



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	8594/1
Permit Holder:	Cranford Pty Ltd
Duration of Permit:	3 January 2020 – 3 January 2025

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of bulk earthworks prior to residential development.

2. Land on which clearing is to be done

Lot 500 on Deposited Plan 74198, Brabham.

3. Area of Clearing

The Permit Holder must not clear more than 1.08 hectares of native vegetation within the area cross hatched yellow on attached Plan 8594/1.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II – MANAGEMENT CONDITIONS

5. Direction of clearing

The Permit Holder shall conduct clearing in a progressive manner from one direction to the other (north to south) to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

6. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

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

7. Dieback and weed control

When undertaking any clearing authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *dieback* and *weeds*:

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

8. Soil Erosion Management

The Permit Holder must ensure that bulk earthworks activities occur within three months of the clearing authorised under this Permit being undertaken.

PART III - RECORD KEEPING AND REPORTING

9. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit, in relation to the clearing of native vegetation authorised under this permit:

- (a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (b) the date that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) the direction of clearing;
- (e) the date clearing activities cease;
- (f) the date bulk earthworks commenced;
- (g) actions taken to avoid, minimise and reduce the impacts and the extent of clearing in accordance with condition 6 of this Permit; and
- (h) actions taken to minimise the introduction and spread of *weeds* and *dieback* in accordance with condition 7 of this Permit.

10. Reporting

The Permit Holder must provide to the *CEO* the records required under condition 9 of this Permit, when requested by the *CEO*.

DEFINITIONS

The following meanings are given to terms used in this Permit:

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

dieback means the effect of *Phytophthora* species on native vegetation;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation; and

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*;
or
- (b) published in a Department of Biodiversity, Conservation and Attractions Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION





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

4 December 2019

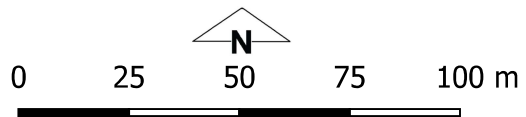
Plan 8594/1




Legend

-  CPS areas approved to clear
-  Land TenureLGate - 226
-  Local Government Authorities
-  Road Centrelines

Image




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Officer delegated under section 20 of the Environmental Protection Act 1986



GOVERNMENT OF WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: 8594/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Cranford Pty Ltd
Application received date: 28 June 2019

1.3. Property details

Property: Lot 500 on Deposited Plan 74198, Brabham
Local Government Authority: City of Swan
Localities: Brabham

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.08		Mechanical Removal	Bulk earthworks prior to residential development.

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 4 December 2019

Reasons for Decision:

The clearing permit application was received on 28 June 2019 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and it has been concluded that the proposed clearing is at variance with principle (f), may be at variance with principle (g), and is not likely to be at variance with the remaining clearing principles.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into nearby vegetation and that the proposed clearing may cause appreciable land degradation in the form of wind erosion. Furthermore, the proposed clearing may impact on a population of western grey kangaroos known to occur within the application area.

To minimise the impact associated with weeds and dieback, a condition has been placed on the permit requiring the implementation of weed and dieback management measures. To minimise the impact of wind erosion, a condition has been placed on the permit requiring development to commence within three months of clearing. To minimise the impact to the population of western grey kangaroos, a condition has been placed on the permit requiring clearing to be undertaken in a slow progressive manner, in a north to south direction, to allow individuals to move away from the clearing activity, and into vegetated area to the south of Lot 500.

Given the above, the Delegated Officer decided to grant a clearing permit subject to dieback and weed management, wind erosion, and fauna management.

2. Site Information

Clearing Description: The application is to clear 1.08 hectares of native vegetation within Lot 500 on Deposited Plan 74198, Brabham, for the purpose of facilitating bulk earthworks prior to residential development (Figure 1).

Vegetation Description: The application area is mapped as Southern River vegetation complex, which is described as open woodland of *Corymbia calophylla* (Marri) - *Eucalyptus marginata* (Jarrah) - *Banksia* species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca raphiophylla* (Swamp Paperbark) along creek beds (Government of Western Australia, 2019).

