



GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9218/1
File Number: DWERVT7526
Duration of Permit: From 4 November 2021 to 4 November 2023

PERMIT HOLDERS

Wonnerup Group Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lots 13 and 14 on Plan 15642, Wonnerup

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.062 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

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

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

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

2. Weed management

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

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known *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.

3. Soil erosion and sedimentation management

The permit holder shall not clear any native vegetation:

- (a) between 1 May and 14 November of any given year; and
- (b) unless beginning construction of the driveway/s within one month of undertaking any clearing authorised under this permit.

4. Hydrology management

Within one month of undertaking any clearing authorised under this permit, the permit holder must:

- (a) install a box culvert within the driveway/s to be constructed in the area hatched yellow in Figure 1 of Schedule 1
- (b) the box culvert required under condition 4(a) must be a minimum of 8.5 metres long, 1.2 metres wide and 0.6 metres high and be positioned in the lowest lying portion of the area authorised to clear under this permit.

5. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised <i>clearing</i> activities generally	<ul style="list-style-type: none">(a) the location where the <i>clearing</i> occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;(b) the date that the area was cleared;(c) the size of the area cleared (in hectares);(d) actions taken to avoid, minimise, and reduce the impacts and extent of <i>clearing</i> in accordance with <i>condition 1</i>;(e) actions taken to minimise the risk of the introduction and spread of weeds in accordance with <i>condition 2</i>;(f) the date the box culvert was installed under <i>condition 4</i>;(g) photographs and dimension specifications of the installed box culvert required under <i>condition 4</i>; and(h) the date that construction of the driveway/s commenced

6. Reporting

The permit holder must provide to the *CEO* the records required under condition 5 of this permit when requested by the *CEO*.


DEFINITIONS

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

Table 2: Definitions

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

END OF CONDITIONS


Ryan Mincham
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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

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

12 October 2021

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below.

