GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8466/1
Permit Holder:	Department of Education
Duration of Permit:	From 21 November 2019 to 21 November 2024

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 constructing a school.

2. Land on which clearing is to be done
Lot 9766 on Plan 11718, Yanchep

3. Area of Clearing
The Permit Holder must not clear more than 2.19 hectares of native vegetation within the area hatched yellow on attached Plan 8466/1.

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. 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.

6. Weed control
When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:
(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
(b) ensure that no *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.

PART III - RECORD KEEPING AND REPORTING

7. Records must 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 species composition, structure and density of the cleared area;
(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
(c) the date that the area was cleared;
(d) the size of the area cleared (in hectares);
(e) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 5 of this Permit; and
(f) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with condition 6 of this Permit.

8. Reporting

The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:

(a) of records required under condition 7 (records to be kept) of this Permit;
(b) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year;
(c) if no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year; and
(d) prior to 21 August 2024, the Permit Holder must provide to the CEO a written report of records required under condition 7 of this Permit where these records have not already been provided under condition 8(a) of this Permit.

DEFINITIONS

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

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;

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 Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
(c) not indigenous to the area concerned.

Ryan Mincham
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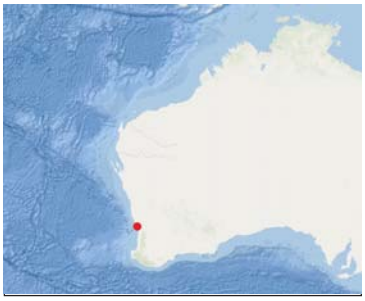
Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

22 October 2019

Government of Western Australia
Department of Water and Environmental Regulation

Plan 8466/1



Legend

- CPS areas approved to clear
- Land Tenure (LGATE_226) - SLII
- Local Government Authorities
- Roads - State Roads
- Roads - Major Roads
- Roads - Minor Roads

1:7,247

Notes

Ryan Mincham
2019.10.22
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Officer delegated under section 20 of the Environmental Protection Act 1986

0.2 0 0.09 0.2 Kilometers

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Author:

Recipient:

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8466/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Department of Education
Application received date: 16 April 2019

1.3. Property details

Property: Lot 9766 on Plan 11718, Yanchep
Local Government Authority: City of Wanneroo
Localities: Yanchep

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
2.19		Mechanical Removal	Building or structure (School)

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 22 October 2019
Reasons for Decision: The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing is not likely to be at variance to any of the clearing principles.

In determining to grant a clearing permit subject to conditions, the Delegated Officer considered that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description

The application is for the proposed clearing of 2.19 hectares of native vegetation within Lot 9766 on Plan 11718, Yanchep, for the purpose of constructing the Sunningdale Primary School (Figure 1-5).

Vegetation Description

The application area is mapped in the 'Swan Coastal Plain' region of the Interim Biogeographic Regionalisation for Australia (IBRA), and is mapped in the following Swan Coastal Plain vegetation complexes (Heddle et al., 1980):

- Quindalup Complex: Coastal dune complex – low closed forest and closed scrub

A reconnaissance flora and vegetation survey undertaken on March 2019 by Emerge Associates described the vegetation within the application area as including two vegetation types:

1. Plant community BaXpCq includes the highest quality vegetation in the site and was most similar to 'floristic community type' (FCT) 24 'Northern Spearwood shrublands and woodlands' and FCT 28 – Spearwood *Banksia attenuata* or *Banksia attenuata* – Eucalyptus woodlands'.
2. Plant community LI is highly disturbed and consists of a closed tall shrubland of **Leptospermum laevigatum* over weeds and scattered native species that is too degraded to assign to an FCT.

A total of 36 native and 22 non-native (weed) species were recorded in the site, two species recorded (**Schinus terebinthifolius* and *Macrozamia riedlei*) are listed as poisonous within the Primary School Brief (BMW 2018; Emerge Associates, 2019).

