

Native Vegetation Clearance

Kessell Rd, Goolwa

Clearance under the *Native Vegetation Regulations 2017*

August 2023

Prepared by Jeremy Ross-Carter



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1. Application information

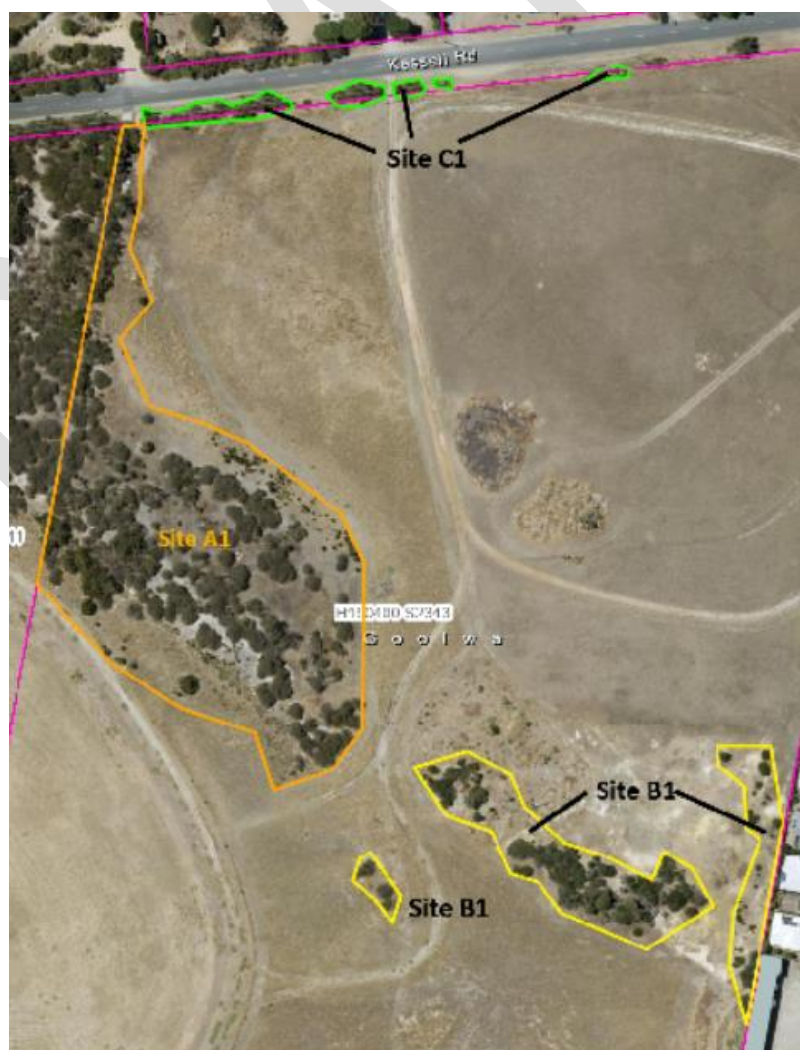
Application Details

Applicant:	Hometown Australia Communities		
Key contact:			
Landowner:	Hometown Australia Communities		
Site Address:	Kessell Rd, Goolwa SA 5214		
Local Government Area:	Alexandrina Council	Hundred:	Goolwa
Title ID:	CT/5442/884	Parcel ID	H150400 S2343

Summary of proposed clearance

Purpose of clearance	Clearance required for proposed residential subdivision.
Native Vegetation Regulation	Regulation 12, Schedule 1; clause 35, Residential subdivision
Description of the vegetation under application	1.26 ha of <i>Callistemon rugulosus</i> +/- <i>Melaleuca uncinata</i> infrequently inundated tall shrubland 0.39ha of <i>Melaleuca halmaturorum</i> open woodland 0.06ha of <i>Eucalyptus gracilis</i> open Mallee
Total proposed clearance -	1.71 hectares
Level of clearance	Level 4
Overlay (Planning and Design Code)	Native Vegetation Overlay

