



## Native Vegetation Clearance

### Flinders Chase Visitor Hub

## Data Report

Clearance under the *Native Vegetation Regulations 2017*

10 December, 2021

Prepared by Michelle Haby



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# 1. Application information

## Application Details

Applicant:	Troppo		
Key contact:	Ryan Horsnell <b>Mb:</b> 0422 066 621 <b>E:</b> ryan.horsnell@troppo.com.au		
Landowner:	Department of Environment and Water		
Site Address:	8125 South Coast Road, Karatta SA 5223		
Local Government Area:	Kangaroo Island	Hundred:	McDonald
Title ID:	CR/6254/427	Parcel ID	D18009 A1

## Summary of proposed clearance

Purpose of clearance	Clearance required for the construction of a Visitor Hub, Research Centre with accommodation, vehicle access and ancillary structures including carparks, picnic areas, waste water treatment area and rainwater tanks
Native Vegetation Regulation	Regulation 12, Schedule 1; clause 33, House or Buildings
Description of the vegetation under application	58.33 ha of Stringybark ( <i>Eucalyptus obliqua</i> ) Woodlands in very good condition.
Total proposed clearance - area (ha) and number of trees	0.9974 ha
Level of clearance	Level 4
Overlay (Planning and Design Code)	Native Vegetation Overlay

## Map of proposed clearance area



Mitigation hierarchy	The new development has been designed to incorporate as much of the previous developments footprint as possible to minimise the amount of vegetation that needs to be cleared.
SEB Offset proposal	Payment of \$46,695.57 or 8.61 ha on-ground

# 2. Purpose of clearance

## 2.1 Description

Clearance is required to construct a new Visitor Hub and Research Facility after the previous centres were burned down in the 2019-20 KI Complex Bushfire. The new facility is going to be mostly constructed on the footprint of the Kangaroo Island Wilderness Retreat, which also burnt down during the same fire event.

## 2.2 Background

The western end and vast tracts of the south coast of Kangaroo Island are largely uncleared due to the poor nature of the soils in many parts and the proactiveness of environmentalists in the early 1900's. The site of the former Kangaroo Island Wilderness Retreat on the outskirts of Flinders Chase National Park had been left as wilderness until the 1980's when a small portion of the allotment was developed into a tourist facility.

This facility was designed to blend in with the natural environment, so most of the buildings were nestled in amongst the trees that were growing in the area. The buildings were mostly constructed from pine logs and post construction, the disturbed areas were left to naturally regenerate. The buildings were fitted with a sprinkler system, but despite this all buildings were burnt down in their entirety during the 2019-20 KI Complex Bushfire.

The Department of Environment and Water (DEW) has now purchased this parcel of land and intends to construct a new Visitor and Research facility over the footprint of the previous development.

## 2.3 General location map

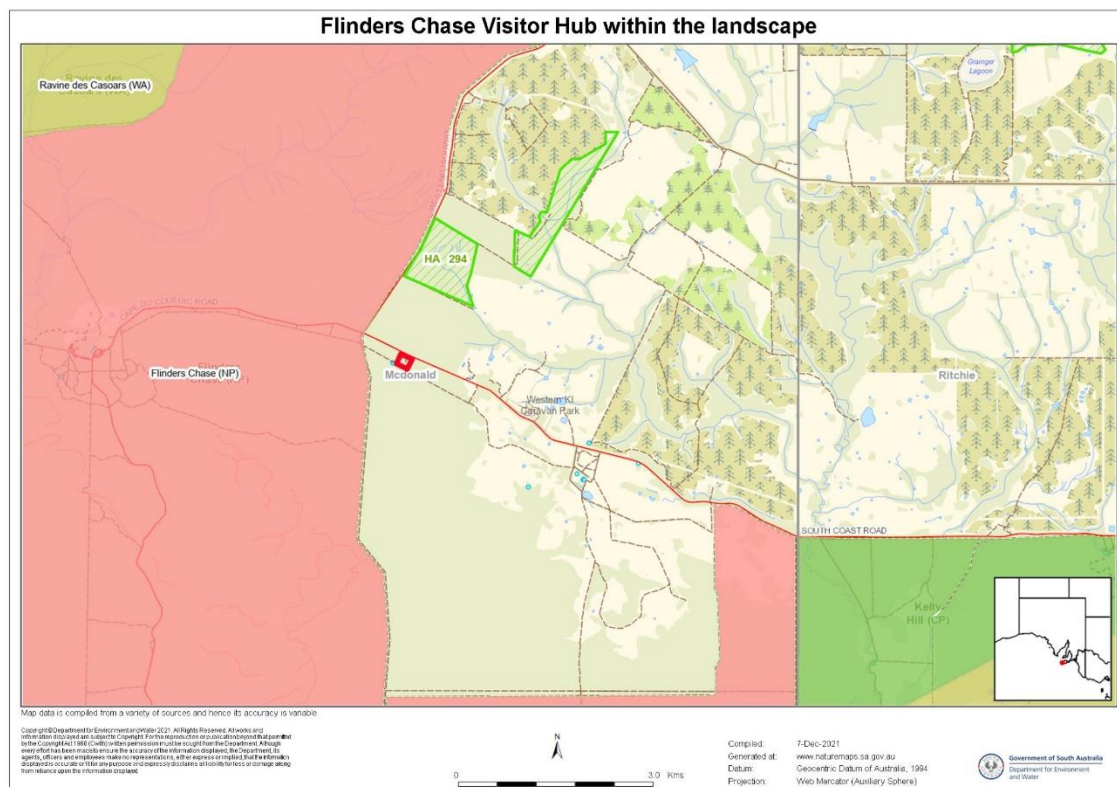


Figure 1. Location of 8125 South Coast Road, Karatta within the landscape. (Scale 1:72,224)