Vegetation Condition

The condition of the vegetation within the application area is considered to be:

- Very good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994) To
- Completely degraded: The structure of vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs (Keighery, 1994).

The condition of the vegetation was determined based on the reconnaissance flora and vegetation survey undertaken in March 2019 (Emerge Associates, 2019).

A site inspection of the application area undertaken by DWER Officers noted that better condition vegetation was more likely to be in good (Keighery, 1994) condition than very good (Keighery, 1994) condition (DWER, 2019).

Soil type

The application area is mapped as the following land subsystems:

- B24 which is described as an undulating dune landscape underlain by aeolianite which is frequently exposed with small swales of estuarine deposits. Chief soils are siliceous sands (Uc1.22) with smaller areas of brown sands (Uc4.22) and leached sands (Uc2.21) in the wetter sites. Associated are various (Uc), (Um), (Uf), (Ug), and acid peat (O) soils in the swales, similar to unit Kf10.

Comments

The local area is considered a 10 kilometre radius of the application area.

The vegetation and flora survey was undertaken in March 2019. The timing of the survey was outside of the main flowering season for most flora likely to occur within the application area and it is likely that some plant species would not have been visible at the time of survey. While the survey results are adequate for a reconnaissance survey additional spring surveys would more accurately reflect the vegetation and flora of the site.

Figure 1 - Application area cross hatched blue

Figure 2 - Vegetation mapping of Lot 9766 (Emerge Associates, 2019)

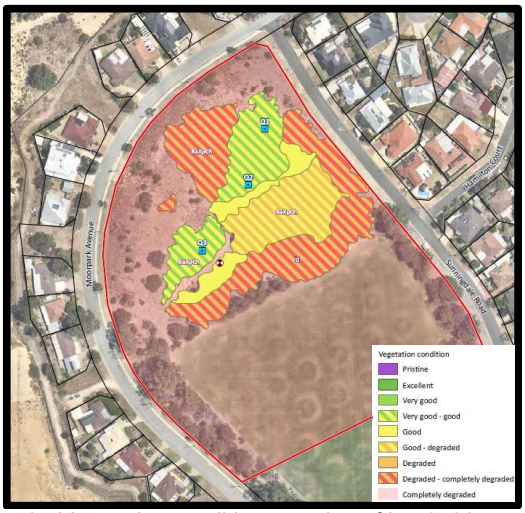

Figure 3 - Vegetation condition mapping of Lot 9766 (Emerge Associates, 2019)

Figure 4 - Plant community BaXpCq in very good to good condition (Emerge Associates, 2019)

Figure 5 - Plant community LI in degraded to completely degraded condition (Emerge Associates, 2019)

3. Minimisation and mitigation measures

The application is for the proposed clearing of up to 2.19 hectares of native vegetation within Lot 9766 on Plan 11718, Yanchep, for the purpose of constructing the Sunningdale Primary School (Figure 1-5). The school site is located in a 4.04 hectare site which includes approximately 2.82 hectares of non-native vegetation.

The applicant has advised:
"As part of development, the entire construction area will be secured with fencing to ensure that construction is limited to the development footprint. This will ensure that vegetation outside of the construction area will be protected from any construction activities. Additionally, any vegetation located within, or in close proximity to, the construction area that is identified for retention will be fenced off within tree protections zones (TPZs) excluding this vegetation from the construction footprint. As identified in the clearing permit application, the majority of vegetation within the construction area is in degraded – completely degraded condition and doesn't represent significant environmental values, however trees in good health will be opportunistically retained."

And that:
"The current layout allows for the retention of the more significant trees located to the south east and south west of the site, including the retention of a pocket of trees located within the construction area, to the north of the existing oval. Moving the buildings further south will entail the loss of this vegetation, including the potential black cockatoo breeding habitat trees that are currently located outside of the construction area. In addition, shifting the buildings further south will move the construction footprint onto the oval, reducing the availability of space for the soccer club that currently uses the oval, making it unavailable for soccer games and removing a community facility currently maintained by the CoW. Furthermore, the lot has been reserved for a primary school site since 1976, and the construction of the school is in accordance with this reservation."