Map of proposed clearance area



Mitigation hierarchy	The applicant has advised that the civils works required to construct the drainage swale and other associated stormwater infrastructure to accommodate the runoff from the residential development will result in the loss of all the vegetation currently growing in Site A1. As noted in Appendix 1c, the drainage swale area will be landscaped to create an open space amenity area for residents which will include walking paths, seating and communal/picnic areas. In addition, to eradicate the high populations of weeds (including four declared plants) and destruction of the extensive rabbit warren network considerable ground disturbing activities will be required. Due to the introduced flora growing amongst most of the native vegetation, particularly Bridal Creeper within the canopies, and rabbit warren entry points exploiting native vegetation for cover, controlling these pest plants and animals would not likely be possible without impacting the native vegetation. The applicant also advised that impacts to native vegetation in Site B1 and C1 cannot be avoided due to location of the proposed subdivisions (Site B1), underground service and footpath in the road reserve (Site C1) and pest plant and animal control.
SEB Offset proposal	Payment of \$42,395.76

2. Purpose of clearance

2.1 Description

Jeremy Ross-Carter was commissioned by Hometown Australia Communities to conduct a native vegetation clearance assessment for the proposed residential subdivision at Kessell Rd, Goolwa SA 5214 (Map 1) and to assess the proposed clearance envelope against the Clearance Requirements of the *Native Vegetation Act 1991* and *Native Vegetation Regulations 2017*.

2.2 Background

The vegetation under application is located within the Goolwa IBRA Associations of South Australia.

The landform in the Goolwa IBRA Association is described as low undulating plains on calcrete plains with numerous small depressions among irrigated pastures. Approximately 9% of the Goolwa IBRA Association is mapped as remnant native vegetation.

According to NatureMaps Generalised Land Use layer (2023), the subject allotment is described as livestock. Adjoining properties are zoned as residential, rural residential, livestock, utilities and recreation.

The applicant advised that the site was historically used as a horse training track along with the adjoining site to the west. Evidence of the racing track and associated land modifications are evident in site aerials. The applicant purchased the site in late-2018 and in 2019 submitted a development application to expand the existing Seachange Village Residential Park. In 2022, Alexandrina Council granted a Planning Consent (DA455/999/19) for a Residential Park comprising 181 dwelling sites, communal amenities, landscaping, infrastructure and services. The applicant advises that the development has been designed to create a landscaped corridor for stormwater management, treatment and detention, comprising native and endemic landscape species. The applicant has progressed with construction documentation with a view to securing Building Consent.

2.3 Details of the proposal

The applicant is proposing to clear the site to facilitate the applicant's development in accordance with the Planning Permit and construction design. The development includes subdividing the subject property to expand the existing Seachange Village Residential Park. The development will include 181 dwellings, stormwater infrastructure, recreation facilities (community centre bowling green swimming pool) and landscaping. The road reserve along Kessell Road will be developed to include footpaths and underground services such as water, sewage, telecommunications and electricity.

Refer to Appendix 1a. Kessell Rd, Goolwa Masterplan, Appendix 1b. Construction and Services Plan and Appendix 1c. Kessell Rd, Goolwa Landscape Concept for further details regarding the proposed development.

2.4 Approvals required or obtained

- *Native Vegetation Act 1991*: Consent to clear native vegetation under the *Native Vegetation Act 1991* is subject to this application and data report.
- *Planning, Development and Infrastructure Act 2016*: Development Application Number - 45599919.
- *Environment Protection and Biodiversity Conservation Act 1999*: As Site A1 and B1 are considered to provide habitat for Nationally threatened fauna species, a referral under the *Environment Protection and Biodiversity Conservation Act 1999* may be required.

2.5 Native Vegetation Regulation

Regulation 12, Schedule 1; clause 35, Residential subdivision

2.6 Development Application information (if applicable)

Native Vegetation Overlay.

3. Method

Prior to the site survey the following desktop assessments were conducted:

- Review of Atlas Living Australia to determine the likelihood of State listed flora and fauna species that may be present on or near the subject land.
- Review of the EPBC Act 1999 Protected Matter Search Tool within 5km of the site to determine the likelihood of nationally listed flora species or habitat of conservation significance that may be present within the vicinity of the subject land.

The project site was surveyed on 23 July 2023. The site survey was undertaken in accordance with the *Native Vegetation Council (NVC) Bushland Assessment Manual 2020*. The aim of the site survey was to:

- record the vegetation association and flora species present;
- record the condition of the vegetation present;
- record any threatened flora species, if present; and
- record any opportunistic fauna sightings.