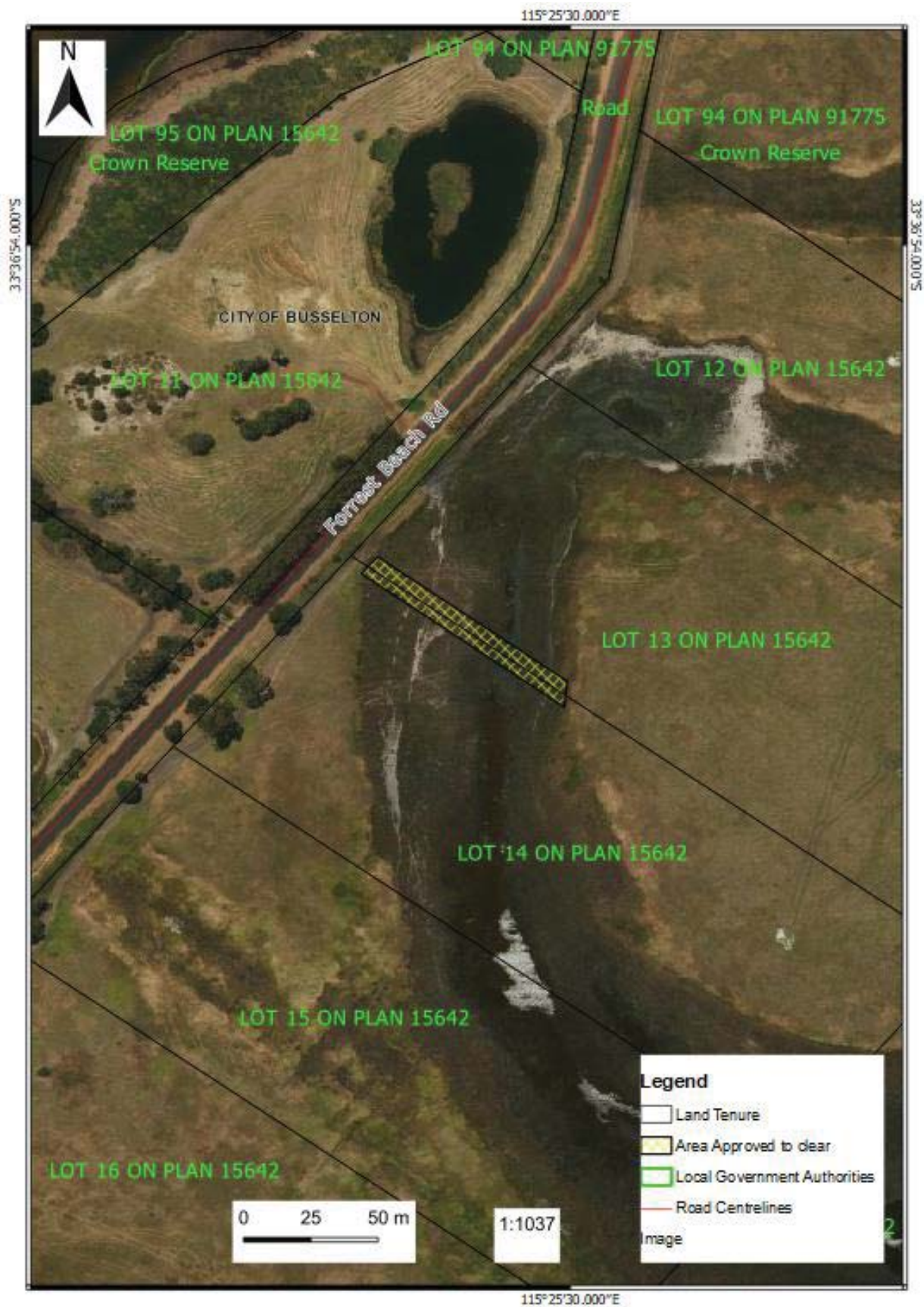


Figure 1: Boundary of the area (cross-hatched yellow) within which clearing may occur.



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9218/1
Permit type:	Area permit
Applicant name:	Wonnerup Group Pty Ltd
Application received:	19 February 2021
Application area:	0.062 hectares
Purpose of clearing:	Driveway construction
Method of clearing:	Mechanical
Property:	Lots 13 and 14 on Plan 15642
Location (LGA area/s):	City of Busselton
Localities (suburb/s):	Wonnerup

1.2. Description of clearing activities

The applicant proposes to clear 0.062 hectares of native vegetation to construct a driveway over an estuary-peripheral wetland area. The application area is around three kilometres northeast of the Busselton townsite and is bordered by existing pasture and Forrest Beach Road to the north, areas subject to inundation south, and modified pastoral land immediately east.

The driveway is required to provide access from Forest Beach Road to two dwellings which are being constructed on Lots 13 and 14 respectively. The applicant notes that the building envelopes and individual driveways beyond the application area within these lots will not require the clearing of native vegetation, given that these areas contain non-native pasture only (Accendo, 2021). The applicant has received development approval from the City of Busselton for the proposed driveways and house pads.

The applicant commissioned a flow investigation report to inform the design of a culvert which will be constructed as part of the driveway, to maintain natural hydrological flows.

Decision:	Granted
Decision date:	12 October 2021
Decision area:	0.062 hectares of native vegetation as shown in Section 1.5 below.

1.3. Reasons for decision

Background

This application was accepted, assessed, and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no public submissions were received.

In undertaking their assessment and in accordance with section 51O of the EP Act, the Delegated Officer considered the site characteristics (see Appendix B), the Clearing Principles in Schedule 5 of the EP Act (see Appendix C), planning instruments and other matters (see Section 3), the findings of a flora and vegetation survey, and relevant datasets available at the time of the assessment (see Appendix E).

The Delegated Officer determined that the proposed clearing of 0.062 hectares of native vegetation, is unlikely to result in significant residual environmental impacts.

However, the assessment determined that the proposed clearing may result in the following impacts:

- disruption of natural hydrological flows noting that the driveway intersects a conservation management category wetland (estuary-peripheral)
- loss of vegetation associated with the Subtropical and Temperate Coastal Saltmarsh ecological community, which is a state listed priority ecological community (priority 3) and federally listed threatened ecological community (vulnerable)
- water quality deterioration through sedimentation
- potential land degradation through water erosion
- the potential introduction and spread of weeds into adjacent native vegetation

The Delegated Officer considered a flow investigation report that was commissioned by the applicant to inform the box culvert design for the driveway to maintain natural hydrological flows (Radyn, 2020). The Delegated Officer considered internal DWER hydrology advice on the box culvert design, which noted that the design was adequate to maintain natural flows. The Delegated Officer also considered the applicants advice that clearing will not occur in portions of the application area that are inundated until such time that they are dry.

After considering the available information, the Delegated Officer determined that the following requirements will be conditioned on the clearing permit to manage and address the potential impacts of clearing:

- avoid and minimise measures to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds, including the use of weed-free fill in constructing the driveway
- construct the driveway in accordance with the culvert specifications identified in the flow investigation report
- no clearing is authorised outside of the period from 15 November to 30 April, to minimise sedimentation by ensuring clearing is undertaken during times where water flow is absent
- driveway construction must commence within one month of undertaking clearing, to minimise the potential for water erosion and sedimentation.

The Delegated Officer also considered that the City of Busselton has issued development approval, subject to conditions, for the driveway and house pads, to which the driveway will provide access to.

