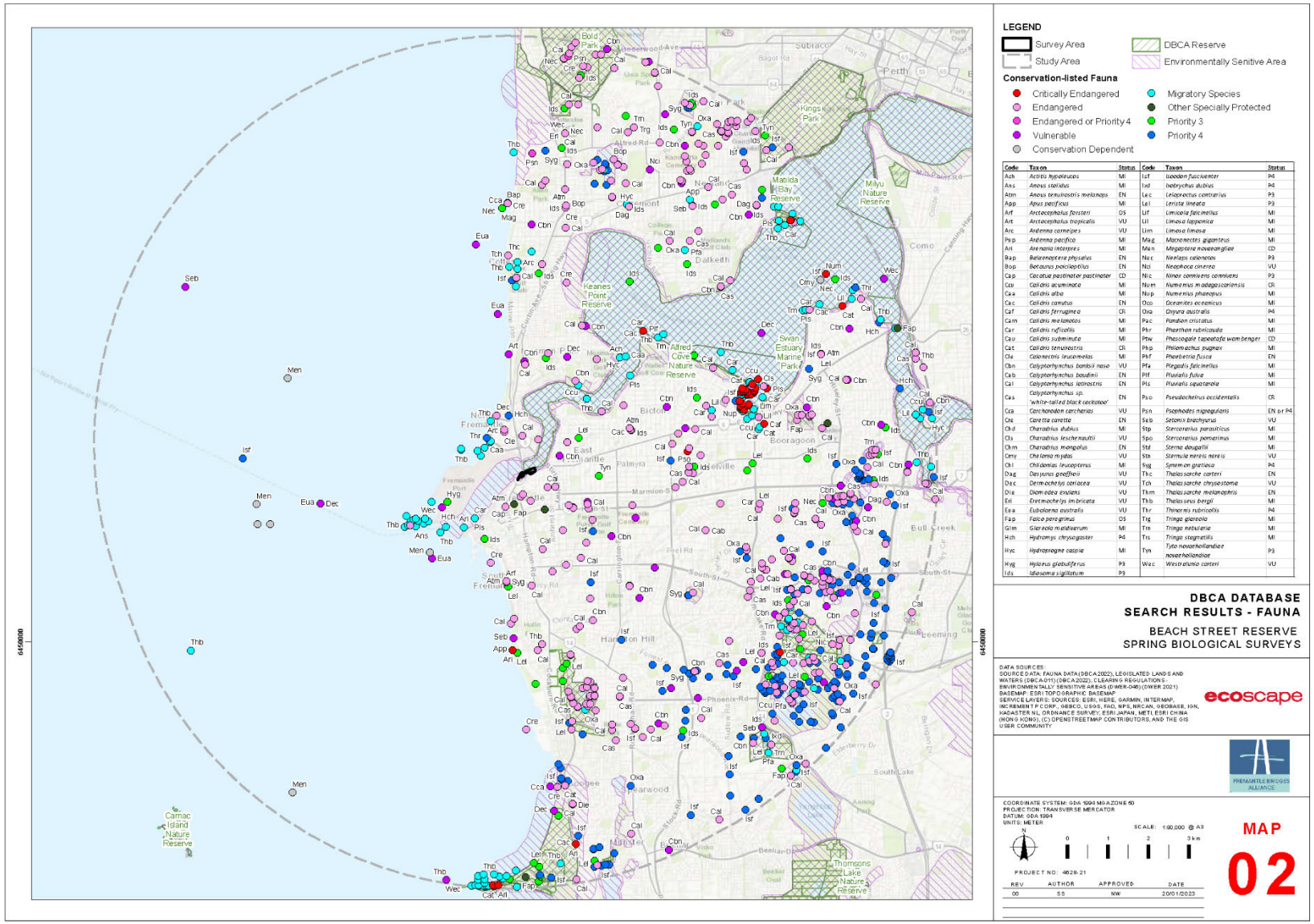

Figure 3 DBCA database search results – Fauna (Ecoscape 2024)

Appendix 2: Historical aerial imagery of the survey area

The following images are taken from the Beach Street Reserve Spring Biological Survey report (Ecoscape 2024).

Figure 4 1974 aerial image

Figure 5 1981 aerial image

Figure 6 1985 aerial image

Figure 7 1995 aerial image

Figure 8 2000 aerial image