4. Assessment of application against clearing principles and planning instruments and other matters

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

The native vegetation within the application area is unlikely to comprise a high level of biological diversity and is not likely to be at variance to this clearing principle.

Twenty three flora species listed as Priority by the Department of Biodiversity Conservation and Attractions (DBCA) have been recorded within the local area. A flora survey identified one threatened flora and 16 priority flora as having the potential to occur within the site (Emerge Associates, 2019). The flora survey identified three significant flora species within the application area; *Conostylis pauciflora subsp. pauciflora* (P4), *Conospermum triplinervium* and *Lechenaultia linarioides*. All significant flora were recorded within the northern half of the site. All three of these species are listed in the Bush Forever significant flora document as being poorly reserved (Government of WA 2000b). Clearing of the application area is not likely to impact the conservation status of these priority species and given the patch isolation of these populations they are not considered to be viable for long term conservation.

It is noted from the reconnaissance survey that:

> *"Despite the timing of the survey outside of the main flowering season, it is not considered likely that additional threatened and priority flora species occur within the site. The absence of the larger perennial species such as Eucalyptus argutifolia and Lasiopetalum membranaceum was relatively easy to confirm, particularly given the small area of remnant vegetation. Perennial geophytic species known to occur within the wider local area (such as Drakaea elastica and Diuris purdiei) would not have been visible at the time of the survey due to their life history. However, these species are not considered likely to occur within the site based on their preference for lower, winter wet habitats (as described in Table 1). The majority of threatened and priority flora species likely to occur within the site are perennial species that would have been detectible at the time of the survey.*
>
> *Two annual species are known to occur within the wider local area (Haloragis sp. Parrot Ridge and Calandrinia oraria (P1)). Haloragis sp. Parrot Ridge has a highly limited distribution and is known to occur approximately 9 ha to 10 ha north east of the site on a ridgeline with considerable levels of limestone outcropping (Government of Western Australia 2019).*

Calandrinia oraria has been recorded occurring on the secondary Quindalup dunes close to the coast between Port Kennedy in the south to Leeman in the north (Government of Western Australia 2019). The vegetation within the site is more characteristic of the Spearwood dune system to the east of the Quindalup dunes. As such, neither of these species is considered likely to occur within the site." (Emerge Associates, 2019).

A site inspection of the vegetation within the application area by DWER Officers did not identify any limestone ridges or Quindalup dunes (DWER, 2019) and therefore concurs that it is unlikely that either *Haloragis sp. Parrot Ridge* or *Calandrinia oraria* would occur within the application area.

As assessed within Principle (b), the application area includes three potential black cockatoo habitat trees (without hollows) and 1.34 hectares of foraging habitat for black cockatoos. Of the 1.34 hectares, approximately 0.84 hectares is considered to be good quality native vegetation foraging habitat for Carnaby's black cockatoos and approximately 0.84 hectares is considered to be low quality native vegetation foraging habitat for forest-red tailed black cockatoos (Emerge Associates, 2019). Impacts to black cockatoos would be a reduction in available foraging habitat in the local area, however, when considered in isolation, clearing of this vegetation is not likely to have a significant impact. The cumulative impact of foraging habitat loss is a known issue for cockatoos, particularly the loss of Banksia woodland on the Swan Coastal Plain for Carnaby's cockatoo. The application area is small in relation to the large extent of foraging habitat in the nearby Yanchep National Park. The clearing of the application area is unlikely to significantly impact cockatoos to the extent that it would impact the conservation of the species. However, ongoing cumulative loss of foraging habitat may impact the population to the extent that the species meet eligibility for listing at a higher conservation status in the future (i.e. critically endangered).

