Native Vegetation Council

NATIVE VEGETATION MANAGEMENT PLAN

for a Significant Environmental Benefit
pursuant to the *Native Vegetation Act 1991*
or the *Native Vegetation Regulations 2017*

SEB Area Reference Name:

Registered Proprietor: Andrew and Rebekah Rosser

Period of Management Plan: 2021-2031

Plan authored by: P. Tucker

Native Vegetation Council
GPO Box 1047 (08) 8303 9777
Adelaide SA 5001 nvc@sa.gov.au

1 RECITAL

1) In this Plan, unless the contrary intention appears –

   a) "Native fauna" means an animal or animals of a species indigenous to South Australia

   b) “SEB Area” means an area of land that is protected and managed for conservation to provide a significant environmental benefit to offset the impacts of clearance of native vegetation that has been approved or may be approved sometime in the future

   c) "Owner" means the person who has executed this Agreement as the proprietor of the land containing the SEB Area and includes all successors in title and occupiers of the land. Where two or more persons are named as the Owner the rights and liabilities under this Agreement will pass to all such persons jointly and each of them severally

   d) “the Act” means the *Native Vegetation Act 1991*

   e) Words and phrases defined in the Act, shall for the purposes of this Agreement have the meanings defined in that Act.

2) This Management plan commences upon approval from the Native Vegetation Council (NVC) and may not be varied or terminated except by a written Agreement signed by both the NVC and the Owner.

3) This management plan is binding on, and enforceable against all owners and subsequent owners of the land described in Section 2 and remains operational in perpetuity or until it is rescinded by mutual agreement of the NVC and the Owner.

4) The obligations described in this management plan specifically applies to the land delineated as the “SEB area” in Section 2.4.

5) The Owner shall notify the NVC if any activity on the land is likely to result in damage to the environment or biodiversity assets of the area or if there is any breach or potential breach of this Management Plan.

6) The NVC, any agent of the NVC or any employee or contractor of the Crown, authorised by the NVC may, at any reasonable time, having first notified the landholder:

   a) enter the SEB Area for the purpose of inspecting the land or any fence on the land

   b) enter the SEB Area for the purposes of monitoring the conservation values and condition of the native vegetation and Native fauna protected by this Agreement

7) If the Owner is in breach of this Management plan, the NVC may by notice in writing served on the Owner, specify the nature of the breach and require the Owner to remedy the breach within a reasonable period of time specified in the notice.

2 SEB AREA

2.1 Land Owner and Location Details

Property name	N/A	
Registered owner	Name: Andrew Rosser and Rebekah Rosser	
	Postal address: 37 Player Court, St Peters SA 5069	
SEB site manager / provider contact	Name: Andrew Rosser	
	Postal address: 37 Player Court, St Peters SA 5069	Phone: Mobile: 0439 521 171
	Email: arosser@stpetersgirls.sa.edu.au	

Landscape Board region[1]	Limestone Coast	**Local government area**	Robe District Council
IBRA[2] **region**	Naracoorte Coastal Plain	**Total SEB area (ha)**	3.104
IBRA sub-region	Bridgewater	**SEB points (total, if applicable)**	20.58
IBRA association(s)	Beachport		

2.2 Land Parcels

Parcels whole or in part which comprise the SEB area

Title (e.g CT/CL)	**Volume**	**Folio**	**Parcel ID**	**Hundred**	**Site ID**
CT	5481	64	H441800 S192	Waterhouse	Site A1

[1] See https://landscape.sa.gov.au/
[2] IBRA = Interim Biogeographic Regionalisation of Australia

2.3 Introduction and SEB Area Description

Background/reason for establishing the SEB area (e.g. give brief details of clearance application, credit application or grant project)
The SEB area is being established to partially offset vegetation clearance (Appl No. NVCCAxxxxx). The clearance application is for a proposed house, garage and associated infrastructure.

Current and past land use history and events impacting the site/s (e.g. grazing, cropping, previous clearance, known fires; also list any existing covenants, caveats or agreements)
The SEB area is located on a property, which was owned by Rebekah Rosser's father in the early 1970s and historically used for grazing cattle. In the mid 1970s, stock were removed and the land allowed to regenerate. In relation to native vegetation, there are no existing covenants, caveats or agreements on the land parcel.