A flora and vegetation survey of the application area identified two vegetation types occurring within the application area, including VT1 described as *Corymbia calophylla* open woodland over *Xanthorrhoea preissii*, and VT3 described as *Melaleuca* woodland in wetter areas (Strategen-JBS&G, 2019d).

Vegetation Condition: The flora and vegetation survey determined that the application area is in degraded to completely degraded (Keighery, 1994) condition (Strategen-JBS&G, 2019d), described as:

- Degraded: basic vegetation structure severely impacted by regeneration but not to a state approaching good condition without disturbance. Scope for regeneration but not to a state approaching good condition without intensive management (Keighery, 1994); to
- Completely Degraded: the structure of the vegetation is no longer intact and the area is completely or almost completely without native species (Keighery, 1994).

Soil and Landform Type: The application area is mapped as occurring within the following mapped subsystems:

- Bassendean drainage lines Phase: Broad, shallow channels, peaty soils, fringe of *Melaleuca* sp. and *Eucalyptus rudis*; reeds and sedges in central zone (Schoknecht et al., 2004); and
- Bassendean, Jandakot Phase: Jandakot low dunes. Slopes <10 per cent and generally more than 5 metre relief. Grey sand over pale yellow sands generally underlain by humic and iron podsols; *Banksia* sp. low open woodland with a dense shrub layer (Schoknecht et al., 2004).

Comment: The local area considered in the assessment of this application is defined as a 10 kilometre radius measured from the perimeter of the application area. According to available aerial imagery, approximately 20 per cent native vegetation cover is remaining in the local area.