The site lies within the 12 km buffer of a confirmed Carnaby's cockatoo breeding site which is likely associated with Yanchep National Park (DEC 2011a). No evidence of roosting or historical roosting activity was observed within the application area. The closest known roosting locations are located approximately 2 km and 4 km east of the site within Yanchep National Park, as well as 2.7 km south-west of the site, within Blenny Park (Emerge Associates, 2019). Of the estimated 19,988 hectares of native vegetation remaining within 10 kilometres of the application area, approximately 19,168 hectares is mapped as being suitable habitat for black cockatoos (or 95.9 per cent of local native vegetation). The suitable foraging habitat (1.34 hectares) represents 0.007 per cent of the available foraging habitat within the local area. A site inspection undertaken by DWER officers noted that the quality of the foraging resource for black cockatoos was low. Advice from the Department of Biodiversity, Conservation and Attractions concurred (DBCA, 2019). Given the low quality of the foraging resource and the extent of better quality foraging resource within Yanchep National Park, it is not likely that clearing of native vegetation within the application area will contribute significantly to the cumulative loss of valuable foraging habitat on the Swan Coastal Plain for black cockatoos.

A reconnaissance vegetation survey of the application area identified that the native vegetation mapped as type BaXpCq showed high similarities to two Floristic Community Types (FCTs) being FCT 24 an FCT 28. The survey also noted that due to the presence of *Banksia attenuatta* on deep sands the BaXpCq vegetation type is likely to represent the 'banksia dominated woodlands of the Swan Coastal Plain IBRA region' priority ecological community (PEC, P3). Approximately 0.41 hectares of the application area is considered to represent the PEC (Emerge Associates, 2019). It is not likely that clearing of native vegetation within the application area will contribute significantly to the cumulative loss of this PEC on the Swan Coastal Plain given the extent of the PEC in conservation tenure.

Given the above, it is unlikely that the vegetation within the application area represents a high level of biological diversity in a local context and therefore is not likely to be at variance to this clearing 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 indigenous to Western Australia.

Proposed clearing not likely to be at variance to this Principle

Native vegetation within the application area comprises habitat for fauna indigenous to Western Australia as it mapped as having 0.84 hectares of good quality foraging habitat for Carnaby's black cockatoo, 0.84 hectares of low quality foraging habitat for forest-red tailed black cockatoos and three potential habitat trees suitable for breeding by threatened black cockatoos (Emerge Associates, 2019). A site inspection by DWER officers noted that the eastern side of the application area is predominately introduced tea tree (*Leptospermum laevigatum*) and that the southern side was predominately Peppermint trees (*Agonis flexusoa*) with occasional Eucalypts on the south western corner. DWER Officers observed that the Banksia area identified by Emerge Associates (2019) in the centre of the application area appeared to be smaller than mapped and consisted of at most 10 Banksia trees with little to no native understory (DWER, 2019). Based on the quality of the habitat observed by DWER officers the proposed clearing is not likely to be at variance to this principle.

A Level 1 fauna survey identified 400 fauna species (native and non-native) as having potential to occur within the site or wider local area including 34 threatened, 19 other special protected and 12 priority fauna species (Emerge Associates, 2019). During a reconnaissance survey 11 native and 1 non-native fauna species were recorded within the survey area. Of these 11 were birds (including Carnaby's black cockatoo) and one was a mammal (kangaroo) (Emerge Associates, 2019).

A survey of the fauna habitats within the survey area identified approximately 1.34 hectares of potential black cockatoo foraging habitat comprising *Banskia* spp., *Eucalyptus gomphocephala*, *Agonis flexuosa*, *Allocasuarina* spp. and non-native eucalypt trees. Carnaby's cockatoos were observed foraging on *Allocasuarina* spp. trees within the site during the reconnaissance survey (Emerge Associates, 2019). The extent of native vegetation in good or better condition accounts for approximately 0.84 hectares of this habitat. Of the estimated 19,988 hectares of native vegetation remaining within 10 kilometres of the application area, approximately 19,168 hectares is mapped as being suitable habitat for black cockatoos (or 95.9 per cent of local native vegetation). The suitable foraging habitat (1.34 hectares) represents 0.007 per cent of the available foraging habitat within the local area). A site inspection by DWER Officers noted that the area of Banksia habitat appeared smaller on ground than was

mapped and in good (Keighery, 1994) condition rather than very good (Keighery, 1994) condition as mapped by Emerge Associates (2019).