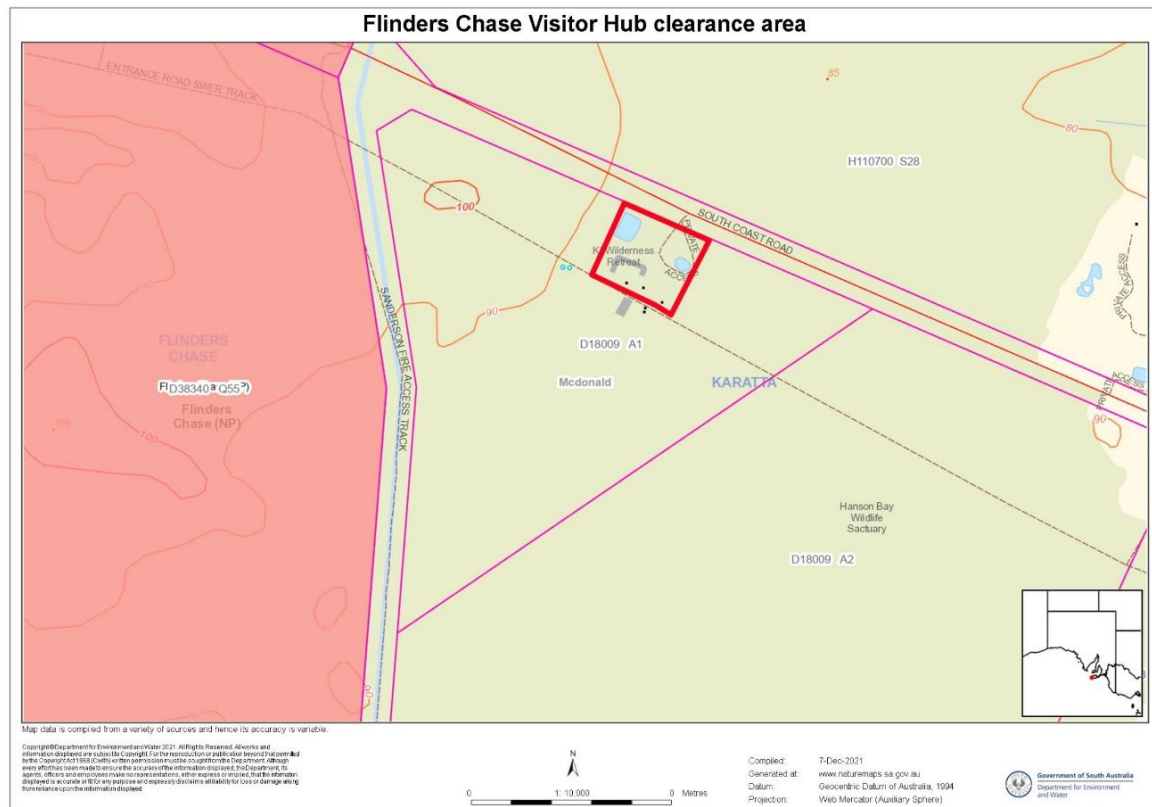


Figure 2. Clearance area on 8125 South Coast Road, Karatta. (Scale 1:10,000)



Figure 3. Building footprint and BAL 29 clearance area on 8125 South Coast Road, Karatta.

## 2.4 Details of the proposal

The Department of Environment and Water wish to construct a Visitor Hub and Research Facility on the outskirts of Flinders Chase National Park. This facility is going to contain a Visitor Centre with interpretive areas, a Café, National Parks staff office, Meeting Room, Research Laboratory and Interpretive deck and staff/researcher accommodation (Figure 4).

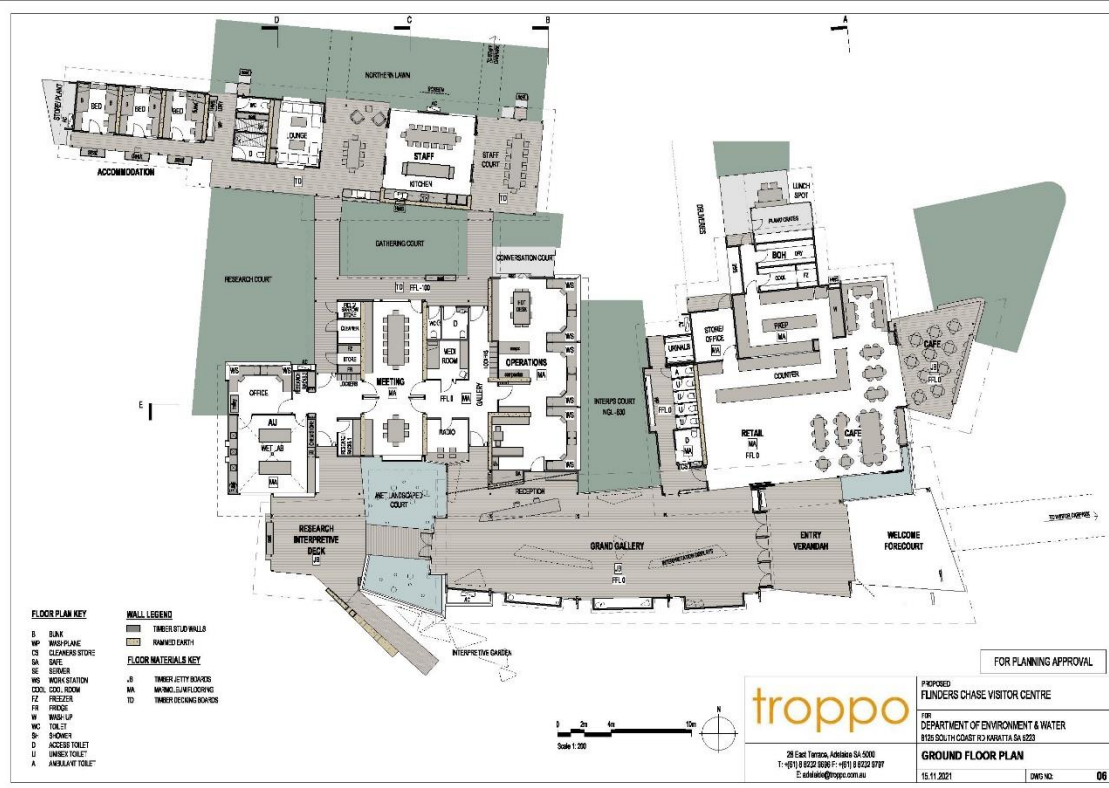


Figure 4. Design plan for the Flinders Chase Visitor Hub.

The development will also include access driveways, car and bus parking, picnic facilities, interpretive gardens, wastewater treatment facility, water tanks and a wetland (Figure 5).





# 3. Method

## 3.1 Flora assessment

The Native Vegetation proposed to be cleared for the construction of a new dwelling and associated infrastructure at 8125 South Coast Road, Karatta, Hundred of McDonald was assessed on 26th August 2021. The flora was assessed using standard assessment techniques consisting of-

- One native vegetation community was identified;
- A Bushland Assessment Site was established in the vegetation community;
- A complete species list of all native and introduced plant species was produced for the identified vegetation community;
- Nationally Threatened, State Listed or Regionally Significant plant species populations were identified and their location recorded with a hand-held GPS to an accuracy of <5m;
- Proclaimed introduced plant species populations were identified and their location recorded with a hand-held GPS to an accuracy of <5m; and
- Survey data relating to records of Nationally Threatened, State Listed or Regionally Significant plant species was recorded, following BDBSA Minimum Data Standards, and provided to BDBSA for uploading.

[7. Appendices](#) contains the flora list for the site.

## 3.2 Fauna assessment

The potential fauna to occur on 8125 South Coast Road, Karatta, Hundred of McDonald was determined utilising the following-

- Fauna recorded within 5km of the site;
- Observations of fauna including, tracks and traces, while undertaking the flora assessment.

The comprehensive list from above was then added to the Bushland Assessment Spreadsheet, [Appendix 2](#).

As this development is largely being positioned over an existing cleared envelope it was felt that a targeted fauna survey was not required.



# 4. Assessment Outcomes

## 4.1 Vegetation Assessment

### General description of the vegetation, the site and matters of significance


The south-west corner of Kangaroo Island is generally flat to gently undulating with few water courses. The soils are predominately sandy inland tending to rockier towards the coast. The proposed development site on 8125 South Coast Road is situated within a slight depression and the soils are a mix of sand over clay that changes to gravelly soils on the western upslope of the depression. There is a small seasonal creek to the south of the development site.