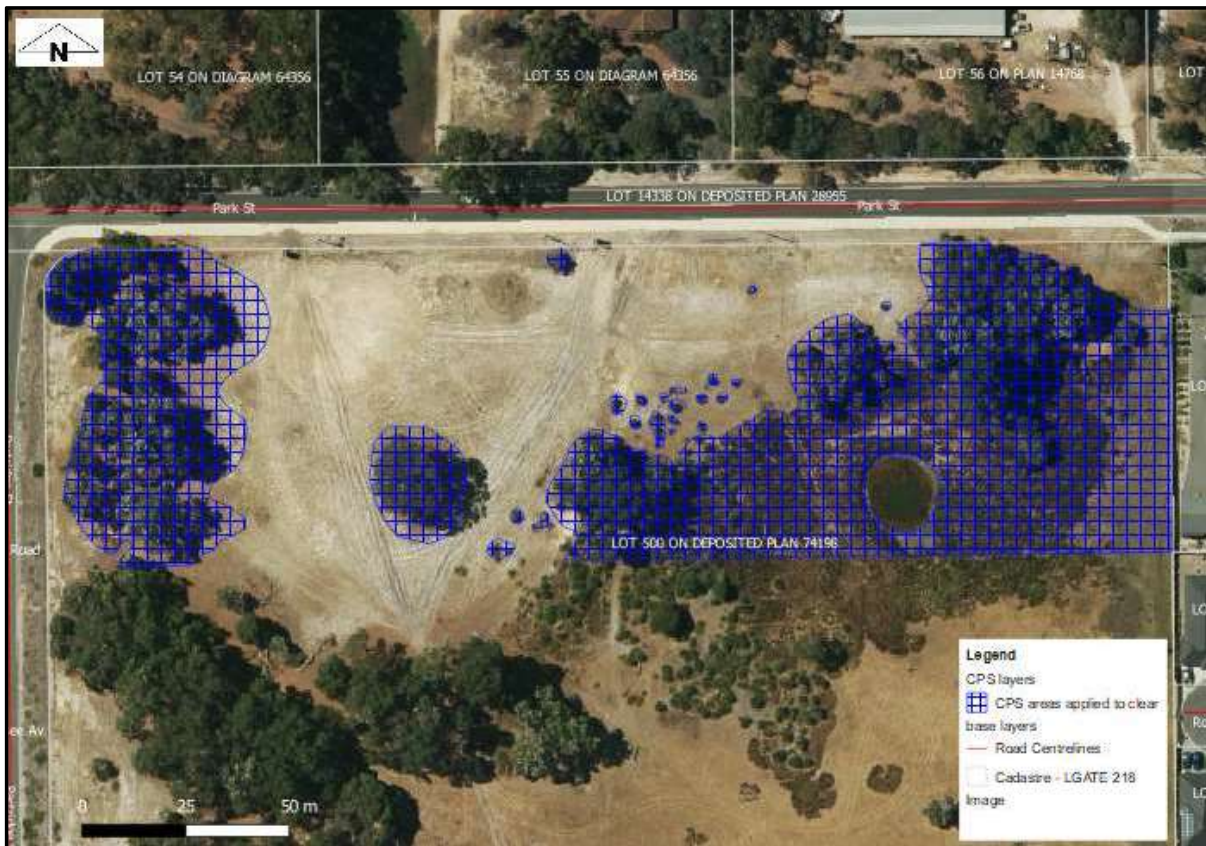


Figure 1. Application area (cross-hatched blue)





Figure 2. Photos of the application area provided by Strategen-JBS&G (Strategen-JBS&G, 2019a)

3. Minimisation and mitigation measures

The applicant has advised that a Construction Environmental Management Plan (CEMP) will be developed for the wider subdivision area that encompasses the entirety of Lot 500 on Deposited Plan 74198 (hereinafter referred to as Lot 500). This CEMP will include the following (Strategen-JBS&G, 2019a; Strategen-JBS&G, 2019e):

- weed and dieback spread mitigation and management;
- strategies for the spotting, trapping, and relocation of fauna;
- details on the reporting requirements and provision of care for injured fauna;
- clearing and access control measures, including that of potential habitat tree;
- tree retention where possible;
- staff inductions regarding fauna management;
- waste and fire management; and
- dust and noise control.

It is noted that the northern portion of Lot 500 (i.e. application area; Figure 1), has been earmarked as Residential Development (R5), and therefore no public open spaces (POS) are proposed within the application area (City of Swan, 2019; Strategen-JBS&G, 2019a; Strategen-JBS&G, 2019e). Given this, all native vegetation within the application area (Figure 1), is proposed to be cleared.

4. Assessment of application against clearing principles

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

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

The native vegetation within the application area is unlikely to comprise a high level of biodiversity, and therefore the proposed clearing is not likely to be at variance with this clearing principle.

The reconnaissance flora and vegetation survey conducted by Strategen-JBS&G (Strategen) on 22 June 2018 recorded two vegetation types occurring within the application area, including VT1 described as *Corymbia calophylla* open woodland over *Xanthorrhoea preissii*, and VT3 described as *Melaleuca* woodland in wetter areas in degraded to completely degraded (Keighery, 1994) condition (Strategen-JBS&G, 2019d).

According to available databases, eight threatened (T) and 46 priority (P) flora species have been previously recorded within the local area (Western Australian Herbarium, 1998-). Of these species, *Stachystemon* sp. Keysbrook (R. Archer 17/11/99) (P1), *Verticordia lindleyi* subsp. *lindleyi* (P4), and *Lepidosperma rostratum* (T) were identified as potentially occurring within the application area, based on the likelihood of preferred habitat within the application area (Strategen-JBS&G, 2019d).

The survey did not record any conservation significant flora species, and given the completely degraded to degraded (Keighery, 1994) condition of the application area, it was determined that the application area is not likely to provide suitable habitat for the abovementioned flora species (Strategen-JBS&G, 2019d).

It is noted that the timing of the survey (June) was not appropriate for the South-West Province, which is ideally surveyed during spring (September-November), following Autumn rainfall (EPA, 2016). However, given the completely degraded to degraded (Keighery, 1994) condition of the vegetation, which is dominated by weed species, it is not expected that a survey conducted in the appropriate time would have resulted in recording a significantly higher flora diversity from within the application area (Strategen-JBS&G, 2019d). In regard to the threatened flora, *Lepidosperma rostratum*, the timing of the survey was not considered to be a limitation, as *Lepidosperma rostratum* flowers during May and June (Department of the Environment and Energy, 2019). Therefore, it is likely that the survey would have recorded this species if it occurred within the application area.