Based on the available suitable habitat, the survey noted that five conservation significant species were considered to have potential to occur within the application area including Carnaby's cockatoo, forest red-tailed black cockatoo, black-stripe snake, quenda and grey wagtail. The site is outside of the expected distribution range of Baudin's cockatoo and the species is therefore considered unlikely to occur within the site although some potentially suitable foraging and roosting habitat is present (Emerge Associates, 2019).

Additional information provided in relation to the significance of the vegetation for fauna states that:
"Fauna habitat values within the site are generally limited. Habitat value is greatest with respect to banksia woodland, as well as, scattered native trees within the site that likely provide value to a range of native species including some that are conservation significant, such as species of black cockatoo. However, the extent of banksia woodland vegetation within the site is relatively small (0.84 ha, 20% of the site). For the majority of the site, habitat values are compromised by the removal of native vegetation and historical degradation. The site now primarily provides habitat that is suitable for common and widespread species with nonspecific habitat requirements." (Emerge Associates, 2019)

The proposed clearing includes 0.84 hectares of good or better condition native vegetation that is suitable foraging habitat for Carnaby's black cockatoo (good quality) and forest red-tailed black cockatoos (low quality) however the vegetation patch is isolated from a much larger remnant of suitable habitat within the Yanchep National Park. A site inspection by DWER officers noted that the quality of black cockatoo foraging habitat was likely to be very low quality and small (DWER, 2019). Advice from DBCA concurred that the vegetation within the application area is not likely to be significant as habitat for black cockatoos.

Based on the evidence above the proposed clearing is not likely to significantly impact on foraging habitat for black cockatoos and is not likely to be at variance to this clearing principle.

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

Proposed clearing not likely to be at variance to this Principle
No threatened flora were recorded within the native vegetation proposed to be cleared during a reconnaissance flora survey undertaken in March 2019 (Emerge Associates, 2019). This survey was undertaken outside of the optimal time and the results are not conclusive, however, given the only likely threatened flora to occur within the application area flowers in March to April the survey is considered to be adequate in this instance. Therefore, the proposed clearing is not likely to be at variance to this principle.

Nine threatened flora species have been recorded in the local area or are likely to occur within the local area. The application area is considered to have habitat suitable for one of these species being; *Eucalyptus argutifolia* (Emerge Associates, 2019).

E. argutifolia is a tall mallee tree growing from 1.5 to 4 meters high with smooth bark. This species is known to occur in shallow soils over limestone usually on slopes or gullies of limestone ridges and outcrops. It produces a white flower around March to April and is known from 42 records from Wanneroo to Mandurah. The application area is within the known range extent for this species and the closest known population is mapped 1.7 kilometres south west of the application area, however, the description of this record location places it approximately 6.7 kilometres north east of the application area within Yanchep State Forest.

Based on the information above, the proposed clearing is not likely have an environmental impact on native vegetation which includes, or is necessary for the continued existence of, rare flora. Given the above, the proposed clearing is not likely be at variance to this clearing 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 to this Principle
A survey of native vegetation within the application area indicated that vegetation type BaXpCq could represent the Federally listed Banksia woodlands threatened ecological community (TEC) but that a spring survey was likely to provide more conclusive information (Emerge Associates, 2019). No state listed TEC's are known from the local area (10km radius) and the vegetation within the application area is not likely to be consistent with any known state listed TEC. Based on the above information, the proposed clearing is not likely to be at variance to this clearing principle.