Map 1. Location of subject property



Map data is compiled from a variety of sources and hence its accuracy is variable.

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Datum: Geocentric Datum of Australia, 2020
Projection: Web Mercator (Auxiliary Sphere)



Government of South Australia
Department for Environment
and Water

4. Assessment Outcomes

4.1 Vegetation Assessment

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

The land type of the region is described as rises and plains with mainly neutral to alkaline clay loamy to clayey soil. The subject land soils are mapped as brown or grey cracking clay and sand over poorly structured clay. The majority of the subject property is void of native vegetation with the land being historically used for grazing and potentially cropping. However, the central part of the property contains two blocks of native bushland. Site A1 is not mapped as a waterbody or wetland on NatureMaps, however, historical satellite images show that the site is infrequently inundated with water (2005 and 2016-2017). However, the applicant considers Site A1 an artificial stormwater detention basin due to historic earthworks having a damming effect on flows. The applicant also noted that Alexandrina Council has approved the projects stormwater management and native landscaping as part of the Planning Permit.

The native vegetation in Site A1 is mostly reduced to mid height shrubs. Several trees were noted in the western extent of the site where the vegetation community transitions into a mallee woodland on higher ground. Native ground cover is limited to a few species and generally found at the base of shrubs and trees or creeping into the canopies. Site B1 is located on higher sandy ground with reduced native species cover, and mostly limited to mid height shrubs and a few *Melaleuca halmaturorum* trees. Site C1 contains a narrow strip of vegetation within the road reserve. The understorey and ground cover in all sites is dominated by introduced flora, with notable populations of declared plants. Significant numbers of rabbits and warren were observed in all sites. Fox scats were also recorded.

Details of the vegetation proposed to be impacted

Site A1: Proposed impacts to vegetation due to construction of stormwater infrastructure, landscaping, declared plant removal and rabbit warren destruction.

Vegetation Association	<i>Callistemon rugulosus</i> +/- <i>Melaleuca uncinata</i> +/- <i>Acacia ligulata</i> infrequently inundated tall shrubland
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Photo 1: Viewing west with soil stockpiles and dense weed cover in foreground



Photo 2: Viewing north with dense weed cover in foreground



Photo 3: Viewing west



Photo 4: Viewing west



General description	<i>Callistemon rugulosus</i> (Scarlet Bottlebrush) +/- <i>Melaleuca uncinata</i> (Broombush) +/- <i>Acacia ligulata</i> (Umbrella Bush) infrequently inundated tall shrubland over <i>Rhagodia candolleana</i> ssp. <i>candolleana</i> (Sea-berry Saltbush), <i>Suaeda australis</i> (Austral Seablite) and <i>Muehlenbeckia gunnii</i> (Coastal Climbing Lignum). Several scattered <i>Eucalyptus gracilis</i> (Yorrell) were recorded in the far western section of Site A1 which form part of a mallee community that is located on the adjoining property. The <i>Eucalyptus gracilis</i> in Site A1 are on the edge of the mallee community and form part of the transition into the tall shrubland. The <i>Eucalyptus gracilis</i> were outside of the assessment quadrat. The groundcover is densely populated with introduced flora and accounts for approximately 80% of the understorey biomass. The dominant introduced species including <i>Aparagus asparagoides</i> f. (Bridal Creeper), <i>Echium plantagineum</i> (Salvation Jane), <i>Trifolium</i> sp. (Clover), <i>Oxalis pes-caprae</i> (Soursob), <i>Vicia sativa</i> (Common Vetch), <i>Aizoon pubescens</i> (Coastal Galenia), <i>Hypochaeris</i> sp. (Cat's Ear) and <i>Ehrharta longiflora</i> (Annual Veldt Grass). Four declared plant species listed under the <i>Landscape South Australia Act 2019</i> were recorded in Site A1. For the full species list recorded in Site A1 refer to Appendix 3. No species were recorded as regenerating.				
Threatened species or community	Site A1 doesn't met the criteria to be considered an endangered Swamp of the Fleurieu Peninsula under the EPBC Act, however it is considered an endangered ecosystem at the state level. The vegetation in Site A1 is considered to provide suitable habitat for 13 National and State threatened fauna species. For further information refer to Section 4.2 below.				
Landscape context score	1.17	Vegetation Condition Score	21.22	Conservation significance score	1.40
Unit biodiversity Score	34.76	Impact Area (ha)	1.26	Total biodiversity Score	43.80

Site B1: Proposed impacts to vegetation due to property subdivision and residential dwellings.