There are two vegetation associations being a *Eucalyptus cladocalyx* forest across the south-eastern part of the property and a *Eucalyptus baxteri* woodland across the north-western part. This development is predominately within the woodland association, however the far south-eastern portion crosses over into the forest.

All the vegetation on the property was burnt during the 2019-20 KI Complex Bushfire. It is now in very good regenerative condition with a high number of seedling and resprouting species present. Very few weed species were observed in the area.

The vegetation surrounding the proposed development is contiguous with Flinders Chase National Park to the west and Hanson Bay Sanctuary to the south and east. The vegetation on these properties is in a similar condition to what is found on 8125 South Coast Road, Karatta.

## Details of the vegetation associates/scattered trees proposed to be impacted

Vegetation Association	KI 0301 <i>Eucalyptus baxteri</i> , <i>Eucalyptus obliqua</i> , <i>Eucalyptus cosmophylla</i> low woodland over <i>Allocasuarina striata</i> , <i>Banksia marginata</i> , <i>Banksia ornata</i> , +/- <i>Hakea rostrata</i> , +/- <i>Allocasuarina muelleriana</i> ssp. <i>notocolpica</i> shrubs.				
					<p><b>Direction:</b> 223°</p> <p><b>Latitude:</b> 35° 57' 12.23" S</p> <p><b>Longitude:</b> 136° 47' 18.07" E</p> <p><b>Photo 5</b> Typical habitat</p>
General description	<i>Eucalyptus obliqua</i> woodland over <i>Banksia marginata</i> and <i>Hibbertia fasciculata</i> in very good regenerative and relatively weed free condition.				
Threatened species or community	There are records of Southern Brown Bandicoot, KI Dunnart, Short-beaked Echidna, Bassian Thrush and Heath Goanna within 5km of the site. No threatened communities were observed.				
Landscape context score	1.05	Vegetation Condition Score	54.94	Conservation significance score	1.14
Unit biodiversity Score	65.77	Area (ha)	0.9974	Total biodiversity Score	65.60

## Site map showing areas of proposed impact



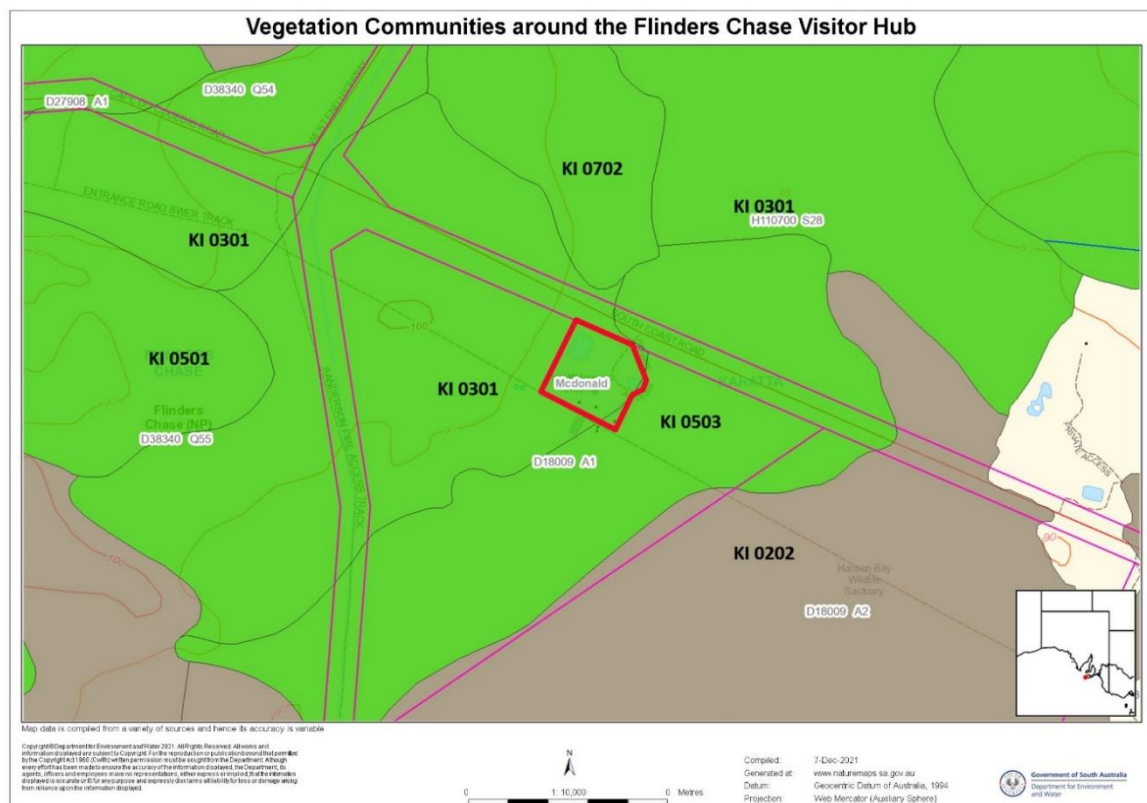


Figure 6. Vegetation Communities around the proposed Flinders Chase Visitor Hub. (Scale 1:10,000)

### Photo log



Photo 1. **Direction:** 5° **Latitude:** 35° 57' 14.41" S **Longitude:** 136° 47' 13.93" S. Western side of Visitor Hub





Photo 2. **Direction:** 245° **Latitude:** 35° 57' 12.97" S **Longitude:** 136° 47' 15.56" E. Eastern side of Visitor Hub



Photo 3. **Direction:** 341° **Latitude:** 35° 57' 11.02" S **Longitude:** 136° 47' 18.16" E. Waste water treatment area





Photo 4. **Direction:** 145° **Latitude:** 35° 57' 10.35" S **Longitude:** 136° 47' 16.62" E. Tanks and access tracks