As assessed under clearing principles (a), a reconnaissance vegetation survey of the application area identified that the native vegetation mapped as type BaXpCq showed high similarities to two Floristic Community Types (FCTs) being FCT 24 an FCT 28. The survey also noted that due to the presence of *Banksia attenuate* on deep sands the BaXpCq vegetation type is likely to represent the 'banksia dominated woodlands of the Swan Coastal Plain IBRA region' priority ecological community (PEC, P3). However the survey report notes that:

> *"With respect to the FCT present, the results of the analysis were not clear. This is likely due to the timing of the survey outside of the main flowering period coupled with high level of historical disturbance, loss of native species and weed invasion. The Gibson et al. (1994) dataset is comprised of data from survey locations that were sampled multiple times over the same spring and thus include annual species that are only present between late winter and early summer. There are also some additional limitations inherent in the use of the Gibson et al. (1994) dataset, as discussed in Table 4. As a result of these limitations statistical comparisons between the site data and the Gibson et al. (1994) dataset have not provided a definitive result.*
>
> *Nonetheless, the samples from the BaXpCq vegetation showed high similarities to two FCTs (FCT 24 and FCT 28). All native species recorded within the BaXpCq vegetation are listed as occurring within both FCT 24 and FCT 28, but based*

on the percent frequency of each species within each FCT, the site was slightly more similar to FCT 28. FCT 28 is also more commonly found within the wider local area, based on the mapped locations of Gibson et al. (1994) samples. Further survey in spring may record additional species that may provide more certainty as to the FCT present within the site."

Further the survey report states:

"Plant community BaXpCq was considered to most likely represent FCT 24 'Northern Spearwood shrublands and woodlands' or FCT 28 – 'Spearwood Banksia attenuata or Banksia attenuata – Eucalyptus woodlands'. Both of these FCT were considered to be 'well reserved' and 'low risk' by Gibson et al. (1994). None of the samples clearly aligned with any FCT in the cluster analysis, with all three samples clustering with low similarity to a large group of FCTs. Sample Q1 was most similar to three Gibson et al. (1994) sites representing FCT 24 with 36-39% similarity (Table 7). Sample Q2 was most similar to a Gibson et al. (1994) site representing FCT 28 with 35% similarity but was also similar to two Gibson et al. (1994) sites comprising FCT 24 (Table 7). Sample Q3 was most similar to two Gibson et al. (1994) sites representing FCT 24 with 34-35% similarity (Table 7)" (Emerge Associates, 2019).

Given the above, the proposed clearing is not likely to be at variance to 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 to 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, below which 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). The local area (10km radius) within which this application occurs retains approximately 62 per cent of this pre-clearing extent. Given that the vegetation representations are substantially above this modified objective, and that clearing will not reduce vegetation representation below this threshold, it is not likely that the proposed clearing will have a significant residual impact.

Based on the known extent of native vegetation within the local area, the proposed clearing is not likely to have any environmental impact on native vegetation that is significant as a remnant in an extensively cleared area.

Table 1: Vegetation statistics.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current Extent in DBCA Managed Lands (%)
IBRA bioregion				
Swan Coastal Plain*	977,184	333,620	34	76
Swan Coastal Plain vegetation association*				
**Quindalup Complex	54,574	33,012	60	11
Local area				
10 kilometre radius	32,002	19,988	62	-

(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 not likey to be at variance this Principle

Native vegetation within the application area is not growing in, or in association with an environmental associated with a known watercourse or wetland and therefore is not likely to be at variance to this clearing principle.

A vegetation survey did not identify any wetlands or watercourses within the application (Emerge Associates, 2019). A site inspection by DWER officers concurred with the findings of the survey (DWER, 2019). Based on this evidence, clearing of the vegetation within the application area is not likely to have any environmental impact on vegetation growing in, or in association with, a watercourse or wetland.