Vegetation Association	<i>Melaleuca halmaturorum</i> open woodland
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Photo 5: Viewing east



Photo 6: Viewing south



Photo 7: Viewing south



General description	<i>Melaleuca halmaturorum</i> (Swamp Paper-bark) open woodland over <i>Acacia paradoxa</i> (Kangaroo Thorn), <i>Rhagodia candolleana ssp. candolleana</i> (Sea-berry Saltbush), <i>Muehlenbeckia gunnii</i> (Coastal Climbing Lignum) and <i>Tetragonia implexicoma</i> (Bower Spinach). Site B1 is dominated by introduced flora with common species including <i>Aparagus asparagoides f.</i> (Bridal Creeper), <i>Olea europaea</i> (Olive), <i>Rhamnus alaternus</i> (Blowfly Bush), <i>Lycium ferocissimum</i> (African Boxthron), <i>Aizoon pubescens</i> (Coastal Galenia), <i>Asphodelus fistulosus</i> (Onion Weed), <i>Trifolium sp.</i> (Clover), <i>Oxalis pes-caprae</i> (Soursob) and <i>Mesembryanthemum sp.</i> (Iceplant). Five declared plant species listed under the <i>Landscape South Australia Act 2019</i> were recorded in Site B1. For the full species list recorded in Site B1 refer to Appendix 3. Only several <i>Melaleuca halmaturorum</i> (Swamp Paper-bark) are present with tree cover at approximately 10% and no hollows were observed. <i>Acacia paradoxa</i> (Kangaroo Thorn) was the only species recorded as regenerating. The site contains patchy litter layer with scattered fallen branches. Native species account for approximately 20% of the understorey biomass.				
Threatened species	The vegetation in Site B1 is considered to provide suitable habitat for two National and State threatened fauna species. For further information refer to Section 4.2 below.				
Landscape context score	1.14	Vegetation Condition Score	21.21	Conservation significance score	1.08
Unit biodiversity Score	26.11	Impact Area (ha)	0.39	Total biodiversity Score	10.18

Site C1: Proposed impacts to vegetation due to installation of underground services and construction of footpaths.

Vegetation Association	<i>Eucalyptus gracilis</i> very open mallee				
Photo 8: Viewing west					
					
General description	<i>Eucalyptus gracilis</i> (Yorrell) very open mallee over <i>Melaleuca uncinata</i> (Broombush), <i>Rhagodia candolleana</i> ssp. <i>candolleana</i> (Sea-berry Saltbush), <i>Muehlenbeckia gunnii</i> (Coastal Climbing Lignum) and <i>Tetragonia implexicoma</i> (Bower Spinach). Site C1 is dominated by introduced flora with common species including <i>Aparagus asparagoides</i> f. (Bridal Creeper), <i>Echium plantagineum</i> (Salvation Jane), <i>Trifolium</i> sp. (Clover), <i>Oxalis pes-caprae</i> (Soursob), <i>Vicia sativa</i> (Common Vetch), <i>Scabiosa atropurpurea</i> (Pincushion), <i>Hypochaeris</i> sp. (Cat's Ear), <i>Cynodon dactylon</i> var. <i>dactylon</i> (Couch) and <i>Ehrharta longiflora</i> (Annual Veldt Grass). Four declared plant species listed under the <i>Landscape South Australia Act 2019</i> were recorded in Site C1. For the full species list recorded in Site C1 refer to Appendix 3. Only one <i>Eucalyptus gracilis</i> (Yorrell) is present with tree cover at approximately 5% and no hollows were observed. No species recorded as regenerating. The site contains scattered fallen branches. Native species account for approximately 40% of the understorey biomass.				
Threatened species	The vegetation in Site C1 is unlikely to provide habitat for listed threatened fauna species.				
Landscape context score	1.14	Vegetation Condition Score	15.33	Conservation significance score	1.00
Unit biodiversity Score	17.47	Impact Area (ha)	0.06	Total biodiversity Score	1.05

Map 2. Vegetation under application

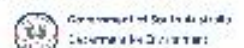


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4.2 Threatened Species assessment

Graham Carpenter from the Native Vegetation Group advised that the vegetation in Site A1 and B1 would provide suitable habitat for the threatened fauna species listed below in Table 3 (Personnel communication: 7 august 2023).