Given the above management condition requirements, the Delegated Officer determined that the proposed clearing is unlikely to lead to an unacceptable risk to the environment.

1.4. Site map



Figure 1. Map of the area authorised to clear

The area cross-hatched yellow indicates the area authorised to clear under the granted clearing permit.

2 Legislative context

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

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

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

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

The key guidance documents which inform this assessment are:

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

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant's supporting information notes that the configuration of the building envelopes and access driveways within Lots 13, 14 and 15 has been informed by the onsite flora and vegetation survey to protect areas of increased environmental values, namely the Subtropical and Temperate Coastal Saltmarsh ecological community (state and federally listed as a priority and threatened ecological community respectively) and the nearby Vasse-Wonnerup Ramsar wetland (Accendo, 2021). The current application area is around 155 metres from the Ramsar wetland at its closest point.

The applicant notes that the building envelopes for the dwellings associated with Lots 13 and 14 have been positioned to avoid any direct impacts to native vegetation while providing the greatest possible separation distance to the mapped wetlands (Accendo, 2021).

The applicant notes that the proposal to combine the driveway for Lots 13 and 14 is to minimise the clearing footprint within higher value remnant vegetation. The applicant notes that there are no other alternative locations or options for the driveway given that access needs to be provided to the proposed dwellings within Lots 13 and 14 (Accendo, 2021).

The applicant summarised that the following measures will be undertaken as part of the development (Accendo, 2021):

- limit construction and access to the driveway as far as reasonably practicable;
- minimise soil disturbance and movement to limit the spread of weeds, ensuring that any soil or vegetation moved within, or out of the area is weed-free; and
- undertake targeted weed control within the subject site for **Solanum linnaeanum* (Apple of Sodom) by a suitably qualified contractor to ensure no impacts to native vegetation within the samphire shrublands.

The applicant notes that the following measures will also be committed to prior to clearing (Applicant, 2021):

- operators to undertake an induction outlining the environmentally sensitive nature of the Subtropical and Temperate Coastal Saltmarsh ecological community
- machinery to be weed and seed cleaned prior to being taken to site
- spill kits will be kept onsite
- no servicing of machines to be undertaken on site

The applicant also advised that clearing will not occur in portions of the application area that are inundated until such time that they are dry.

3.2. Assessment of impacts on environmental values

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

The assessment identified that the proposed clearing presents a risk to flora values and land and water resource values, and that these required further consideration. The consideration of impacts to these values, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Environmental value: Biological values (flora) – Clearing Principles (a) and (c)

Subtropical and Temperate Coastal Saltmarsh ecological community

Most of the application area (around 0.056 ha) is mapped as the Subtropical and Temperate Coastal Saltmarsh ecological community (Coastal Saltmarsh), which is state listed as priority 3 and federally listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*. This area is also mapped by the Department of Biodiversity, Conservation and Attractions (DBCA) as a conservation management category (estuary-peripheral) wetland.

The Coastal Saltmarsh is mainly associated with the soft substrate shores of estuaries and embayment's and on some open, low wave energy coasts. Vegetation composition consists of halophytic species with succulent herbs shrubs and grasses less than 0.5 metres dominating the landscape. The two most widely represented families of this community are Chenopodiaceae and Poaceae (DWESPC, 2013).

A flora and vegetation survey (the Survey) of the application area, undertaken on 4 September 2020, identified that it is in excellent (Keighery, 1994) condition (Accendo, 2021). The application area comprises predominantly *Salicornia sp.* with the remaining coverage as exotic *Vulpia bromoides* and to a lesser extent Chenopodiaceae sp., and *Juncus kraussii* (Accendo, 2021). This is consistent with the above description of Coastal Saltmarsh in both vegetation composition and condition, and the application area is representative of this community. Around 1.55 hectares of the remaining vegetation within Lots 13 and 14 is also mapped as the Coastal Saltmarsh.

During the assessment, advice was sought from DBCA regarding potential impacts to the Coastal Saltmarsh. DBCA advised that the clearing would result in localised loss to the ecological community and may result in hydrological changes resulting in impacts to the community through the proposed end land use (DBCA, 2021). It is also noted that the proposed clearing may increase sedimentation of the surrounding Coastal Saltmarsh community.

Internal advice was sought on the potential hydrology impacts of clearing and proposed infrastructure from DWER's Environmental Water Planning (EWP) branch. The flow investigation report supplied by the applicant (2021) was reviewed, and EWP considered that the proposed driveway culvert identified in this report, was adequate to maintain a water regime to support the larger Coastal Saltmarsh occurrence. EWP also noted that the local area has undergone significant hydrological change, including tidal influence, by the Wonnerup surge barrier and is already a highly modified environment.