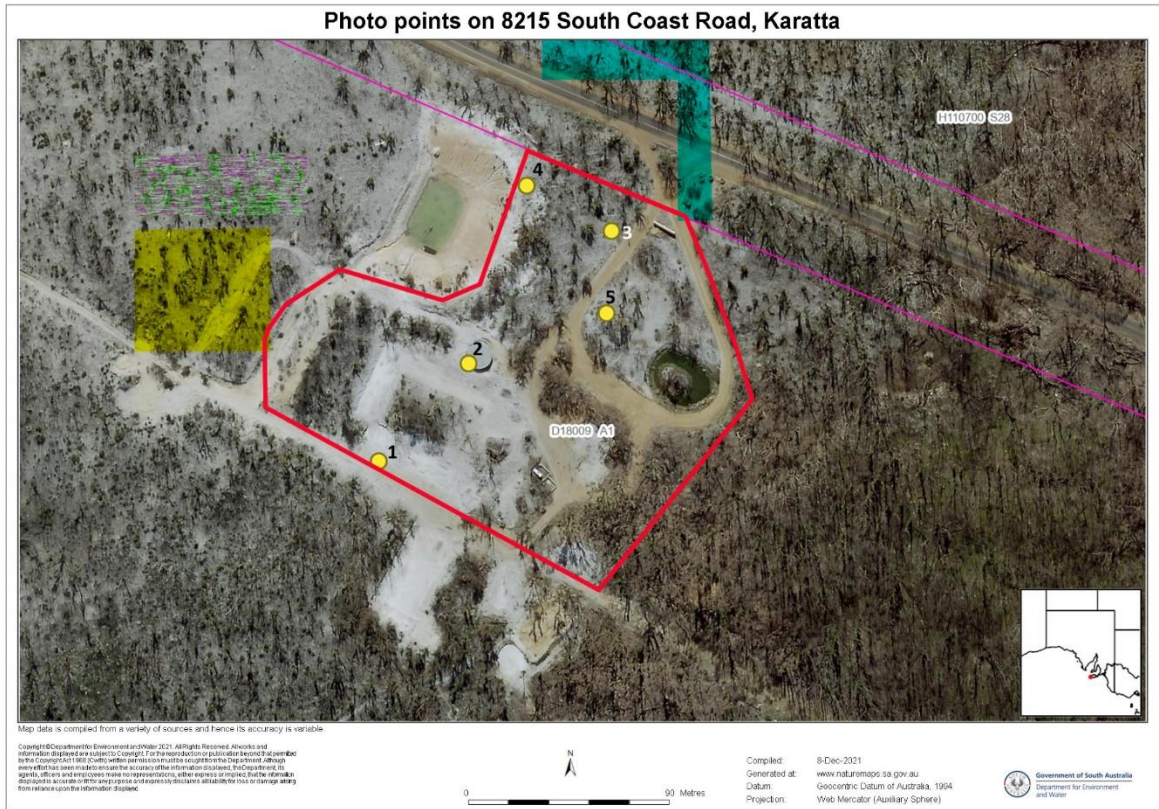


Figure 7. Location of Photo points on 8125 South Coast Road, Karatta. (Scale 1:2,257)

## 4.2 Threatened Species assessment

**Species observed on site, or recorded within 5km (50km in the arid zone) of the application area since 1995, or the vegetation is considered to provide suitable habitat**

Species (common name)	NP&W Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
<i>Burhinus grallarius</i> (Bush Stonecurlew)	R		3	1998	Woodland	Likely – suitable habitat present.
<i>Cereopsis novaehollandiae novaehollandiae</i> (Cape Barren Goose)	R		3	2013	Grassland	Unlikely – limited habitat present
<i>Hylacola cauta halmaturina</i> (Shy Heathwren)	R		3	2013	Woodland, Coastal Heathland	Unlikely – no suitable habitat present
<i>Myiagra inquieta</i> (Restless Flycatcher)	R		3	2000	Open Forest and Woodland, Riverine edges	Likely – suitable habitat present
<i>Petroica boodang boodang</i> (Scarlet Robin)	R		3	2019	Open Forest, Open Woodland,	Likely – suitable habitat present
<i>Psophodes leucogaster lashmari</i> (White-bellied Whipbird)	R		3	2002	Woodland, Heathland	Likely – suitable habitat present
<i>Stipiturus malachurus halmaturinus</i> (Southern Emuwren)	R		3	2002	Woodland, Coastal Heathland	Unlikely – no suitable habitat present
<i>Turnix varius varius</i> (Painted Buttonquail)	R		3	2016	Woodland, Heathland with thick leaf litter	Unlikely – no suitable habitat in present burnt state
<i>Zoothera lumulata halmaturina</i> (Bassian Thrush)	sp	VU	3	2018	Dense Forest and Woodland	Unlikely – no suitable habitat present
<i>Isodon obesulus obesulus</i> (Southern Brown Bandicoot)	V	EN	3	2015	Forest, Woodland	Likely – suitable habitat present
<i>Sminthopsis fuliginosus aitakeni</i> (KI Dunnart)	E	EN	3	2021	Mallee woodland, Heathland	Likely – suitable habitat present
<i>Tachyglossus aculeatus multiaculeatus</i> (Short-beaked Echidna)	E	EN	3	2019	Forest, Woodland, Heathland	Likely – suitable habitat present
<i>Trichosurus vulpecula</i> (Common Brushtail Possum)	R		3	2019	Forest, Woodland	Likely – suitable habitat present
<i>Varanus rosenbergi</i> (Heath Goanna)	V		3	2021	Forest, Woodland, Heathland	Likely – suitable habitat present
<i>Eucalyptus fasciculosa</i> (Pink Gum)	R		4	2021	Forest, Woodland	Known



<i>Zieria veronicea ssp. insularis</i>	R		4	2021	Woodland, Heathland	Known
<i>Xanthorrhoea semiplana ssp. tateana</i> (Tate's Grass Tree)	R		4	2021	Forest, Woodland, Heathland	Known
Source; 1- BDBSA, 2 - AoLA, 3 – NatueMaps 4 – Observed/recorded in the field, 5 - Protected matters search tool, 6 – others NP&W Act; E= Endangered, V = Vulnerable, R= Rare EPBC Act; Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable						

Criteria for the likelihood of occurrence of species within the Study area.

Likelihood	Criteria
Highly Likely/Known	Recorded in the last 10 years, the species does not have highly specific niche requirements, the habitat is present and falls within the known range of the species distribution or; The species was recorded as part of field surveys.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species and the area provides habitat or feeding resources for the species.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species, but the area provide limited habitat or feeding resources for the species. Recorded within 20 -40 years, survey effort is considered adequate, habitat and feeding resources present, and species of similar habitat needs have been recorded in the area.
Unlikely	Recorded within the previous 20 years, but the area provide no habitat or feeding resources for the species, including perching, roosting or nesting opportunities, corridor for movement or shelter. Recorded within 20 -40 years; however, suitable habitat does not occur, and species of similar habitat requirements have not been recorded in the area. No records despite adequate survey effort.

## 4.3 Cumulative impact

*When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must consider the potential cumulative impact, both direct and indirect, that is reasonably likely to result from a proposed clearance activity.*

The clearance required for the proposed new Flinders Chase Visitor Hub will be carried out in a sensitive manner to minimise the impact on the surrounding vegetation. The development has been carefully designed to sit over the existing cleared areas. Areas that have been cleared previously, but are not being utilised for this development, will be used to stockpile any debris or excavated dirt, thereby preventing this material from smothering surrounding vegetation. The clearance will not alter the hydrology of the area as there are no watercourses or wetlands nearby.

The clearance area being applied for has taken the connection of services and emergency vehicle access and turn around into account as well as that which is required for the building footprint, associated infrastructure and vehicle access and parking. Once construction is complete, no further clearance will be required for this development.

The vegetation is currently in a regenerative state post the 2019-20 KI Complex Bushfire. As such, it is providing limited habitat for a range of native fauna. As the vegetation recovers it will gradually provide habitat for a wider range of species. As there was previously a development on this site, the native fauna that are currently residing there are used to low level human disturbance. The potential species that recolonise the area will also quickly become accustomed to this low-level disturbance as it was there pre-arrival.

## 4.4 Address the Mitigation Hierarchy

*When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must have regard to the mitigation hierarchy. The NVC will also consider, with the aim to minimize, impacts on biological diversity, soil, water and other natural resources, threatened species or ecological communities under the EPBC Act or listed species under the NP&W Act.*

### **a) Avoidance – outline measures taken to avoid clearance of native vegetation**

Avoidance is not possible as regulations have changed since the last development was built that require the clearance of more vegetation to create Bushfire Asset Protection Zones. The development has been carefully designed to have a minimal footprint and be positioned over existing cleared areas.