Note: Site C1 is unlikely to provide habitat for listed threatened fauna species.

Table 3. Threatened bird species that would utilise the vegetation under application as suitable habitat.

Species Name	Common Name	EPBC Act	NPW Act	Site A1	Site B1
<i>Coturnix ypsilophora australis</i>	Brown Quail		V	✓	
<i>Gallinago hardwickii</i>	Latham's Snipe		R	✓	
<i>Lewin pectoralis pectoralis</i>	Lewin's Rail		V	✓	
<i>Melanodryas cucullata cucullata</i>	Hooded Robin	EN	R	✓	✓
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater		V	✓	
<i>Neophema elegans elegans</i>	Elegant Parrot		R	✓	✓
<i>Plegadis falcinellus</i>	Glossy Ibis		R	✓	
<i>Rostratula australis</i>	Australian Painted-snipe	EN	E	✓	
<i>Spatula rhynchotis</i>	Australasian Shoveler		R	✓	
<i>Stagonopleura guttata</i>	Diamond Firetail	VU	V	✓	
<i>Stictonetta naevosa</i>	Freckled Duck			✓	
<i>Tringa glareola</i>	Wood Sandpiper		R	✓	
<i>Zapornia tabuensis</i>	Spotless Crake		R	✓	

NP&W Act; E= Endangered, V = Vulnerable, R= Rare

EPBC Act; EN = Endangered; VU = Vulnerable

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.

Direct Impacts

The direct impacts to native vegetation of the proposed development are discussed above in Section 4.1.

Indirect Impacts

No indirect impacts are foreseen for the proposed development.

Cumulative Impacts

There is no closely positioned clearances associated with this development and application.

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

The applicant has advised that the civils works required to construct the drainage swale and other associated stormwater infrastructure to accommodate the runoff from the residential development will result in the loss of all the vegetation currently growing in Site A1. As noted in Appendix 1c, the drainage swale area will be

landscaped to create an open space amenity area for residents which will include walking paths, seating and communal/picnic areas. In addition, to eradicate the high populations of weeds (including four declared plants) and destruction of the extensive rabbit warren network considerable ground disturbing activities will be required. Due to the introduced flora growing amongst most of the native vegetation, particularly Bridal Creeper within the canopies, and rabbit warren entry points exploiting native vegetation for cover, controlling these pest plants and animals would not likely be possible without impacting the native vegetation.

The applicant also advised that impacts to native vegetation in Site B1 and C1 cannot be avoid due to location of the proposed subdivisions (Site B1), underground service and footpath in the road reserve (Site C1) and pest plant and animal control.

- 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).**

See Section 4.4 above.

- 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.**

As noted, the development will involve landscaping open areas that will be used as part of the site's stormwater infrastructure. While not all species listed in the 'Plant Schedule' (Appendix 1b) are considered local natives, several species included in the Preliminary Landscape Plan are native species that would be found growing naturally in the Goolwa region.

- 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.**

As stated below in Section 6, the applicant has requested preference to provide the Significant Environmental Benefit (SEB) through payment into the NVC Fund.

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

The Native Vegetation Council will consider Principles 1(a)-(g) 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
Principle 1a - it comprises a high level of diversity of plant species	<u>Relevant information</u> - Site A1 contains 10 native species and 16 introduced species. - Site B1 contains 7 native species and 15 introduced species. - Site C1 contains 8 native species and 16 introduced species. Bushland Plant Diversity Score – - Site A1: 14 - Site B1: 15 - Site C1: 12
	<u>Assessment against the principles</u>
	<u>At Variance</u> – Site A1, B1 and C1
	<u>Moderating factors that may be considered by the NVC</u>
Principle 1b - significance	<u>Relevant information</u> Site A1 and B1 would provide suitable habitat for the threatened fauna species listed above in Table 3.