It is considered that with the installation of the culvert as specified in the flow investigation report, and measures to minimise erosion and sedimentation, the proposed clearing is unlikely to significantly impact on the broader Coastal Saltmarsh beyond the application area. The applicant also advised that clearing will not occur in portions of the application area that are inundated, until such time that they are dry.

According to available datasets, the total mapped occurrence of the Coastal Saltmarsh is 4,516 hectares. Of this, around 698 hectares is mapped within the local area (10 kilometre radius). Therefore, the application area, which includes 0.056 hectares of the mapped community, comprises around 0.0012 and 0.008 per cent of the total, and locally mapped occurrence, respectively.

Based on the above, the proposed clearing is not likely to significantly impact on the total, or locally mapped occurrence of the Coastal Saltmarsh. The proposed clearing will however increase the risk of weeds spreading into adjacent areas of the Coastal Saltmarsh.

Threatened and priority flora

The Survey identified a total of five native and 25 exotic (introduced and cultivated) flora taxa within the larger survey area, representing 29 genera (Accendo, 2021).

The survey did not identify any state or federally listed threatened flora, or any state listed priority flora (Accendo, 2021).

Of the priority flora species recorded in the local area, two species have been recorded on the same soil type as the application area, being *Acacia sp. Binningup* (P1) and *Lasiopetalum membranaceum* (P3), however the required vegetation type (woodland or forest) for these species is not present within the application area. No threatened flora species known from the local area have been recorded on the same soil type as the application area.

Noting the above, the Survey findings, that the application area is dominated by *Salicornia sp.*, and the small application area, the proposed clearing is not likely to impact on any threatened or priority flora species.

Conclusion

Based on the above assessment, the application area contains a high level of biodiversity, as it comprises 0.062 hectares of native vegetation in excellent (Keighery, 1994) condition, of which 0.056 hectares is mapped as the Coastal Saltmarsh. However, the proposed clearing is not likely to significantly impact on the local or total known extent of this community noting it will result in the loss of 0.0012 and 0.008 per cent of the total mapped and local occurrence, respectively.

It is considered that with the installation of an appropriate culvert to maintain hydrological flows, and undertaking measures to minimise erosion and sedimentation, the proposed clearing is unlikely to significantly impact on the broader Coastal Saltmarsh beyond the application area.

The proposed clearing may increase the risk of weeds spreading into the adjacent Coastal Saltmarsh, noting that weed species were recorded in the Survey.

Outcome

To address the potential impacts of spreading weeds, hydrological changes and sedimentation of the surrounding Coastal Saltmarsh, the clearing permit contains the following conditions:

- undertake weed hygiene management measures
- no clearing is authorised outside of the period from 15 November to 30 April, to minimise sedimentation by ensuring clearing is undertaken during times where water flow is absent
- the applicant must install a box culvert within the driveway of 1200 millimetres wide and 600 millimetres high
- construction of the driveway must commence within one month of undertaking clearing to minimise the potential for water erosion and sedimentation

3.2.2. Environmental value: Land and water resources – Clearing Principles (f), (g) and (i)

Impacts to riparian vegetation

The application area is within a mapped conservation management category wetland (CCW) (DBCA, 2021) recognised as estuary-peripheral. The application area was previously considered a multiple-use wetland, however, was re-classified by DBCA as a CCW. EPA Guidance Statement Number 33, notes that wetlands that are to be protected require a 50 metre buffer.

The application area is subject to seasonal inundation and is associated with the nearby Vasse-Wonnerup estuary (around 200 metres east), and larger Vasse-Wonnerup wetland system, which is Ramsar listed. The application area is connected to, and continuous with the Coastal Saltmarsh of the adjacent Vasse-Wonnerup wetland system.

The Survey identified that the application area largely contains *Salicornia* sp. and *Chenopodiaceae* sp., which are riparian (coastal saltmarsh) species, and the proposed clearing will result in the loss of 0.062 hectares of riparian vegetation.

While the proposed clearing will result in the loss of 0.062 hectares of vegetation growing within a CCW, the application area comprises around 0.0012 per cent of the Coastal Saltmarsh community (the majority of which is also mapped as CCW) in the local area. Therefore, the proposed clearing is not likely to significantly impact on the extent of this riparian vegetation type within the local area.

Impacts to hydrology

DBCA (2021) provided comment on the proposed clearing and end land use and noted that the proposed driveway is likely to alter hydrological flows.

The applicant commissioned a flow investigation report to inform a culvert design for the driveway that would support natural hydrological flows post-construction. In accordance with that report, the applicant will be required to install a box culvert (1200 millimetres wide by 600 millimetres high) in the lowest lying part of the proposed driveway to maintain natural flows.