One weed species, cotton bush (*Gomphocarpus fruticosus*), a declared weed under the *Biosecurity and Agriculture Management Act 2007* was recorded during the survey. Care must be taken to ensure that the spread of weeds into nearby vegetated areas is mitigated during the proposed clearing activity.

According to available databases, there are no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) mapped within the application area. The nearest mapped conservation significant ecological community is a PEC listed by the Department of Biodiversity, Conservation and Attractions, known as 'Banksia Woodlands of the Swan Coastal Plain', located immediately south of the application area. At the Commonwealth level, this ecological community is listed as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This ecological community is restricted to areas in and immediately adjacent to the Swan Coastal Plain IBRA bioregion, including the Dandaragan plateau, and has undergone a decline of approximately 60 per cent in its original extent (DotEE, 2016). Almost all that remains of this ecological community occurs as highly fragmented patches less than 10 hectares in size (DotEE, 2016). This ecological community has a dominant *Banksia* component, which includes at least one of four key species; *Banksia attenuata* (candlestick banksia), *Banksia menziesii* (firewood banksia), *Banksia prionotes* (acorn banksia) and/or *Banksia ilicifolia* (hollow-leaved banksia) (DotEE, 2016). The flora and vegetation survey did not record the vegetation within the application area to be representative of this ecological community (Strategen-JBS&G, 2019d).

As discussed in principle (d), according to available databases seven State listed TECs listed under the *Biodiversity Conservation Act 2016* occur within the local area. The survey identified that VT1 showed similarities to the 'Corymbia calophylla - Xanthorrhoea preissii woodlands and shrublands, Swan Coastal Plain' TEC. VT1 has a dominant overstorey of marri trees, consistent with the description of the ecological community in the approved conservation advice (Department of the Environment and Energy, 2017). However, VT1 only has one of the listed dominant shrub species, *Xanthorrhoea preissii*, and none of the dominant herb species. Given this, and the degraded (Keighery, 1994) condition of VT1, it has been determined that the application area is not representative of any State listed TECs (Strategen-JBS&G, 2019d).

As assessed under principle (b), the application area is not likely to support ground dwelling fauna species due to the lack of native understorey vegetation however is known to support a population of western grey kangaroos (*Macropus fuliginosus*). The application area may provide foraging opportunities for the Carnaby's cockatoo (*Calyptorhynchus latirostris*), Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksia naso*) and Baudin's cockatoo (*Calyptorhynchus baudinii*), in the form of mature marri nuts. The application area lacks key food species (e.g. *Banksia* sp.) for black cockatoos in the Swan Coastal Plain.

Based on the above, it is not likely that the vegetation within the application area represents a high level of biodiversity in a local context and therefore is not likely to be at variance with this 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.

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

Noting the lack of dense native understorey vegetation, the application area is not likely to comprise, or is necessary for the maintenance of significant habitat for ground dwelling fauna species. The application area may provide some foraging opportunities for threatened black cockatoo species, however noting the lack of key food species, it is not likely to be significant as a food source within the local area.

According to available databases, eight threatened fauna species, two fauna species of special conservation interest, one specially protected fauna species, eight fauna species protected under international agreement, one Priority 2, four Priority 3 and seven Priority 4 fauna species, have been recorded within the local area (Department of Biodiversity Conservation and Attractions, 2007-). Of these species, it was determined that three threatened black cockatoo species, Forest Red-tailed Black cockatoo (*Calyptorhynchus banksii* subsp. *naso*; Vulnerable), Baudin's cockatoo (*Calyptorhynchus baudinii*; Endangered) and Carnaby's cockatoo (*Calyptorhynchus latirostris*; Endangered) (collectively known as black cockatoos), has the potential to occur within the application area (Strategen-JBS&G, 2019c). During the 2018 flora and vegetation survey, a Forest Red-tailed Black cockatoo was observed feeding within Lot 500 (Strategen-JBS&G, 2019d).