as a habitat for wildlife	Threatened Fauna Score – - Site A1: 0.1 - Site B1: 0.08 - Site C1: 0.0 Unit biodiversity Score – - Site A1: 34.76 - Site B1: 26.11 - Site C1: 17.47
	<u>Assessment against the principles</u> <u>Seriously at Variance</u> – Site A1 and B1 <u>Not at Variance</u> –C1
	<u>Moderating factors that may be considered by the NVC</u> As Site A1 continuing directly north of Site A1 and into the sewage works across Kessell Road, the NVC may consider the proposed clearance is of non-essential habitat for threatened species and the clearance will have a negligible impact on threatened species local population over the long term (i.e. next 20 to 50 years) and reduce this Principle to 'At variance'.
Principle 1c - plants of a rare, vulnerable or endangered species	<u>Relevant information</u> No threatened flora species recorded. Threatened Flora Scores - 0
	<u>Assessment against the principles</u> <u>Not at Variance</u> – Site A1, B1 and C1
	<u>Moderating factors that may be considered by the NVC</u>
Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered:	<u>Relevant information</u> Site A1 is infrequently inundated with water. The NVC may consider Site A1 a seasonal wetland which is endangered in the <i>provisional list of threatened ecosystems of South Australia</i>. Threatened Community Score – - Site A1: 1.3 - Site B1: 1 - Site C1: 1
	<u>Assessment against the principles</u> <u>Seriously at Variance</u> – Site A1 <u>Not at Variance</u> – B1 and C1
	<u>Moderating factors that may be considered by the NVC</u> The NVC may consider the vegetation in Site A1 is in a highly degraded state (vegetation score of 21.22) and is unlikely to return to a functional state without significant human intervention and reduce this Principle to 'At variance'.
Principle 1e - it is significant as a remnant of vegetation in	<u>Relevant information</u> Remnancy Figures - Goolwa IBRA Association: 9 - Murray Lakes and Coorong IBRA Subregion: 14 Total Biodiversity Score –

<i>an area which has been extensively cleared.</i>	• Site A1: 43.80 • Site B1: 10.18 • Site C1: 1.05
	<u>Assessment against the principles</u> <u>Seriously at Variance – Site A1 and B1</u> <u>At Variance –C1</u>
	<u>Moderating factors that may be considered by the NVC</u> Due to the low overall vegetation score, high number of weeds and rabbit populations within Site A1 and B1, the vegetation is considered to be in poor condition and is likely to continue to degrade over the long term (next 20 to 50 years). Therefore, the NVC may consider reducing this Principle to 'At Variance'.
<i>Principle 1f - it is growing in, or in association with, a wetland environment.</i>	<u>Relevant information</u> Site A1 is infrequently inundated with water. The NVC may consider Site A1 a seasonal wetland. Site B1 and C1 are not growing in a wetland environment.
	<u>Assessment against the principles</u> <u>Seriously at Variance – Site A1</u> <u>Not at Variance – Site B1 and C1</u>
	<u>Moderating factors that may be considered by the NVC</u> Site A1's vegetation condition score is considered low at 21.22. Therefore, the NVC may determine the site to be highly degraded and in poor condition and consider reducing this Principle to 'At Variance'.

4.6 Risk Assessment

Determine the level of risk associated with the application

Total clearance	No. of trees	Nil
	Area (ha)	1.71
	Total biodiversity Score	55.03
Seriously at variance with principle 1(b), 1(c) or 1 (d)	Site A1: 1(b), 1(d), 1(e) and 1(f) Site B1: 1(b) and 1(e)	
Risk assessment outcome	Level 4	

5. Clearance summary

Clearance Area 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	14	1.3	0	0.1	34.76	1.26	43.80	1	0	0	45.99	\$31,983.77	\$1,759.11
B	1	15	1	0	0.08	26.11	0.39	10.18	1	0	0	10.69	\$7,436.12	\$408.99
C	1	12	1	0	0.00	17.47	0.06	1.05	1	0	0	1.10	\$765.66	\$42.11
						Total	1.71	55.03				57.78	\$40,185.55	\$2,210.21

Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	55.03	57.78	\$40,185.55	\$2,210.21	\$42,395.76

Economies of Scale Factor	0.5
Rainfall (mm)	466

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.
- ☐ Apply to have SEB Credit assigned from another person or body.
- ☐ Apply to have an SEB to be delivered by a Third Party.
- ☒ 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:

- Total Payment amount required (including admin. fee): \$42,395.76

7. Appendices

Appendix 1a. Kessell Rd, Goolwa Masterplan (Submitted in PDF format)

Appendix 1b. Construction and Services Plan (Submitted in PDF format)

Appendix 1c. Kessell Rd, Goolwa Landscape Concept (Submitted in PDF format)

Appendix 2. Site A1 Bushland Assessment Scoresheet (Submitted in Excel format)

Appendix 2. Site B1 Bushland Assessment Scoresheet (Submitted in Excel format)

Appendix 2. Site C1 Bushland Assessment Scoresheet (Submitted in Excel format)

Appendix 3. Flora species list

Native Species	Common Name	Site A1	Site B1	Site C1
<i>Acacia ligulata</i>	Umbrella Bush	✓		
<i>Acacia paradoxa</i>	Kangaroo Thorn		✓ ^R	
<i>Acacia pycnantha</i>	Golden Wattle			✓
<i>Acacia spinescens</i>	Spiny Wattle			✓
<i>Callistemon rugulosus</i>	Scarlet Bottlebrush	✓		
<i>Clematis microphylla</i>	Old Man's Beard	✓		
<i>Dianella revoluta</i> var. <i>revoluta</i>	Black-anther Flax-lily	✓	✓	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush			✓
<i>Eucalyptus gracilis</i>	Yorrell	✓ ^O		✓
<i>Juncus kraussii</i>	Sea Rush	✓		
<i>Melaleuca halmaturorum</i>	Swamp Paper-bark		✓	
<i>Melaleuca uncinata</i>	Broombush	✓		✓
<i>Muehlenbeckia gunnii</i>	Coastal Climbing Lignum	✓	✓	✓
<i>Rhagodia candolleana</i> ssp. <i>candolleana</i>	Sea-berry Saltbush	✓	✓	✓
<i>Suaeda australis</i>	Austral Seablite	✓	✓	
<i>Tetragonia implexicoma</i>	Bower Spinach		✓	✓
Introduced Species	Common Name			
<i>Aizoon pubescens</i>	Coastal Galenia	✓		
<i>Asparagus asparagoides</i> f. ^D	Bridal Creeper	✓	✓	✓
<i>Asphodelus fistulosus</i>	Onion Weed		✓	✓
<i>Avena barbata</i>	Bearded Oat			✓
<i>Cynara cardunculus</i> ssp. <i>flavescens</i> ^D	Artichoke Thistle		✓	
<i>Cynodon dactylon</i> var. <i>dactylon</i>	Couch	✓		✓
<i>Echium plantagineum</i> ^D	Salvation Jane	✓		✓
<i>Ehrharta longiflora</i>	Annual Veldt Grass	✓	✓	✓
<i>Euphorbia terracina</i>	False Caper			✓
<i>Hypochaeris</i> sp.	Cat's Ear	✓		✓
<i>Lagurus ovatus</i>	Hare's Tail Grass	✓		✓
<i>Lycium ferocissimum</i> ^D	African Boxthorn		✓	✓
<i>Malva</i> sp.	Mallow		✓	
<i>Marrubium vulgare</i> ^D	Horehound		✓	
<i>Mesembryanthemum</i> sp.	Iceplant		✓	
<i>Olea europaea</i> ssp. ^D	Olive	✓	✓	✓
<i>Onopordum acanthium</i>	Scotch Thistle	✓	✓	
<i>Opuntia</i> sp. ^D		✓		
<i>Oxalis pes-caprae</i>	Soursob	✓	✓	✓
<i>Phalaris aquatica</i>	Phalaris	✓		✓

<i>Plantago lanceolata</i> var.	Ribwort	✓	✓	✓
<i>Rhamnus alaternus</i> ^D	Blowfly Bush		✓	
<i>Scabiosa atropurpurea</i>	Pincushion			✓
<i>Trifolium</i> sp.	Clover	✓	✓	✓
<i>Urtica urens</i>	Small Nettle	✓	✓	✓
<i>Vicia sativa</i> ssp.	Common Vetch	✓		

^R – Regenerating; ^D – Declared Plant; ^O – Outside quadrat

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