As discussed under Section 2.2.1, internal advice from DWER's EWP branch noted that the proposed culvert was adequate to maintain a water regime to support the larger Coastal Saltmarsh and wetland occurrence. EWP concluded that the proposed clearing and driveway construction would not represent a significant impact to hydrology, also considering that the application area is in a highly modified surrounding environment that had undergone significant hydrological changes.

The applicant has committed to clearing during drier months to ensure dry conditions and avoid clearing during times when water is most likely to flow through the application area. The applicant also advised that clearing will not occur in portions of the application area that are inundated, until such time that they are dry. This will also assist in minimising disruption of natural hydrology, prior to the culvert being installed.

Land degradation and water quality impacts

According to available datasets, greater than 70 per cent of the application area's mapped landform unit has a 'very high to extreme' risk of water erosion, noting it occurs within a mapped wetland. Therefore, the proposed clearing may result in water erosion and subsequently land degradation.

The proposed clearing may also result in an increase in water turbidity (suspended sediments), and/or sedimentation within the wetland the application area intersects, and potentially the larger Vasse-Wonnerup wetland system.

To minimise the risk of water erosion and sedimentation, the applicant has advised that construction works will be restricted to months when the watercourse is dry (i.e. 15 November to 30 April) and that clearing will not occur in portions of the application area that are inundated, until such time that they are dry. Reducing the time between clearing and driveway construction would also reduce the risk of sedimentation, noting that summer rainfall is a potential sedimentation risk immediately post-clearing.

Given the relatively small application area, existing highly modified landscape, and that clearing will be undertaken during summer months, the proposed clearing is not likely to cause appreciable land degradation via water erosion, or significantly impact on water quality (through sedimentation) of the CCW or broader surrounding wetlands.

Conclusion

Based on the above assessment, the proposed clearing will:

- impact on 0.062 hectares of riparian vegetation growing within a CCW
- increase the risk of sedimentation and water erosion
- potentially impact on natural hydrological flows

The applicant has committed to the following management measures to reduce the risk of the above impacts:

- constructing a box culvert in the lowest lying part of the driveway to maintain the natural hydrology
- undertaking clearing in summer months to reduce the potential for water erosion and sedimentation
- not clearing in portions of the application area that are inundated, until such time that they are dry

Noting the above measures and small size of the application area, the proposed clearing is unlikely to result in significant impacts to the CCW the application area forms part of, or the wider Vasse-Wonnerup wetland system.

Outcome

To address the potential impact of water erosion and sedimentation, and to hydrological flows of the CCW, the clearing permit contains the following conditions:

- no clearing is authorised outside of the period from 15 November to 30 April, to minimise sedimentation by ensuring clearing is undertaken during times where water flow is absent
- the applicant must install a box culvert within the driveway of 1200 millimetres wide and 600 millimetres high
- construction of the driveway must commence within one month of undertaking clearing to minimise the potential for water erosion and sedimentation

3.3. Relevant planning instruments and other matters

Local Government Authority comment

The City of Busselton has advised that development approval under the *Planning and Development Act 2005* has been granted by the City for the proposed driveway, crossovers, house pads, effluent disposal area and building envelopes. A copy of the development approval was provided by the applicant. The development approval is subject to conditions.

Aboriginal Heritage

One Aboriginal Site of Significance (Cable Sands Skull) has been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

DBCA comment

DBCA provided comment on the proposed clearing and noted the following concerns around the end land use of the larger development (DBCA, 2021):

"It is highly likely that the larger wetland will not only be degraded by this proposed clearing but also by subsequent landholder activities. Activities may include stock grazing, and horses are particularly common in this area...

Other impacts associated with the clearing proposal and the larger lot development, including hydrological changes, increased weed invasion, constructions of fences on lot boundaries and subsequent lot usage, will exacerbate the impacts of the proposal on the saltmarsh and result in change or loss of additional localised areas of the TEC...

The proposed access will require fill which has the potential to alter the hydrology of the larger wetlands and will introduce weeds... Any raised soil, that is, fill, introduced to the wetland will likely become weed infested; from existing seed or weed spread along the fill from the adjoining paddock, and will degrade the adjoining wetland vegetation...

[Several migratory] bird species [known from the nearby Vasse-Wonnerup wetland system] are secretive and may not continue occupying this area with house development. The wetland vegetation subject to impact is likely to degrade and the adjoining wetland may no longer support visits from the specially protected bird species".

DWER has considered the potential impact to hydrological flows and has conditioned the clearing permit with a requirement to install a box culvert within the driveway, consistent with the design in the applicants flow investigation report. DWER internal hydrology advice from subject matter experts considered that the drainage infrastructure is adequate to maintain a water regime to support the Coastal Saltmarsh. The applicant will also be required to ensure that any fill used in the construction of the driveway is weed free.