General description of the features within the SEB area (e.g. wetlands/creeks, soils, aspect, topography and rainfall)
The SEB is a vegetated coastal sand dune. Site A1 adjoins Little Dip Conservation Park, being separated by Douglas Dawson Track. The site has regenerated well since stock were removed, but continues to be threatened by agricultural weeds, such as False Caper. The environmental weed Buckthorn is beginning to establish onto the site and Bridal Creeper is well established. Average annual rainfall is 640mm.

2.4 SEB Area Map

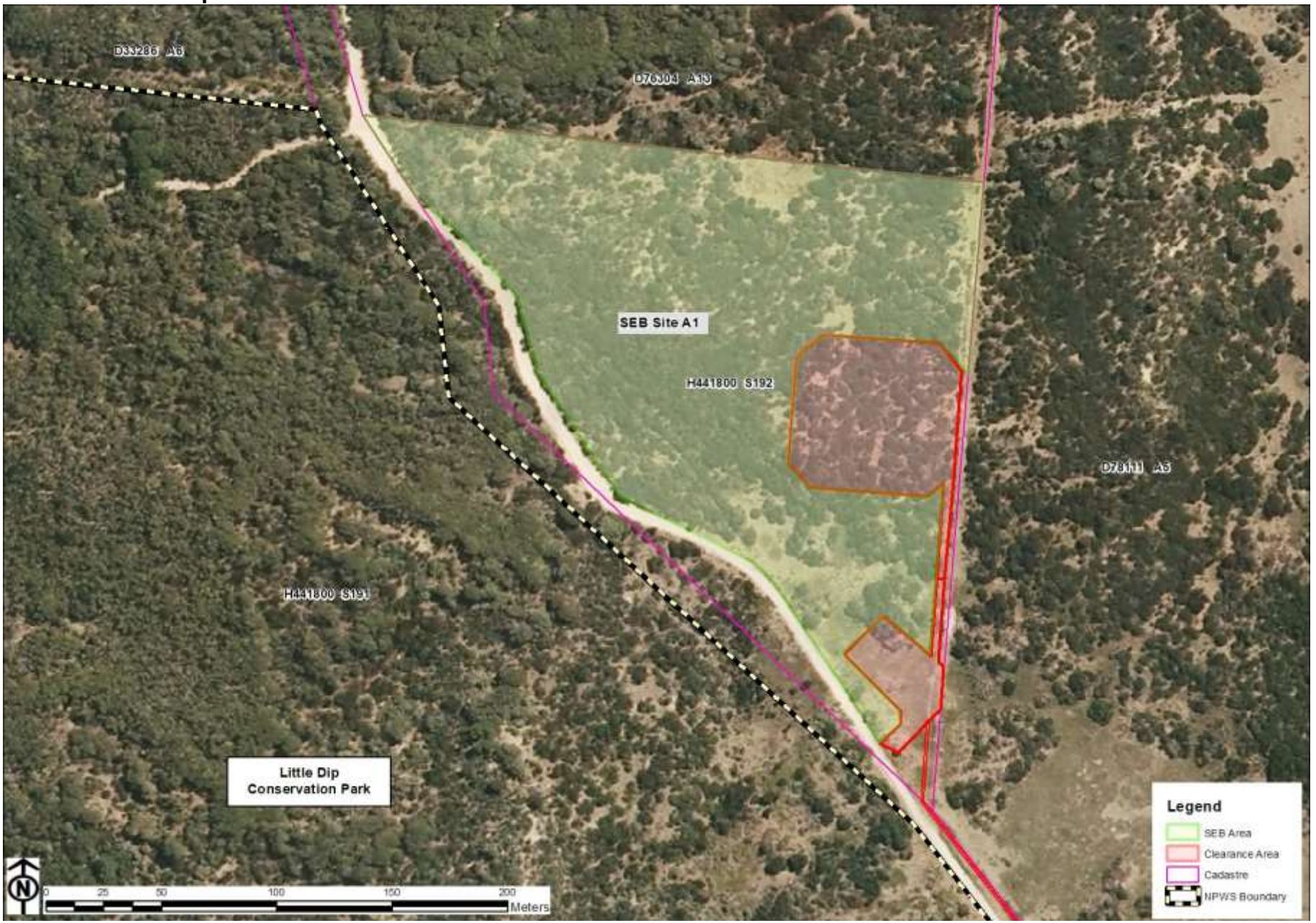

Figure 1. SEB Map depicting Site A1.