According to available databases, the application area is located outside of the mapped confirmed breeding area for Carnaby's cockatoo. Suitable breeding habitat for black cockatoos includes trees which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, including marri trees, a suitable DBH is 500 millimetres (Commonwealth of Australia, 2012). A black cockatoo habitat assessment was conducted over the entirety of Lot 500 in March 2019. The habitat assessment recorded 89 potential habitat trees (DBH of 500 millimetres or greater), of which 12 are located within the application area (Strategen-JBS&G, 2019c; Strategen-JBS&G, 2019e). All potential habitat trees recorded within the application area are marri trees. One of the 12 trees within the application area contains a hollow, however the size of this hollow (approximately 5 centimetres wide) is too small to be considered as being suitable for nesting by black cockatoos (Strategen-JBS&G, 2019c; Strategen-JBS&G, 2019e). Given the above, the application area is not likely to provide suitable breeding habitat for black cockatoos.

Foraging habitat for black cockatoos within 7 kilometres of a breeding site is important to adequately support breeding pairs, and individual night roosting sites need food and water within 6 kilometres (EPA, 2019). Overlapping foraging ranges within 12

kilometres also support roosting sites and maintain habitat connectivity and movement across the landscape (EPA, 2019). The black cockatoo habitat assessment determined approximately 0.314 hectares of the application area as being suitable foraging habitat for black cockatoos, with evidence of foraging recorded within the application area (old chewed marri nuts likely to be from both Carnaby's cockatoo and Forest Red-tailed Black Cockatoos) (Strategen-JBS&G, 2019c). The foraging habitat within the application area is rated as being low to moderate quality, as it is comprised of mature marri trees only, and the other key food species such as *Banksia* sp. for Carnaby's cockatoos are lacking (Strategen-JBS&G, 2019c).

As mentioned above, the application area is not located within the mapped confirmed breeding area for Carnaby's cockatoo, and according to available databases, there are no confirmed breeding points within the local area. The nearest confirmed breeding point is approximately 20 kilometres away. Given this, the application area is not likely to provide significant foraging habitat for black cockatoos breeding.

According to available databases, there are numerous confirmed roosting sites for black cockatoos that occur within the local area. Within a 6 kilometre radius of the application area, there are four confirmed roosting sites. Of these confirmed roosting sites, only one, located approximately 3 kilometres from the application area, does not occur within a conservation area. The remaining confirmed roost sites are located within the nearby Bush Forever (304) site, and one is located within the Gngangara-Moore River State Forest (F 65). The foraging habitat within the application area may provide some food to support roosting black cockatoos. However, based on the quality of the foraging habitat and the location of the confirmed roosting sites, it is likely that black cockatoos only utilise the application area intermittently, and therefore the proposed clearing is not considered to significantly impact on the availability of food source.

It is also noted that the application area supports a population of western grey kangaroos (*Macropus fuliginosus*). In regard to the proposed clearing, directional clearing could be used to mitigate displacing these kangaroos into residential areas. The permit will be conditioned to ensure that directional clearing is undertaken from the north towards the south of the application area, encouraging the kangaroos towards the southern portion of Lot 500. The southern portion of Lot 500 contains a water source (dam), vegetation in better condition than the application area, and is likely to continue supporting this population. The applicant has advised that a Kangaroo Relocation Management Plan (KRMP) is being developed in consultation with the Department of Biodiversity, Conservation and Attractions (DBCA) and project zoologists for the development of the whole of Lot 500 (Strategen-JBS&G, 2019a). To minimise the potential impact of the proposed clearing, the applicant has advised that a fence will be erected around the site to prevent uncontrolled vehicle access to the site and prevent public and kangaroo interactions (Strategen-JBS&G, 2019a).

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

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

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

The application area is not likely to comprise, or is necessary for the continued existence of threatened flora. The flora and vegetation survey conducted over the application area did not record any threatened flora (Strategen-JBS&G, 2019d).