DWER is unable to consider future potential land uses such as stock grazing, fencing or other undefined land uses that are not applied for under this clearing permit application. However, the applicant is advised that any further clearing of native vegetation within these lots for stock grazing or fencing, will require a clearing permit.

Submissions

No public submissions were received in relation to this application.

Potential unlawful clearing

The application initially included an additional proposed clearing area of 0.204 hectares within Lot 15 for a house pad. Since the application has been under assessment, this area has been cleared.

Having already been cleared, this area has been excluded from the current clearing permit application, and the matter of potentially unlawful clearing has been submitted to DWER's Compliance and Enforcement branch.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	<p>The application area is around 3 km from the Busselton townsite and comprises a 0.062 ha portion of a larger 3.97 ha area of mapped remnant vegetation. It is located within an estuary-peripheral wetland adjacent to Forrest Beach Road.</p> <p>Spatial data indicates the local area (10 km radius surrounding the application area) retains around 21.1 per cent of the original native vegetation cover.</p>
Climate, landform and soils	<p>The average mean rainfall of the application areas is 800 mm.</p> <p>The annual evapotranspiration of the application area is 800 mm.</p> <p>The topography of the application area ranges from between 0 m AHD and 1 m AHD.</p> <p>The soil is mapped as 'Vasse Wonnerup very wet saline flats Phase (211Va)' described as estuaries, low lying depressions which are often underwater in winter and saline in summer.</p>
Vegetation description and condition	<p>The flora survey identified that the application area largely comprises <i>Salicornia sp.</i>, with remaining species comprising exotic <i>Vulpia bromoides</i> and to a lesser extent <i>Chenopodiaceae sp.</i>, <i>Juncus kraussii</i>, <i>Senecio condylus</i>, and exotic <i>Lolium rigidum</i> (Accendo 2021). The application area is in excellent (Keighery, 1994) condition, with only a minor presence of weeds (Accendo, 2021).</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C. The full survey descriptions and mapping are available in 0</p> <p>The recorded vegetation is largely consistent with mapped broad scale Vasse Complex vegetation type, and specifically the reference to samphire in the description of this vegetation type.</p> <p>The vegetation type is described as a mixture of closed scrub of melaleuca species fringing woodland of <i>Eucalyptus rudis</i> (Flooded Gum) – Melaleuca species and open forest of <i>E. gomphocephala</i> (Tuart) – <i>E. marginata</i> (Jarrah) – <i>Corymbia calophylla</i> (Marri). Will include areas dominated by <i>Tecticornia</i> and <i>Sarcocornia</i> species (Samphire) near Mandurah and south of the Capel River (Hedde et al. 1980).</p> <p>The mapped vegetation type retains around 31.40 per cent of its original extent (Government of Western Australia, 2019).</p>
Conservation areas	<p>The application area does not intersect any mapped conservation areas. The Ramsar listed Vasse-Wonnerup wetland system is around 155 m from the application area. The next closest conservation area is an unmanaged Crown reserve located approximately 180 m east of the application area.</p>
Ecological linkage	<p>The application area is not mapped as an ecological linkage and is not considered to provide significant landscape linkage values.</p>
Waterbodies	<p>Available datasets and aerial imagery indicate that the application area is within an area mapped as an estuary-peripheral conservation category wetland (based on DBCA's Swan Coastal Plain Wetland Evaluation dataset) and is also within an area subject to seasonal inundation, with interconnectivity to the Ramsar listed Vasse-Wonnerup wetland system.</p>

Characteristic	Details
	The Vasse-Wonnerup Wetland System surrounds the application area and is 155 m away at its closest point.
Flora	<p>According to available datasets, there are records of 50 priority flora species within the local area. There are records of 12 threatened flora within the local area. No priority or threatened flora records occur within the application area.</p> <p>The closest conservation listed flora record to the application area is <i>Banksia nivea subsp. uliginosa</i> (threatened) located around 710 m west. The application area does not provide suitable habitat for this species.</p> <p>Two conservation listed flora species known from the local area occur on the same soil type as the application area, being <i>Acacia sp. Binningup</i> (P1) and <i>Lasiopetalum membranaceum</i> (P3). Both species are recorded within woodlands and forests (Jarrah, Tuart, Peppermint) which is inconsistent with the application area.</p> <p>No threatened flora known from the local area are recorded on the same soil type as the application area.</p>
Ecological communities	0.056 hectares of the application area is mapped as the state listed priority 3 and federally listed threatened (vulnerable) Subtropical and Temperate Coastal Saltmarsh ecological community.
Fauna	There are records of 61 species of threatened or priority fauna within the local area. The closest record is of a western ringtail possum, located around 150 m from the application area. The application area does not provide suitable habitat for this species.