3 BIODIVERSITY

3.1 Native Vegetation Associations

The SEB Area comprises a total of **3.104 ha of vegetation** and **20.58 SEB points** as outlined in the following table. SEB points are calculated from a vegetation assessment undertaken on 27 June and 31 July 2020 by P. Tucker. A plant species list is given in Appendix 1.

Site Number	Vegetation Association	Area (ha)	SEB pts
A1	***Leucopogon parviflorus, Acacia longifolia* ssp. *sophorae* +/- *Olearia axillaris* Tall Shrubland**	**3.104**	**20.58**

General description

Vegetation within Site A1 is in moderate condition, consistent with 40-year regrowth after long-term cattle grazing, i.e. many open patches are still dominated by coastal pasture weeds. Greatest native diversity occurs beneath dense shrubs, where weeds are less vigorous due to shading.

Major weeds include; *Euphorbia terracina* (False Caper), *Asparagus asparagoides* (Bridal Creeper), *Euphorbia peplus* (Petty Spurge) and *Lagurus ovatus* (Hare's Tail Grass), although occasional *Rhamnus alaternus* (Buckthorn) are evident.

Figure 2. Site A1 looking to the south, GPS 390444, 5884188.

3.2 Threatened Flora and Fauna[3]

Plant Species	Common Name	Site/s	Conservation status		
			AUS	SA	Region
NIL					

Vegetation Association	Site	Conservation status		
		AUS	SA	Region
NIL				

Fauna Species	Common Name	Recorded during survey (list site/s)	Suitable habitat[4] (list site/s)	Conservation status		
				AUS	SA	Region
Calamanthus fuliginosus	Striated Fieldwren	N	A1			U
Dasyornis broadbenti broadbenti	Rufous Bristlebird	N	A1		R	R
Neophema chrysostoma	Blue-winged Parrot	N	A1		V	VU
Phaps elegans	Brush Bronzewing	N	A1			U
Stagonopleura bella interposita	Beautiful Firetail	N	A1		R	R
Vombatus ursinus	Common Wombat	Y*	A1		R	LC

* Recorded evidence, active warren, scats and tracks.

[3] **BDBSA** = Biological Databases of South Australia. **AUS =** Australia *EPBC Act 1999*: CR = Critically Endangered, EN = Endangered, VU = Vulnerable; **SA =** South Australia *NPW Act 1972:* E = Endangered, V = Vulnerable, R = Rare; **Region (Plants):** E=Endangered, T=Threatened, V=Vulnerable, R=Rare, K=status uncertain, but considered likely to be either rare, vulnerable or endangered, U=Uncommon, Q=Not yet assessed but flagged as being of possible significance, N=Common; **Region (Fauna):** RE = Regionally Extinct, CR = Critically Endangered, EN = Endangered, VU = Vulnerable, RA = Rare, NT = Near Threatened, LC = Least Concern, DD = Data Deficient, NE = Not Evaluated

[4] Not recorded during latest survey but has been recorded previously at the site or within 5 km (e.g. BDBSA or Atlas of Living Australia record) and the site is deemed suitable habitat

4 MANAGEMENT ISSUES AND ACTIONS

4.1 Minimum Management Obligations

During the term of this Plan, the SEB area is dedicated to the conservation of native vegetation and Native fauna on the land and, subject to this Plan, shall not be used in a manner inconsistent with that dedication.

The landholder must not undertake, or permit to occur, any activity that is likely to damage, injure or endanger the native vegetation or native fauna on the SEB area (except as provided for within this Management Plan, or where approved by the NVC).

In particular, the Owner shall not, without the written consent of the Native Vegetation Council, undertake or permit on the SEB area (except as may be provided for within this Management Plan):

- the clearance of native vegetation;
- the planting of exotic vegetation;
- the construction of a building or other structure;
- fertiliser application or artificial feeding;
- cropping or soil disturbance;
- dumping of rubbish, unwanted machinery or plant material;
- new dams or drainage alterations;
- removal of rocks;
- removal of standing or fallen timber;
- vehicle access beyond that which is required to manage and monitor the biodiversity value of the site;
- any other activity that, in the opinion of the NVC, is likely to damage, injure or endanger the native vegetation or habitat of native fauna on the SEB area.