According to available databases, eight threatened flora species have been recorded in the local area (Western Australian Herbarium, 1998–). The closest record is of *Caladenia huegelii*, located approximately 4,330 metres from the application area (Western Australian Herbarium, 1998–). Based on the vegetation types recorded during the survey, the soil type mapped over the application area, and that the application area occurs within a multiple use palusplain; it was determined that the application area is unlikely to contain suitable habitat for *Caladenia huegelii* (Strategen-JBS&G, 2019d). *Caladenia huegelii* is generally known from areas of well-drained Bassendean sand-dune systems and mixed *Banksia* sp. and jarrah (*Eucalyptus marginata*) woodlands (Department of Environment and Conservation, 2009).

As discussed in principle (a), one threatened flora species, *Lepidosperma rostratum*, was considered as possibly occurring within the application area, based on the presence of preferred soil type and habitat within the application area (Strategen-JBS&G, 2019d). *Lepidosperma rostratum* is known to occur in peaty sand or clay within seasonally wet swamps (Western Australian Herbarium, 1998–). Although it is noted that the survey was not conducted at an appropriate time for the South-West Province, it was conducted during an appropriate time for *Lepidosperma rostratum*, which flowers during May to June (Department of the Environment and Energy, 2019), and therefore is likely to have been recorded if it occurred within the application area.

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

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

According to available databases there are no State listed TECs mapped within the application area, however seven State listed TECs have been mapped within the local area, including:

- *Banksia attenuata* woodlands over species rich dense shrublands;
- *Corymbia calophylla* - *Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain;
- Shrublands and woodlands on Muchea Limestone;
- Herb rich shrublands in clay pans;
- *Banksia attenuata* and/or *Eucalyptus marginata* woodlands of the eastern side of the Swan Coastal Plain;
- Shrublands and woodlands of the eastern side of the Swan Coastal Plain; and
- *Corymbia calophylla* - *Kingia australis* woodlands on heavy soils, Swan Coastal Plain.

As discussed under principle (a), the survey identified that VT1 shows similarities to the 'Corymbia calophylla - Xanthorrhoea preissii woodlands and shrublands, Swan Coastal Plain' TEC. This TEC includes an overstorey dominated by *Corymbia calophylla* (marri), and occasionally *Eucalyptus wandoo* (wandoo); shrubs layer dominated by *Xanthorrhoea preissii*, *Acacia pulchella*, *Banksia dallanneyi*, *Gompholobium marginatum*, and *Hypocalymma angustifolium*; and herbs layer of *Burchardia congesta*, *Cyathochaeta avenacea* and *Neurachne alopecuroidea*. The introduced species *Briza maxima* and *Hypochaeris glabra* are also common, but weed levels in most occurrences are generally quite low (Department of the Environment and Energy, 2017).

VT1 has a dominant overstorey of marri trees, consistent with the description of the TEC in the approved conservation advice (Department of the Environment and Energy, 2017). However, VT1 only has one of the listed dominant shrubs, *Xanthorrhoea preissii*, and none of the dominant herbs listed within the approved conservation advice. Given the degraded (Keighery, 1994) condition of VT1 and lack of understorey diversity, it has been determined that it is not representative of any State listed TECs (Strategen-JBS&G, 2019d)

The survey did not record any vegetation types to be representative of any other State listed TECs (Strategen-JBS&G, 2019d).

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

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

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750. When an ecological community is cleared below this target, species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

In the Perth Metropolitan and Bunbury regions, the Environmental Protection Authority (EPA) has a modified objective to retain at least 10 per cent of the pre-clearing extent of vegetation complexes for defined constrained areas (intensely developed) (EPA, 2015; EPA, 2003; Government of Western Australia, 2000).

The application area is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, which retains approximately 38 per cent of its pre-European vegetation extent (Government of Western Australia, 2019). The mapped Swan Coastal Plain 'Southern River' vegetation complex retains approximately 18 per cent of its pre-European vegetation extent within the bioregion (Government of Western Australia, 2019). Based on available aerial imagery, the local area retains approximately 20 per cent native vegetation cover.