### **b) Minimization – if clearance cannot be avoided, outline measures taken to minimize the extent, duration and intensity of impacts of the clearance on biodiversity to the fullest possible extent (whether the impact is direct, indirect or cumulative).**

The previous development was spread over a larger area than the new proposed development and vegetation was left in between many of the buildings. The new development will utilise as much of these cleared areas as possible to minimise the clearance of native vegetation. All components of the facility (i.e. visitor centre, research facility, café, staff office and accommodation) have been incorporated into one structure, thereby minimising the Bushfire Asset Protection Zone around buildings.

Access to the facility will be via the same road as for the previous development. Many of the car parks will utilise previously cleared areas, further minimising the clearance for this development. Existing cleared areas will be utilised during the construction process for hard pans and the stockpiling of materials. This will minimise the impact on the surrounding bushland and negate the need to clear further vegetation.

### **c) Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimized, such as allowing for the re-establishment of the vegetation.**

Restoration of previously cleared areas that are not required for the proposed new development will be rehabilitated and or restored in line with CFS Bushfire Asset Protection Zone Guidelines and in consultation with appropriate ecologists and botanists.

### **d) Offset – any adverse impact on native vegetation that cannot be avoided or further minimized should be offset by the achievement of a significant environmental benefit that outweighs that impact.**

*The NVC will only consider an offset once avoidance, minimization and restoration have been documented and fulfilled. The SEB Policy explains the biodiversity offsetting principles that must be met.*

The SEB offset will be met via payment to the Native Vegetation Branch Fund.

## 4.5 Principles of Clearance (Schedule 1, Native Vegetation Act 1991)

The Native Vegetation Council will consider Principles 1(b), 1(c) and 1(d) when assigning a level of Risk under Regulation 16 of the Native Vegetation Regulations. The Native Vegetation Council will consider all the Principles of

clearance of the Act as relevant, when considering an application referred under the *Planning, Development and Infrastructure Act 2016*.

Principle of clearance	Considerations
<b>Principle 1a - it comprises a high level of diversity of plant species</b>	<p><u>Relevant information</u></p> <p>KI 0206 <i>Eucalyptus baxteri</i> low woodland over <i>Allocasuarina striata</i> shrubs</p> <p>Native: 59; Introduced: 2</p> <p><b>Bushland Plant Diversity Score - 28</b></p>
	<p><u>Assessment against the principles</u></p> <p><b><u>Seriously at Variance</u></b></p> <p>- KI 0206 <i>Eucalyptus baxteri</i> low woodland over <i>Allocasuarina striata</i> shrubs</p>
	<p><u>Moderating factors that may be considered by the NVC</u></p> <p>As the clearance area is within a very large patch of native vegetation, less than 0.25% of the patch is going to be cleared.</p>
<b>Principle 1b - significance as a habitat for wildlife</b>	<p><u>Relevant information</u></p> <p><u>EPBC Act - Endangered</u> KI Dunnart, Short-beaked Echidna and Southern Brown Bandicoot</p> <p><u>EPBC Act – Vulnerable</u> Bassian Thrush</p> <p><u>NPW SA Act – Vulnerable</u> Heath Goanna</p> <p><u>NPW SA Act – Rare</u> Bush Stonecurlew, Cape Barren Goose, Shy Heathwren, Restless Flycatcher, White-bellied Whipbird, Southern Emuwren, Painted Buttonquail and Common Brushtail Possum.</p> <p>In its present regenerative state, the vegetation is providing habitat for a limited number of species. As regeneration continues it will provide habitat for an increasing number of species.</p> <p>The site is contiguous with a vast tract of vegetation on the eastern, southern and western sides.</p> <p><b>Threatened Fauna Score – 0.1</b> <b>Unit biodiversity Score – 65.77</b></p>
	<p><u>Assessment against the principles</u></p> <p><b><u>Seriously at Variance</u></b></p> <p>- KI 0206 <i>Eucalyptus baxteri</i> low woodland over <i>Allocasuarina striata</i> shrubs</p>
	<p><u>Moderating factors that may be considered by the NVC</u></p>



	<p>All of the threatened species that have been recorded within 5km of 23 Flinders Road, Vivonne Bay are highly mobile and the clearance area is very small within a very large patch of intact vegetation. Because of these two factors, the clearance will have minimal impact on these threatened species.</p> <p>The site does not provide feeding or nesting habitat for Bassian Thrush, Cape Barren Goose, Shy Heathwren, Southern Emuwren or Painted Buttonquail.</p>
<p><b>Principle 1c - plants of a rare, vulnerable or endangered species</b></p>	<p><u>Relevant information</u></p> <p>NPW SA Act – Rare  <i>Eucalyptus fasciculosa</i>, <i>Zieria veronicea ssp. insularis</i> and <i>Xanthorrhoea semiplana ssp. tateana</i></p> <p>There were few of the listed species scattered throughout the clearance site. This clearance will have a minimal impact on the local populations of these species.</p> <p><b>Threatened Flora Score(s) – 0.04</b></p>
	<p><u>Assessment against the principles</u></p> <p><b><u>At Variance</u></b>  - KI 0206 <i>Eucalyptus baxteri</i> low woodland over <i>Allocasuarina striata</i> shrubs</p>
	<p><u>Moderating factors that may be considered by the NVC</u></p> <p><i>Eucalyptus fasciculosa</i> and <i>Xanthorrhoea semiplana ssp. tateana</i> have a wide distribution across the whole of Kangaroo Island, so are not considered as Regionally Rare. Whilst <i>Zieria veronicea ssp. insularis</i> is mostly restricted to the western end of KI, there are many populations containing good numbers of plants.</p> <p>This clearance will have a minimal impact on these species as a whole across the island.</p>
<p><b>Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered:</b></p>	<p><u>Relevant information</u></p> <p>No threatened communities or ecosystems were found on 8125 South Coast Road, Karatta.</p> <p><b>Threatened Community Score - 1</b></p>
	<p><u>Assessment against the principles</u></p> <p><b><u>Not at Variance</u></b>  - KI 0206 <i>Eucalyptus baxteri</i> low woodland over <i>Allocasuarina striata</i> shrubs</p>
	<p><u>Moderating factors that may be considered by the NVC</u></p>
<p><b>Principle 1e - it is significant as a remnant of vegetation in an area which has been extensively cleared.</b></p>	<p><u>Relevant information</u></p> <p>IBRA Association: Gantheaume, 88% remnancy  IBRA subregion: Kangaroo Island, 52% remnancy</p> <p>The remnant vegetation surrounding the proposed development is in very good predominately weed free condition. As it is part of a vast tract of native vegetation that is largely undisturbed, it will likely stay in this condition for many years to come.</p> <p><b>Total Biodiversity Score – 65.60</b></p>

	<u>Assessment against the principles</u>  <b><u>At Variance</u></b> - KI 0206 <i>Eucalyptus baxteri</i> low woodland over <i>Allocasuarina striata</i> shrubs
	<u>Moderating factors that may be considered by the NVC</u>
<b>Principle 1f - it is growing in, or in association with, a wetland environment.</b>	<u>Relevant information</u>  The clearance area is not in or part of a wetland.
	<u>Assessment against the principles</u>  <b><u>Not at Variance</u></b> - KI 0206 <i>Eucalyptus baxteri</i> low woodland over <i>Allocasuarina striata</i> shrubs
	<u>Moderating factors that may be considered by the NVC</u>
<b>Principle 1g - it contributes significantly to the amenity of the area in which it is growing or is situated.</b>	<u>Relevant information</u>  The clearance for the proposed new Flinders Chase Visitor Hub will not be visible from South Coast Road. As the area was once developed for tourism, the new facility is not out of character with the former land use.
	N/A
	<u>Moderating factors that may be considered by the NVC</u>

[Principles of Clearance](#) (h-m) will be considered by comments provided by the local NRM Board or relevant Minister. The Data Report should contain information on these principles where relevant and where sufficient information or expertise is available.