Grazing

Stock are to be excluded from the SEB area at all times, with the exception of any ecologically-beneficial grazing strategy identified within this plan and approved by the NVC.

Fencing

Fencing must be maintained in a stock proof condition. Where fencing is only to standard to delineate the location of the SEB Area (e.g. one plain wire fence) or there is an unfenced boundary (e.g. a site borders a conservation reserve), the boundary needs to be monitored for stock access. If stock are able to access the area at any time in a manner not approved by this plan, a fence will need to be constructed or upgraded.

Controlling pests

The Owner is responsible for the control and, if possible, eradication of declared plant and animal pests pursuant to section 192 (1) of the *Landscape South Australia Act 2019.* All methods used must minimise off-target damage, minimise soil disturbance and comply with the *Native Vegetation Act 1991* and the *Landscape South Australia Act 2019.* Monitoring should aim to detect any new weeds or pests and management action taken to prevent these from becoming established.

Overabundant native animals

If control of a native species is required due to negative impacts (e.g. excessive kangaroo grazing), it must be conducted under permit from the SA Department for Environment and Water where applicable.

Fire prevention

The Owner will take all reasonable steps to prevent fire on their land, provided these steps are not inconsistent with their commitments under this Plan. All works must be compliant with the *Native Vegetation Act 1991* and the *Landscape South Australia Act 2019*.

4.2 Threats - Weeds and Pest Animals

Weed and feral animal species present that pose a threat to the flora/fauna[5]

Weed species	Common name	Declared (Y/N)	BCM threat rating	Site/s
Asparagus asparagoides	Bridal Creeper	Y	5	A1
Euphorbia terracina	False Caper	Y	3	A1
Rhamnus alaternus	Buckthorn	Y	3	A1

Pest animal species (declared)	Common name	Recorded on site/s (Y/N)	Likely to occur at site/s (Y)	Site/s
Oryctolagus cuniculus	Rabbit	N	Y	A1
Vulpes vulpes	Fox	N	Y	A1

[5] A weed or pest is considered a management issue if it is Declared under the *Landscapes SA Act 2019* or if the weed has a Bushland Condition Monitoring Weed Threat Rating of 3, 4 or 5 for the region in which it is located

4.3 Other Threats and Issues Impacting the SEB Area

Threat or Issue	Description of sites / species affected and the severity of impact (where known)
Inappropriate total grazing pressure (e.g. stock access, feral grazing animals and/or kangaroos)	No stock occur on this, nor neighbouring properties. Currently, rabbits, kangaroos and wallabies are not a major threat. However, in the future could become more significant.
Areas with a lack of native vegetation due to past disturbance	N/A
Changed hydrology, salinity, acidity or waterlogging	N/A
Artificial water source(s)	N/A
Inappropriate fire regime	N/A
Disturbance (e.g. public access, bike trails, off-road vehicles)	N/A
Rubbish dumping or pollution	N/A
Disease (e.g. *Phytophthora*)	N/A
Other:	N/A

4.4 Action Table

The overarching goal is to protect the native vegetation and improve its condition. This table lists the 10-year management objectives, associated actions and resources required to achieve the Management Goals. Detailed methods are included in the appendices.

10-Year Management Objective	Management Action	Methods	Timing
Improve plant health and regeneration by reducing total grazing pressure to level that causes minimal impact	Maintain fencing to exclude stock.	Currently, no stock are on the property nor adjoining properties. However, if stock are brought to an adjoining property, the Owner will maintain boundary fences and gates in a stock proof condition.	Ongoing monitoring required
	Monitor the area for rabbits and control if found present.	Monitor for the presence of Rabbit and if observed, implement an effective control program. Undertake an integrated and effective rabbit control program. Bait with either 1080 or Pindone poison bait where allowable and safe to do so. The best results are obtained if three free feeds (oats with no poison) are laid prior to baiting, with a three or four day interval between each feed. Baits should be laid within the rabbit feeding areas. Laying the baits on disturbed soil (ripped or scratched with a mattock or similar) is usually recommended to attract the rabbits. All 1080 baiting must be undertaken as per the Directions of Use. Follow up baiting with warren destruction and fumigation of those burrows that reopen. Start warren destruction as soon as practical after poisoning. Contact your local Landscape Board to seek advice and to purchase baits.	Ongoing monitoring required. Late summer or autumn is the best time to bait rabbits, as at this time alternative food is scare and rabbit numbers are low. Warren or den destruction should be undertaken in conjunction with baiting programs where possible. The best time to fumigate is after the opening rains, when the soil is less porous.
	Monitor impact of kangaroos and wallabies, reduce numbers if damage to plants is significant	Conduct spotlight surveys to determine population size and trends. If rabbits have been controlled, kangaroos and wallabies may still impact on native plant health. If grazing impacts become significant and surveys indicate numbers are high, obtain advice and if necessary, a destruction permit from	As required