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

Proposed clearing not likely to be at variance to this Principle
Clearing of native vegetation within the application area will expose sandy soils with a high to extreme wind erosion risk which may cause appreciable land degradation. The application area is small (2.19 hectares) and the soils will be stabilised through the establishment of a school at the site therefore any land degradation impacts are likely to be temporary. Based on this reasoning, the proposed clearing is not likely to be at variance to this clearing principle.

As assessed under clearing principle (f), no native vegetation growing in, or in association with an environment associated with a known watercourse or wetland is known to occur within the application area. Based on the DPIRD mapped land degradation risk outlined below and the absence of surface water expressions within the application area, there is a low likelihood of water erosion, waterlogging and flooding (DPIRD, 2018) resulting from the proposed clearing.

The risk and associated environmental impacts of the proposed clearing resulting in wind erosion may be significant if the soils are left exposed for an extended period of time. Standard practice for potential environmental impacts of land degradation by wind erosion mitigation through management include staged clearing of vegetation of no more than 2 hectares exposed at any one time. Given the application area is 2.19 hectares the site is unlikely to require additional mitigation measures in order to manage wind erosion resulting from clearing of native vegetation.

Table 2: Land degradation risk categories (DPIRD, 2019).

Land Degradation Risk Category	Quindalup B24 Phase
Water Erosion	3-10% of map unit has a high to extreme water erosion risk 30-50% of map unit has a high to extreme water erosion risk
Wind Erosion	30-50% of map unit has a high to extreme wind erosion risk >70% of map unit has a high to extreme wind erosion risk
Waterlogging	<3% of map unit has a moderate to very high waterlogging risk
Flooding	<3% of the map unit has a moderate to high flood risk
Salinity Risk	30-50% of map unit has a moderate to high salinity risk or is presently saline

(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 not likely be at variance to this Principle
The native vegetation within the application area is not adjacent to or nearby native vegetation managed for conservation and is not likely to be supporting any native vegetation managed for conservation. As such, the proposed clearing is not likely to be at variance to this clearing principle

The closest area managed for conservation is located approximately 1.5 kilometres east of the application area (Yanchep National Park). The application area is separated from all conservation areas by urban housing and a golf course and therefore the environmental impact of clearing native vegetation within the application area on native vegetation growing in association with a conservation area is not likely to be significant.

A survey of the application area noted that:
"There are no mapped ecological linkages within the site. One regional ecological linkage (No. 1) occurs approximately two km west of the site and extends beyond the site to the north and south along the coast. A second regional ecological linkage (No. 6) occurs approximately two km east of the site and extends beyond the site to the north and south. This linkage also connects to regional ecological linkage No.7 which extends north-east of the site. The linkages in the wider local area act to link native vegetation in the Yanchep National Park to vegetation to the east and north within the Gnangara-Moore River State Forest." (Emerge Associates, 2019)

As clearing of the native vegetation within the application area is not likely to have an impact on the environmental values of any conservation areas, the proposal is not likely to be at variance to this clearing 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 to this Principle
Clearing of native vegetation within the application area is not likely to cause deterioration in the quality of surface or underground water and is not likely to be at variance to this clearing principle.

The clearing proposed may increase onsite salinisation. Land clearing most commonly causes a deterioration of underground water through salinsation. Salinity risk mapping of the application area identified that 30-50% of the map unit has a moderate to high salinity risk or is presently saline (DPIRD, 2019). As assessed under clearing principle (f), the vegetation within the application area is unconnected to surface water expressions and as assessed under clearing principle (g), the application area includes sandy soils which are characterised by high levels of infiltration (DPIRD, 2019). It is not likely that the proposed clearing will cause deterioration in the quality of surface or underground water as any increase in saline water will be diluted by increased recharge through exposed sandy soils.

Based on the information above the proposed clearing is not likely to be at variance to this clearing 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 a variance to this Principle

Clearing of native vegetation within the application area is not likely to cause, or exacerbate, the incidence or intensity of flooding within the application area or within the local area (10 km radius) and is not likely to be at variance to this clearing principle.