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	14.85
Vegetation complex**					
Swan Coastal Plain – Vasse Complex	15,691.63	4,926.97	31.40	2,294.43	14.62

*Government of Western Australia (2019a) **Government of Western Australia (2019b)

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biodiversity values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p>The application area comprises a high level of biodiversity as it is representative of the Coastal Saltmarsh ecological community which is federally listed as vulnerable and state listed as Priority 3.</p>	At variance	Yes <i>Refer to Section 3.2.1, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The application area is also mapped by DBCA as a conservation management category wetland.</p> <p>Noting the small extent of clearing relative to the total and locally mapped occurrence of the Coastal Saltmarsh community, the proposed clearing of 0.062 hectares is unlikely to significantly impact on the total known, or local occurrence of this community, or the greater wetland occurrence.</p> <p>The potential risk of hydrology changes and sedimentation to the greater Coastal Saltmarsh, CCW and Vasse-Wonnerup wetland system will be managed through requirements on the clearing permit, as specified under Section 3.2.1.</p>		
<p><u>Principle (b):</u> “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.”</p> <p><u>Assessment:</u></p> <p>Advice received from DBCA (2021) indicated that five migratory birds have been recorded in historical surveys undertaken in wetlands immediately north and east of the application area. These birds are:</p> <ul style="list-style-type: none"> • grey tailed tattler (<i>Tringa brevipes</i>) (priority (P) 4) • common greenshank (<i>Tringa nebularia</i>) (protected under international agreement (IA)) • blue billed duck (<i>Oxyura australis</i>) (P4) • sharp tailed sandpiper (<i>Calidris acuminata</i>) (IA) • Eurasian curlew (<i>Numenius arquata</i>) (not conservation listed) <p>The supporting information provided by the applicant noted that in addition to those species listed above, the following five bird species have the potential to utilise the application area, based on their habitat requirements and records in the local area (Accendo, 2021):</p> <ul style="list-style-type: none"> • red-capped plover (<i>Charadrius ruficapillus</i>) (not conservation listed) • peregrine falcon (<i>Falco peregrinus</i>) (other specially protected fauna) • white-bellied sea eagle (<i>Haliaeetus leucogaster</i>) (not conservation listed) • hooded plover (<i>Thinornis rubricollis</i>) (P4) • wood sandpiper (<i>Tringa glareola</i>) (protected under international agreement (IA)) <p>The proposed clearing of 0.062 hectares of suitable habitat for these species is not likely to be a significant impact, given that more than around 1.55 hectares of Coastal Saltmarsh (suitable habitat) is mapped within Lots 13 and 14 outside of the application area, and that the nearby Vasse-Wonnerup wetland system provides 900 hectares of core habitat for these species.</p> <p>It is considered that the hydrology and sedimentation management requirements set out above under Section 3.2.1, will adequately manage impacts to the surrounding Coastal Saltmarsh habitat.</p> <p>The <i>Salicornia sp.</i> dominated application area is unlikely to provide significant fauna habitat for any other conservation listed fauna species.</p>	Not likely to be at variance	No
<p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Assessment:</u></p> <p>The Flora survey did not identify any threatened flora species within the application area (Accendo, 2021), which is dominated by <i>Salicornia sp.</i> Furthermore, no threatened flora species known from the local area occur on the same soil type as the application area.</p> <p>Given the above, and noting the small extent of clearing proposed, the proposed clearing is not likely to impact on threatened flora.</p>		
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>According to available datasets the vegetation within the application area is not mapped as, or representative of, any known state listed threatened ecological communities.</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The National Objectives and Targets for Biodiversity Conservation 2001-2005 include a target to have clearing controls in place that prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750 (Commonwealth of Australia 2001).</p> <p>The local area retains around 21.1 per cent (4,140 hectares considering the coastal waterline) remnant native vegetation cover and the mapped vegetation type retains 31.4 per cent (4,926 hectares of which 2,294 hectares is within DBCA managed land) of its pre-European vegetation extent. The Swan Coastal Plain Bioregion retains 38.6 per cent of its pre-European vegetation extent.</p> <p>The application area includes vegetation that is representative of the conservation listed Coastal Saltmarsh ecological community and includes a small portion of vegetation growing within a CCW, therefore, it is a significant remnant. While the mapped vegetation type retains more than the above 30 per cent vegetative threshold, the local area retains less than this threshold.</p> <p>However, noting that the proposed clearing would result in the loss of a minimal 0.0015 per cent of vegetation within the local area, and that the applicant has undertaken avoidance and minimise measures and committed to management actions to reduce the risk of impacting the Coastal Saltmarsh ecological community and CCW, the proposed clearing is not likely to have a significant environmental impact on the remnant native vegetation in the local area.</p>	May be at variance	No
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>The Vasse-Wonnerup Ramsar listed wetland is located 155 metres from the application area. Noting the hydrology and sedimentation management</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>measures that will be conditioned on the permit as specified under Section 3.2.1, the proposed clearing is not likely to impact on this community.</p> <p>Given the distance to the other nearest conservation areas (180 m to an un-named Crown reserve and 1.3 km to an un-named DBCA managed reserve), the proposed clearing is not likely to impact on the environmental values of these or any other conservation areas.</p>		
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>The application area is located within a mapped CCW (estuary-peripheral) and includes riparian vegetation.</p> <p>The potential risk of hydrology changes and sedimentation to the greater Coastal Saltmarsh, CCW and Vasse-Wonnerup wetland system will be managed through requirements on the clearing permit, as specified under Section 3.2.2.</p>	At variance	<p>Yes</p> <p><i>Refer to Section 3.2.2, above.</i></p>
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils within the application area are highly susceptible to water erosion, and noting that the application area intersects a CCW (estuary-peripheral), which is subject to seasonal inundation, there is a risk of water erosion causing land degradation.</p> <p>The potential risk of hydrology changes and sedimentation to the greater Coastal Saltmarsh, CCW and Vasse-Wonnerup wetland system will be managed through requirements on the clearing permit, as specified under Section 3.2.2.</p>	May be at variance	<p>Yes</p> <p><i>Refer to Section 3.2.2, above.</i></p>
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p> <p>The application area is located within a mapped CCW (estuary-peripheral) which is subject to seasonal inundation, and includes soil types that are prone to water erosion, therefore the proposed clearing may result in sedimentation of the wetland.</p> <p>The potential risk of sedimentation will be managed through requirements on the clearing permit, as specified under Section 3.2.2.</p> <p>Given the extent of clearing, and the already saline nature of the water, being associated with an estuary, the proposed clearing is unlikely to impact on salinisation of surface or underground water.</p>	May be at variance	<p>Yes</p> <p><i>Refer to Section 3.2.2, above.</i></p>
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<u>Assessment:</u> Noting the limited extent of clearing, it is not likely to cause or exacerbate flooding in excess of what is already experienced within this riparian environment.		