10-Year Management Objective	Management Action	Methods	Timing
		DEW. Any control activities must be undertake as stipulated by the destruction permit.	
Reduce competition from high threat weeds	Bridal Creeper Substantially reduce (reduce cover by at least 30% of its current extent).	Begin in the least weedy areas and from the edges of large infestations. Hand-dig small and isolated patches first. Make sure to remove the rhizomes which bear the tubers. Hand-pull seedlings in winter before fruit forms. Spot spray or wipe from June to September, shielding native plants. To slow its spread, pull up stems before fruits form. Remove fruit and rhizomes from site. Contact your Landscape Board office for advice on biological control agents. Follow up control will be required for many years.	Dig out or hand-pull when soil is moist. Apply herbicide when plants are actively growing before flowering (winter to early spring).
	Buckthorn Eradicate to a negligible level i.e. <1% cover	Hand-pull or dig out seedlings and small plants, removing most of the root material. Cut and paint or drill and fill larger plants	Hand-pull or dig out plants when soil is moist. Cut and paint or drill and fill in spring or autumn.
	False Caper Substantially reduce (reduce cover by at least 30% of its current extent).	Wear gloves to protect hands from milky sap. Hand-pull seedlings only, making sure to remove the taproot. For mature plants, cut the plant at base and paint the tap root with herbicide. Spot spray large infestations.	Hand-pull when soil is moist, before fruiting. Cut and paint or spot spray when plants are actively growing, in winter.
	Monitor and control any new high threat weeds (all sites)	Search site for new weeds. If observed, refer to Appendix 2 for a range of possible weed control methods or seek advice if required and subsequently plan and implement a control program based on greatest threats.	Search once per season for first 5 years, then annually.
Reduce feral predator populations	Monitor the area for foxes and control if found.	**Fox baiting cannot be undertaken on properties smaller than 5 ha or where risks of non-target animals (e.g. dogs) finding baits is high.** Contact your local Landscape Board office to seek advice to plan and implement an effective fox control program. Participate in a regional fox control program if one is implemented.	Fox baiting in spring can be used to target foxes during their reproductive stage, when females require more food to sustain their young.

10-Year Management Objective	Management Action	Methods	Timing
		Foxes are most effectively controlled with 1080 baiting. Burying about 4-6 baits per 100 ha, in locations known to be used by foxes (e.g. vehicle or animal tracks) is recommended. Bait sites must be marked and checked regularly to monitor bait take. All 1080 baiting must be undertaken as per the Directions of Use. The fumigation of dens should be considered as a complimentary control option. All dens need to be plugged to prevent escape of foxes and fumigant.	Fox baiting in autumn targets young foxes from the previous spring as they disperse in search of new territory.
Monitor results	Refer to monitoring section	Refer to monitoring	Annually in September.

4.5 Works Calendar Summary

Year(s) that each management action is to be carried out in order to achieve the 10-year Management Objectives, plus any monitoring and reporting required.