Whilst the application area is located within an extensively cleared landscape, noting that the application area does not contain conservation significant flora, fauna or communities, the proposed clearing is not considered a significant remnant. Furthermore, the application area is located within a constrained area, and all the abovementioned remnant vegetation extents are above the 10 per cent threshold.

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

Table 1: Vegetation statistics.

	Pre-European extent (ha)	Current extent (ha)	% remaining	Current extent in all DBCA managed land (ha)	% Current Extent in all DBCA managed land (proportion of Pre-European extent)
IBRA Bioregion:					
Swan Coastal Plain	1,501,221	579,813	38.62	222,916	14.85
South Coastal Plain vegetation complex:					
Southern River Complex	58,781	10,832	18.43	940	1.6

(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 at variance with this Principle

According to available databases, no watercourses intersect the application area. The closest watercourse to the application area is the Swan River, located approximately 3 kilometres east of the application area. The application area is located within a multiple use palusplain, with the wetland covering an area of 760 hectares. Multiple use category wetlands are wetlands with few important ecological attributes and functions remaining (Water and Rivers Commission, 2001).

The application area contains a *Melaleuca* woodland growing in association with the abovementioned wetland. Approximately one third of the mapped multiple use palusplain has undergone residential developments. Given the scope of works, the size of the application area and the existing land use, it is unlikely that the proposed clearing will cause any unacceptable environmental impacts to this larger mapped wetland occurrence.

Based on the above, the proposed clearing is at variance with this principle.

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

Proposed clearing may be at variance with this Principle

Based on the mapped soil units of the application area, the proposed clearing may cause land degradation in the form of wind erosion. Approximately one-third of the application area is within the mapped Bassendean drainage lines Phase, and approximately two-thirds is within the mapped Bassendean, Jandakot Phase (Schoknecht et al., 2004).

Land degradation risk mapping indicates that the mapped Bassendean drainage lines Phase has a high risk of waterlogging, flooding and water erosion; and the mapped Bassendean, Jandakot Phase has a high risk of wind erosion (Department of Primary Industries and Regional Development, 2018). Noting the extent of the proposed clearing is within a completely degraded to degraded condition, and that the application is surrounded by residential development, the proposed clearing is not likely to cause appreciable land degradation in the form of water erosion, flooding or waterlogging. However, the application area may potentially be impacted by wind erosion if clearing is not managed appropriately. The potential impacts of wind erosion may be mitigated by the implementation of a staged clearing condition.

Based on the above, the proposed clearing may be at variance with this 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.

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

The application area is not located within any conservation areas, however there are numerous conservation areas within the local area. The nearest conservation area is a Bush Forever Site (304) located approximately 690 metres west of the application area. This Bush Forever Site (304) is separated from the application area by residential development.

Given the distance between these conservation areas and the application area, the proposed clearing is not likely to have an impact on the environmental values of any conservation areas.

Given the above, the proposed clearing is not likely to be at variance with this 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.

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

The proposed clearing is not likely to deteriorate the quality of groundwater or surface water.

Groundwater salinity within the application area is mapped 500-1,000 total dissolved solids, milligrams per litre, which is classified as 'fresh'. As discussed in principle (f), the application area is located within a multiple use palusplain, of which approximately one third of the mapped palusplain has already undergone residential development.

Noting the extent of the proposed clearing is within a completely degraded to degraded condition, and that the application is surrounded by residential development, the proposed clearing is not likely to deteriorate the quality of groundwater or surface water.

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

(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 with this Principle

As discussed in principle (g), approximately one-third of the application area is within the mapped Bassendean drainage lines Phase, and approximately two-thirds is within the mapped Bassendean, Jandakot Phase (Schoknecht et al., 2004).

The mapped Bassendean drainage lines Phase has a high risk of waterlogging and flooding, and the Bassendean, Jandakot Phase has a relatively low risk of waterlogging and flooding (Schoknecht et al., 2004).