As assessed under clearing principle (g) the area is mapped as having sandy soils (Emerge Associates, 2019). Soils dominated by sand are highly porous and unlikely to hold water at the soil surface resulting in flooding of an area.

Land degradation risk mapping identified the application area to have less than 3 per cent of the map unit with a moderate to high flood risk nature (DPIRD, 2019). The risk of flooding is very low and no evidence of flooding was noted during a survey (Emerge Associates, 2019), therefore the risk of the proposed clearing causing flooding is considered to be minimal.

Based on the reasons above it is unlikely that the proposed clearing will cause, or exacerbate, the incidence or intensity of flooding within the application area or within the local area (10 km radius) and therefore the proposed clearing is not likely to be at variance to this clearing principle.

Planning instruments and other relevant matters.

The clearing permit application was advertised on the DWER website on 2 May 2019 with a 21 day submission period. One public submission was received in relation to this application. The matters raised in this submission have been addressed in the assessment of the ten clearing principles where relevant.

The City of Wanneroo provided the following advice in relation to the proposed clearing:

> *"The vegetation on site is mapped as Quindalup Complex, which has close to 11.3 per cent of its original extent currently protected within the City of Wanneroo. As such, this vegetation complex is a high priority for further protection according to the City's Local Biodiversity Plan 2018/19 – 2023/4.*
>
> *The lot is reserved for Public Use under the City's District Planning Scheme No. 2 and the reserve purpose is identified as "primary school site". However, the Department of Education is required to submit a Development Application to be approved by the Department of Finance prior to the commencement of any works. The City has no record of any formal pre-consult or Development Application related to the construction of a primary school on this site.*
>
> *Considering the above, the City considers the removal of 2.19 hectares of native vegetation for the purpose of constructing Sunningdale Primary School to be premature, and it is therefore not supported at this time."*

Subsequent to this advice, the Metro North-West Development Assessment Panel (which includes representatives from the City of Wanneroo) considered the proposed clearing on 8 October 2019 and resolved to approve the Development of Sunningdale Primary School subject to conditions (Meeting Minutes No 269). These conditions included the requirement for the Department of Education to develop a Native Fauna Management Plan in consultation with the City of Wanneroo.

The proposal to construct a school at this site was the subject of a news article in the North Coast Times on 10 May 2019. This article highlighted the value of the site as black cockatoo foraging habitat and containing some Banksia woodland. These environmental impacts have been addressed in the assessment against the ten clearing principles.

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

5. References

DBCA (2019) Department of Biodiversity, Conservation and Attractions, Advice to the Department of Water and Environmental Regulation regarding clearing permit application CPS 8466/1 – DWERDT190436

DWER (2019) Department of Water and Environmental Regulation, Site inspection report for CPS 8466/1, 12 August 2019. DWERDT188621.

Emerge Associates (2019a) Reconnaissance Flora and Vegetation Assessment Lot 9766 Sunningdale Road, Yanchep Project No: EP19-021(01)

Emerge Associates (2019b) Level 1 Fauna and Targeted Black Cockatoo Assessment Lot 9766 Sunningdale Road, Yanchep Project No: EP19-021(01)

Government of Western Australia. (2019). 2018 South West Vegetation Complex Statistics. Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Submission. (2019). Submission received in relation to clearing permit application CPS 8466/1. DWER Ref: A1785525

GIS Databases:

- CPS Areas applied to clear
- NatureMap (conservation significant fauna)
- DAFWA Subsystems V5
- Soils of WA
- Vegetation Complexes – Swan Coastal Plain
- Managed Tenure
- Environmentally Sensitive Areas
- TPFL Data June 2019

- WAHerb Data June 2019
- Aboriginal Sites Register
- IBRA Vegetation WA
- WA TECPEC
- Land Degradation Hazards