## 4.6 Risk Assessment

**Determine the level of risk associated with the application**

<b>Total clearance</b>	No. of trees	Several
	Area (ha)	0.9974
	Total biodiversity Score	65.60
<b>Seriously at variance with principle 1(b), 1(c) or 1 (d)</b>		1 (b)
<b>Risk assessment outcome</b>		Level 4

## 4.7 NVC Guidelines

**Provide any other information that demonstrates that the clearance complies with any relevant NVC guidelines related to the activity.**

All relevant information has been discussed above.

## 5. Clearance summary

**Clearance Area(s) Summary table**

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	1	28	1	.04	.1	65.8	1	65.60	1			68.88	\$44,261.20	\$2,434.37
						<b>Total</b>	<b>1</b>	<b>65.50</b>				<b>68.88</b>	<b>\$44,261.20</b>	<b>\$2,434.37</b>

**Totals summary table**

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
<b>Application</b>	65.50	68.88	\$44,261.20	\$2,434.37	\$46,695.57

<b>Economies of Scale Factor</b>	0.35
<b>Rainfall (mm)</b>	696

## 6. Significant Environmental Benefit

A Significant Environmental Benefit (SEB) is required for approval to clear under Division 5 of the *Native Vegetation Regulations 2017*. The NVC must be satisfied that as a result of the loss of vegetation from the clearance that an SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

### ACHIEVING AN SEB

Indicate how the SEB will be achieved by ticking the appropriate box and providing the associated information:

- ☐ Establish a new SEB Area on land owned by the proponent.
- ☐ Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. No. \_\_\_\_\_
- ☐ Apply to have SEB Credit assigned from another person or body. The [application form](#) needs to be submitted with this Data Report.

☐ Apply to have an SEB to be delivered by a Third Party. The [application form](#) needs to be submitted with this Data Report.

☒ Pay into the Native Vegetation Fund.

### **PAYMENT SEB**

If a proponent proposes to achieve the SEB by paying into the Native Vegetation Fund, summary information must be provided on the amount required to be paid and the manner of payment:

- Payment of \$44,261.20 plus \$2,434.37 administration fee
- Full payment will be made before clearance occurs.



# 7. Appendices

## Appendix 1. Fauna Species List

Threatened or Introduced Animal Species Recorded or Observed (Native and Introduced)		Threatened Species				Introduced Species
Species	Common Name	EPBC	SA	Past Record	Observed	
<i>Acanthiza lineata whitei</i>	Striated Thornbill (KI)			Yes	Yes	
<i>Acanthiza pusilla zietzi</i>	Brown Thornbill (KI)			Yes		
<i>Acanthorhynchus tenuirostris halmaturina</i>	Eastern Spinebill (KI, MLR, so			Yes	Yes	
<i>Accipiter fasciatus fasciatus</i>	Brown Goshawk			Yes		
<i>Aegotheles cristatus cristatus</i>	Australian Owlet-nightjar			Yes		
<i>Anthochaera carunculata clelandi</i>	Red Wattlebird (KI)			Yes		
<i>Anthochaera chrysoptera halmaturina</i>	Little Wattlebird (KI)			Yes		
<i>Aquila audax</i>	Wedge-tailed Eagle			Yes		
<i>Artamus cyanopterus</i>	Dusky Woodswallow			Yes		
<i>Burhinus grallarius</i>	Bush Stonecurlew		R	Yes		
<i>Cacatua sanguinea sanguinea</i>	Little Corella			Yes		
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo			Yes		
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo			Yes		
<i>Cereopsis novaehollandiae novaehollandiae</i>	Cape Barren Goose		R	Yes		
<i>Chalcites basalis</i>	Horsfield's Bronze Cuckoo			Yes		
<i>Chalcites lucidus</i>	Shining Bronze Cuckoo			Yes		
<i>Colluricincla harmonica</i>	Grey Shrike-thrush			Yes		
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike			Yes		
<i>Corvus coronoides</i>	Australian Raven			Yes		
<i>Corvus mellori</i>	Little Raven			Yes		
<i>Elanus axillaris</i>	Black-shouldered Kite			Yes		
<i>Eolophus roseicapilla</i>	Galah			Yes		
<i>Epthianura albifrons</i>	White-fronted Chat			Yes		
<i>Falco berigora</i>	Brown Falcon			Yes		
<i>Falco cenchroides</i>	Nankeen Kestrel			Yes		
<i>Gliciphila melanops</i>	Tawny-crowned Honeyeater			Yes		
<i>Grallina cyanoleuca</i>	Magpie-lark			Yes		
<i>Gymnorhina tibicen</i>	Australian Magpie			Yes		
<i>Hirundo neoxena</i>	Welcome Swallow			Yes		
<i>Hylacola cauta halmaturina</i>	Shy Heathwren (Kangaroo Isla		SP	Yes		
<i>Lichenostomus cratitius cratitius</i>	Purple-gaped Honeyeater (KI)			Yes		
<i>Malurus cyaneus ashbyi</i>	Superb Fairywren (KI)			Yes		
<i>Melithreptus brevirostris magnirostris</i>	Brown-headed Honeyeater (K			Yes		
<i>Melithreptus lunatus</i>	White-naped Honeyeater			Yes		
<i>Myiagra inquieta</i>	Restless Flycatcher		R	Yes		
<i>Neochmia temporalis</i>	Red-browed Finch			Yes		
<i>Nesoptilotis leucotis thomasi</i>	White-eared Honeyeater (KI)			Yes		
<i>Ninox boobook</i>	Southern Boobook			Yes		
<i>Pachycephala pectoralis</i>	Australian Golden Whistler			Yes		
<i>Pardalotus punctatus</i>	Spotted Pardalote			Yes		
<i>Pardalotus striatus</i>	Striated Pardalote			Yes		
<i>Parvipsitta porphyrocephala</i>	Purple-crowned Lorikeet			Yes		
<i>Petrochelidon nigricans</i>	Tree Martin			Yes		
<i>Petroica boodang boodang</i>	Scarlet Robin		R	Yes		
<i>Phaps chalcoptera</i>	Common Bronzewing			Yes		
<i>Phaps elegans</i>	Brush Bronzewing			Yes		
<i>Phylidonyris novaehollandiae campbelli</i>	New Holland Honeyeater (KI)			Yes		
<i>Phylidonyris pyrropterus halmaturinus</i>	Crescent Honeyeater (KI and			Yes		
<i>Platycercus elegans melanopterus</i>	Crimson Rosella (KI)			Yes		
<i>Psophodes leucogaster lashmari</i>	White-bellied Whipbird (Kanga		R	Yes		
<i>Rhipidura albiscapa</i>	Grey Fantail			Yes		
<i>Rhipidura leucophrys</i>	Willie Wagtail			Yes		
<i>Stagonopleura bella samueli</i>	Beautiful Firetail (MLR and KI)		SP	Yes		
<i>Stipiturus malachurus halmaturinus</i>	Southern Emuwren (Kangaroo		R	Yes		
<i>Strepera versicolor halmaturina</i>	Black-winged Currawong (KI)			Yes		