The south-eastern portion of the application area may experience localised temporary flooding and waterlogging following significant rainfall events. However, noting the proposed clearing is within a completely degraded to degraded condition, and that two-thirds of the application area has a relatively low risk of flooding and waterlogging, the proposed clearing is not likely to cause or exacerbate, the incidence or intensity of flooding.

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

Planning instruments and other relevant matters.

The clearing permit application was advertised on the Department of Water and Environmental Regulation's website on 3 August 2019 with a 21 day submission period. No public submissions have been received in relation to this application.

No Aboriginal sites of significance have been mapped within the application area.

The EPA's modified objective to retain at least 10 per cent of the pre-clearing extent of vegetation complexes for defined constrained areas within the Perth Metropolitan and Bunbury regions was considered in assessing Principle (e) (EPA, 2008; EPA, 2015; Government of Western Australia, 2000).

The proposed action of clearing native vegetation and residential development for the whole of Lot 500 was referred to the Department of the Environment and Energy (DotEE) under the EPBC Act. The DotEE determined the proposed action is not a controlled action on 13 August 2019.

The application area only covers the most northern portion of Lot 500. The applicant has advised that the proposed clearing is required for bulk earthworks prior to future subdivision approval, to ready the land for immediate development in accordance with the subsequent subdivision determination processes. It is also noted that the bulk earthworks is required to ensure a continuity of lot supply for Cedar Woods Properties' (wholly owns Cranford) existing Ariella Estate, which is currently in its final stage of construction (Strategen-JBS&G, 2019a).

The City of Swan advised that the Western Australian Planning Commission (WAPC) has approved a Local Structure Plan (SP-27) over the application area, which earmarks the entire application area for Residential Development (R5) (City of Swan, 2019). Therefore, if the native vegetation is required to be cleared as part of a proposal for residential development, it would be consistent with the aforementioned local structure plan. It is noted that an amendment to SP-27 has been proposed and is currently with the WAPC for final endorsement, however this proposed amendment does not modify the amount of clearing required. It is noted that no public open spaces have been planned within the application area.

The applicant advised that a Development Approval (DA) for the proposed bulk earthworks was approved by the City of Swan on 2 October 2019, subject to erosion and construction management conditions (Strategen-JBS&G, 2019b).

5. References

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- Strategen-JBS&G (2019a). Additional information provided in response to a letter requesting further information for Clearing Permit application CPS 8594/1 received 28 October 2019 (DWER Ref: A1836706)
- Strategen-JBS&G (2019b). Additional information provided in relation to Clearing Permit application CPS 8594/1 received 3 October 2019 (DWER Ref: A1844850).
- Strategen-JBS&G (2019c). Lot 500 Park Street, Brabham: Black Cockatoo Habitat Assessment. Report for Cedar Woods, prepared by Strategen Environmental, Western Australia, April 2019 (DWER Ref: A1836706).
- Strategen-JBS&G (2019d). Lot 500 Park Street, Brabham Flora and Vegetation Reconnaissance Survey. Report for Cedar Woods Properties, prepared by Strategen-JBS&G, Western Australia, October 2019 (DWER Ref: A1836706).
- Strategen-JBS&G (2019e). Part of Lot 500 Park Street, Brabham Native Vegetation Clearing Permit Application – Supporting Documentation. Report for Cranford Pty Ltd prepared by Strategen-JBS&G, Western Australia, June 2019 (DWER Ref: DWERDT173994).
- Water and Rivers Commission (2001). Position Statement: Wetlands, Water and Rivers Commission, Perth.
- Western Australian Herbarium (1998-). FloraBase-the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (accessed September 2019).

GIS Databases:

- Aboriginal Sites of Significance
- DBCA Managed Estate
- Directory of Important Wetlands
- Geomorphic Wetlands Swan Coastal Plain
- Groundwater salinity
- Hydrography, hierarchy
- Hydrography, linear
- Land Degradation datasets
- SAC Bio Datasets
- Soils, Statewide
- Topographic contours
- Vegetation Complexes Swan Coastal Plain