Appendix C. Vegetation condition rating scale

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

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

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

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

Appendix D. Survey methods and photographs

The applicant commissioned a detailed flora and vegetation survey over a larger survey area encompassing the application area on 4 September 2020. The survey included five 10x10 metre quadrats and nine releve points to sample vegetation, as well as opportunistic observations noting that the entire survey area was traversed on foot by a senior botanist (Accendo, 2021).

The Survey noted that the survey timing was a minor limitation given that it was undertaken very early in spring (Accendo, 2021).



Figure 2. Representative site photograph of the application area.

Appendix E. Sources of information

E.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Consanguineous Wetlands Suites (DBCA-020)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Ramsar Sites (DBCA-010)
- Remnant Vegetation, All Areas
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)

- Wetland Evaluation Swan Coastal Plain – Classification (DBCA-018)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- RIWI Act, Groundwater Areas (DWER-034)

Restricted GIS Databases used:

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

E.2. References

- Accendo Australia (2021) Lots 13, 14 & 15 Forrest Beach Road, Wonnerup - Clearing Permit Application. Incorporates *'Flora and Vegetation Survey, Lots 12-17 Forrest Beach Road, Forrest Road'*. Supporting Information for Clearing permit Application CPS 9218/1 (Ref DWERDT416580).
- Applicant (2021) Additional Information to support Clearing Permit Application CPS 9218/1 (DWER Ref A2035456).
- City of Busselton (2021) Notice of Determination on Application for Development Approval (DA20/0939) (DWER Ref A2000753)
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of Biodiversity Conservation and Attractions (DBCA) (2021) TEC and Wetlands Advice received for Clearing Permit Application CPS 9218/1 (DWER Ref A2017123).
- Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.
- Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) (2013). *Conservation Advice for Subtropical and Temperate Coastal Saltmarsh*. Canberra: Department of Sustainability, Environment, Water, Population and Communities.
- Government of Western Australia (2019a) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, <https://catalogue.data.wa.gov.au/dataset/dbca>
- Government of Western Australia (2019b) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) *Vegetation Complexes of the Darling System, Western Australia*. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Radyn, P. (2020) Flow Investigation Report. Lots 12-14 Forrest Beach Road, Wonnerup, Western Australia. Supporting Information for Clearing permit Application CPS 9218/1 (Ref DWERDT416580).