<i>Trichoglossus haematodus</i>	Rainbow Lorikeet			Yes		
<i>Tumix varius</i>	Painted Buttonquail		R	Yes		
<i>Vanellus miles</i>	Masked Lapwing			Yes		
<i>Zoothera lunulata halmaturina</i>	Bassian Thrush (southern FR)	VU		Yes		
<i>Zosterops lateralis</i>	Silvereye			Yes	Yes	
<i>Cercartetus concinnus</i>	Western Pygmy-possum			Yes		
<i>Cercartetus lepidus</i>	Little Pygmy-possum			Yes		
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot (S)	EN	V	Yes		
<i>Macropus (Notamacropus) eugenii eugenii</i>	Tammar Wallaby			Yes		
<i>Macropus fuliginosus fuliginosus</i>	Western Grey Kangaroo (KI)			Yes		
<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat			Yes		
<i>Rattus fuscipes</i>	Bush Rat			Yes		
<i>Sminthopsis aitkeni</i>	Kangaroo Island Dunnart	EN	E	Yes		
<i>Tachyglossus aculeatus multiaculeatus</i>	Short-beaked Echidna (Kanga)	EN	E	Yes		
<i>Trichosurus vulpecula</i>	Common Brushtail Possum		R	Yes		
<i>Vespadelus regulus</i>	Southern Forest Bat			Yes		
<i>Acritoscincus duperreyi</i>	Eastern Three-lined Skink			Yes		
<i>Hemiergis peronii</i>	Four-toed Earless Skink			Yes		
<i>Lampropholis guichenoti</i>	Garden Skink			Yes		
<i>Lerista bougainvillii</i>	Bougainville's Skink			Yes		
<i>Lerista dorsalis</i>	Southern Four-toed Slider			Yes		
<i>Liopholis whitii</i>	White's Skink			Yes		
<i>Notechis scutatus</i>	Tiger Snake	ssp		Yes		
<i>Underwoodisaurus milii</i>	Common Barking Gecko			Yes		
<i>Varanus rosenbergi</i>	Heath Goanna		V	Yes		

## Vegetation Condition Scores

<b>SITE:</b>	Flinders Chase Visitor Hub
<b>BCM COMMUNITY</b>	KI 1.1 Woodlands, low woodlands and mallee with dense sclerophyll shrub understorey
<b>VEGETATION ASSOCIATION DESCRIPTION</b>	KI 0301 Eucalyptus baxteri low woodland over Allocasuarina striata
<b>SIZE OF SITE (Ha)</b>	0.9974

Benchmarked attributes (Scores determined by comparing to a Benchmark community)				Native Plant Life Forms	Cover rating
<b>Number of Native Species</b> (Minus herbaceous annuals for spring Surveys)	52			Trees > 15m	
<b>Native Plant Species Diversity Score</b> (max 30) from benchmark score <i>weighted by a factor of 2</i>	28.0			Trees 5 - 15 m	2
				Trees < 5m	3
<b>Number of regenerating native species</b>	40			Mallee > 5m	
<b>Regeneration Score</b> (max 12) from benchmark community weighted by a factor of 1.5	12			Mallee < 5m	
				Shrubs > 2m	
<b>Weed species</b> (Top 5 Cover x Invasiveness)	Cover (max 6)	Weed Threat Rating (max 5)	C x I	Shrubs 0.5 - 2m	2
Hypochaeris radicata	2	2	4	Shrubs < 0.5	3
Aira spp.	2	1	2	Forbs	2
Cirsium vulgare	1	2	2	Mat Plants	
			0	Grasses > 0.2m	
			0	Grasses < 0.2m	2
			8	Sedges > 1m	
<b>Weed Score</b> (max 15) from benchmark community			14	Sedges < 1m	2
				Hummock grasses	
				Vines, scramblers	1
				Mistletoe	
				Ferns	
				Grass-tree	2
				<b>Total</b>	19
<b>Native Plant Life Forms</b> (max 20) from benchmark score weighted by a factor of 2					16.0

Non-Benchmarked Attributes (Scores determined from direct field observations)		Is the community naturally treeless?	
<b>Native:exotic Understorey biomass Score</b> (max 5)	5	<b>Fallen Timber/Debris</b> (max 5)	2
		<b>Hollow-bearing trees Score</b> (max 5)	1
		<b>Mature Tree Score</b> (max 8)	0
		<b>Tree Canopy Cover Score</b> (max 5)	2

Vegetation Condition Score calculation	
<b>Positive Vegetation Attributes Score</b> = Native species diversity + Regeneration + Native Plant Life Forms Fallen timber/debris + Hollow-bearing trees - If the community Score is Not Benchmarked (SNB) for regeneration this score is multiplied 1.24 - If the community is naturally treeless this score is multiplied by 1.29	
	59.00
<b>Negative Vegetation Attributes Score</b> = (15 - Weeds) + ((10 - Biomass score - Tree Canopy Cover Score)exp2/2)	5.50
<b>VEGETATION CONDITION SCORE</b> (Positive veg attributes x ((80 - Negative vegetation attributes) / 80))	54.94






## Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) <b>Rare</b> community (0.1 pt)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) <b>Vulnerable</b> community (0.2 pts)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) <b>Endangered</b> community (0.3 pts)	<input type="checkbox"/>
Nationally (EPBC Act) <b>Vulnerable</b> community (0.35 pts)	<input type="checkbox"/>
Nationally (EPBC Act) <b>Endangered or Critically Endangered</b> community (0.4 pts)	<input type="checkbox"/>
Note; all sites will score a minimum Conservation Significance Score of 1	
<b>Threatened Community Score</b>	1
<b>Number of Threatened Flora Species recorded for the site (within the site)</b>	<b>Number</b>
*If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.	
State <b>Rare</b> species recorded (1 pt each)	1
State <b>Vulnerable</b> species recorded (2.5 pt each)	0
State <b>Endangered</b> recorded (5 pts each)	0
Nationally <b>Vulnerable</b> species recorded (10 pts each)	0
Nationally <b>Endangered or Critically endangered</b> species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16 pts; 20 or > = 0.2 pts	1
<b>Threatened Flora Score</b>	0.04
<b>Potential habitat for Threatened Fauna Species (number observed or previously recorded)</b>	<b>Number</b>
*If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.	
State <b>Rare</b> species observed or locally recorded (1 pt each)	8
State <b>Vulnerable</b> species observed or locally recorded (2.5 pt each)	1
State <b>Endangered</b> species observed or locally recorded (5 pt each)	0
Nationally <b>Vulnerable</b> species observed or locally recorded (10 pts each)	1
Nationally <b>Endangered or Critically endangered</b> species observed or locally recorded (20 pts each)	3
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.06 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	80.5
<b>Threatened Fauna Score</b>	0.1
<b>CONSERVATION SIGNIFICANCE SCORE</b>	1.14

<b>Total Scores for the Site</b>		Vegetation Condition x Landscape Context x Conservation Significance =	
	<b>Score</b>	<b>UNIT BIODIVERSITY SCORE</b>	65.77
LANDSCAPE CONTEXT SCORE	1.05	<b>Total Biodiversity Score</b>	
VEGETATION CONDITION SCORE	54.94	(Biodiversity Score x hectares)	65.60
CONSERVATION SIGNIFICANCE SCORE	1.14		

<b>Photo Point and Vegetation Survey Location</b>	<b>Direction of the Photo</b>
	223°
	<b>GPS Reference</b>
	Datum WGS84
	Zone (52, 53 or 54) 53
	Easting (6 digits) 661283.2
	Northing (7 digits) 6019742
	<b>Description</b>
	Eucalyptus obliqua woodland over Banksia marginata and Hibbertia fasciculata in very good regenerative condition post fire.

What is the purpose of Assessment?	<input type="button" value="Clearance"/> <input type="button" value="SEB Area"/> <input type="button" value="Other"/>
<b>Assessment for Clearance</b>	
Loss Factor	1.0
Loadings for clearance of protected areas	
Reductions for rehabilitation of impact site	
<b>SEB Points required</b>	68.88
Approximate hectares required	8.61
Economies of Scale Factor	0.35
Mean Annual rainfall for the site (mm)	696
Payment into the fund (GST Exclusive)	\$44,261.20
Administration fee (GST Inclusive)	\$2,434.37



## Appendix 3. Flora Species List

Plant Species Recorded (Native and Introduced)		Listed Species			Natives only		Introduced Species
Species	Common Name	EPBC	SA	Not in quadrat	Regen	Annual Herbs Spring survey	
<i>Eucalyptus cosmophylla</i>	Cup Gum						
<i>Hibbertia fasciculata</i>	Bundled Guinea-flower				Yes		
<i>Dillwynia sericea</i>	Showy Parrot-pea				Yes		
<i>Xanthosia leiophylla</i>	#N/A	#N/A	#N/A			Yes	#N/A
<i>Stenanthra conostephioides</i>	Flame Heath				Yes		
<i>Leucopogon costatus</i>	Twiggy Beard-heath				Yes		
<i>Hibbertia virgata</i>	Twiggy Guinea-flower				Yes		
<i>Muehlenbeckia adpressa</i>	Climbing Lignum				Yes		
<i>Dodonaea viscosa ssp. angustissima</i>	Narrow-leaf Hop-bush				Yes		
<i>Acacia pycnantha</i>	Golden Wattle				Yes		
<i>Drosera schmutzii</i>						Yes	
<i>Acianthus caudatus</i>	Mayfly Orchid					Yes	
<i>Opercularia varia</i>	Variable Stinkweed						
<i>Pteridium esculentum ssp. esculentum</i>	Bracken Fern						
<i>Choretrum glomeratum</i>	White Sour-bush				Yes		
<i>Pelargonium australe</i>	Austral Stork's-bill					Yes	
<i>Eucalyptus fasciculosa</i>	Pink Gum		R		Yes		
<i>Eucalyptus obliqua</i>	Messmate Stringybark				Yes		
<i>Goodenia blackiana</i>	Native Primrose				Yes		
<i>Acrotriche depressa</i>	Native Currant				Yes		
<i>Lepidosperma canescens</i>	Hoary Rapier-sedge						
<i>Thelymitra sp.</i>	Sun-orchid					Yes	
<i>Thomasia petalocalyx</i>	Paper-flower				Yes		
<i>Adenanthos terminalis</i>	Yellow Gland-flower				Yes		
<i>Boronia filifolia</i>	Slender Boronia				Yes		
<i>Zieria veronicea ssp. insularis</i>	#N/A	#N/A	#N/A		Yes		#N/A
<i>Drosera macrantha ssp. planchonii</i>	Climbing Sundew					Yes	
<i>Leptospermum continentale</i>	Prickly Tea-tree				Yes		
<i>Allocasuarina striata</i>	Stalked Oak-bush				Yes		
<i>Cotula australis</i>	Common Cotula				Yes		
<i>Drosera auriculata</i>	Tall Sundew					Yes	
<i>Hibbertia pallidiflora</i>	Round-leaf Guinea-flower				Yes		
<i>Ixodia achillaeoides ssp. alata</i>	Hills Daisy				Yes		
<i>Prostanthera spinosa</i>	Spiny Mintbush				Yes		
<i>Goodia medicaginea</i>	Western Golden-tip				Yes		
<i>Callistemon rugulosus</i>	Scarlet Bottlebrush				Yes		
<i>Hardenbergia violacea</i>	Native Lilac				Yes		
<i>Adriana quadripartita</i>	Coast Bitter-bush				Yes		
<i>Marianthus bignoniaceus</i>	Orange Bell-climber				Yes		
<i>Eucalyptus cladocalyx ssp. crassa</i>	Sugar Gum				Yes		
<i>Rytidosperma sp.</i>	Wallaby-grass						
<i>Acacia myrtifolia</i>	Myrtle Wattle				Yes		
<i>Lasiopetalum schulzenii</i>	Drooping Velvet-bush				Yes		
<i>Exocarpos cupressiformis</i>	Native Cherry						
<i>Banksia marginata</i>	Silver Banksia				Yes		
<i>Caustis pertandra</i>	Thick Twist-rush						
<i>Leptospermum myrsinoides</i>	Heath Tea-tree				Yes		
<i>Microlaena stipoides var. stipoides</i>	Weeping Rice-grass						
<i>Acacia paradoxa</i>	Kangaroo Thorn				Yes		
<i>Gyrostemon thesioides</i>	Broom Wheel-fruit				Yes		
<i>Scaevola aemula</i>	Fairy Fanflower				Yes		
<i>Acacia provincialis</i>	Swamp Wattle				Yes		
<i>Orthrosanthus multiflorus</i>	Morning Flag						
<i>Apalochlamys spectabilis</i>	Showy Firebush				Yes		
<i>Banksia ornata</i>	Desert Banksia				Yes		

<i>Olearia teretifolia</i>	Cypress Daisy-bush				Yes		
<i>Euchiton involucratus</i>	Star Cudweed						
<i>Xanthorrhoea semiplana ssp. tateana</i>	#N/A	#N/A	#N/A				#N/A
<i>Juncus pallidus</i>	Pale Rush						
<i>Hypochaeris radicata</i>	Rough Cat's Ear						*
<i>Aira sp.</i>	Hair-grass						*
<i>Cirsium vulgare</i>	Spear Thistle						*