Action Item	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
Monitor and maintain boundary fencing	X	X	X	X	X	X	X	X	X	X
Rabbit control	X	X	X	X	X	X	X	X	X	X
Monitor kangaroos	X	X	X	X	X	X	X	X	X	X
Monitor and maintain mountain bike trail closure	X	X	X	X	X	X	X	X	X	X
Bridal Creeper control	X	X	X	X	X	X	X	X	X	X
Buckthorn control	X	X	X	X	X	X	X	X	X	X
False Caper control	X	X	X	X	X	X	X	X	X	X
Monitor / control new weeds	X	X	X	X	X	X	X	X	X	X
Fox control	X	X	X	X	X	X	X	X	X	X
Standard monitoring	X	X	X	X	X	X	X	X	X	X

4.6 Management Action Map

Figure 3. Site A1 Management Action Map

5 MONITORING AND REPORTING

5.1 Standard Monitoring

Observing, documenting and analysing the outcomes of management actions are required. If monitoring shows that the goals of this Plan are not being achieved, the owner or the NVC may request a review and update of the Plan. The following standard monitoring data is required:

- Record of management actions undertaken
- Photographs from at least one representative photographic monitoring site or 'photo-point' for each vegetation association (i.e. each 'site')
- A map and/or list showing the location of each photo-point and the photo direction
- Annual photographs showing the same field of view as the first (baseline) photograph at each photo-point.
- Record of dominant species and species of interest occurring in the photographs with notes of key changes compared to the baseline.
- Record of seasonal conditions (e.g. rainfall) to assist with evaluating changes.

5.2 Monitoring Roles and Responsibilities

Monitoring action	Timing	Person(s) / organisation(s) responsible
New weeds / pests	Search once per season for the first 5 years, then at least annually	Andrew and Rebekah Rosser
Standard Monitoring	Annually in September	Andrew and Rebekah Rosser
Review and, if required, update Management Plan	If required, Years 5 and 10	Andrew and Rebekah Rosser, with approval from NVC

5.3 Reporting and Review

Progress reports will be submitted to the NVC each year for the first 3 years and as requested by the NVC thereafter. Reports are to include:

- a description of works undertaken for the previous year for each Management Objective
- standard monitoring data including photographs and an evaluation of outcomes.

Year 5 and 10 assessment reports (if required) will be submitted to the NVC and include:

- summary of works undertaken to date
- an evaluation of the condition of the vegetation compared to the baseline/benchmark including photographs and monitoring data
- a review of whether management actions have achieved the management objectives to the extent expected
- suggested changes to management plan (if required)

Type of report	Report required to be sent to the NVC? (Y/N)	Due dates	Person(s) / organisation responsible
Progress	Y	31 July Annually from 2022 to 2032	Andrew and Rebekah Rosser
Year 5 Assessment	Y	31 July 2027	Andrew and Rebekah Rosser
Year 10 Assessment	Y	31 July 2032	Andrew and Rebekah Rosser

6 EXECUTION OF THE PLAN

SEB Area Reference Name: …….

Signed: ..... Date: .....

(“the Decision Date”)

Print Name: ……

☐ **PRESIDING MEMBER, NATIVE VEGETATION COUNCIL**

☐ **DELEGATE TO NATIVE VEGETATION COUNCIL**

Signature of Landowner(s) or seal of Company and authorised signatory:

Signed: ..... Date: .....

Print Name: ……..……..

Signed: ..... Date: .....

Print Name: ……..……..

APPENDIX 1: PLANT SPECIES LIST

The following plant species were found at Site A1 on 27/6/20 and 31/7/20 by P. Tucker.

Species Name	**Common Name**
Acacia leiophylla	Coast Golden Wattle
Acacia longifolia ssp. *sophorae*	Coastal Wattle
Acaena novae-zelandiae	Biddy-biddy
Adriana quadripartita	Coast Bitter-bush
Carpobrotus rossii	Native Pigface
Clematis microphylla	Old Man's Beard
Dianella brevicaulis	Short-stem Flax-lily
Dichondra repens	Kidney Weed
Dodonaea viscosa ssp. *viscosa*	Sticky Hop-bush
Geranium sp.	Geranium
Hydrocotyle laxiflora	Stinking Pennywort
Kunzea pomifera	Muntries
Lepidosperma gladiatum	Coast Sword-sedge
Leucopogon parviflorus	Coast Beard-heath
Olearia axillaris	Coast Daisy-bush
Pimelea serpyllifolia ssp. *serpyllifolia*	Thyme Riceflower
Rhagodia candolleana ssp. *candolleana*	Sea-berry Saltbush
Senecio odoratus	Scented Groundsel
Senecio pinnatifolius var. *maritimus*	Coast Groundsel
Sonchus hydrophilus	Native Sow Thistle
Swainsona lessertiifolia	Coast Swainsona-pea
Tetragonia implexicoma	Bower Spinach
**Asparagus asparagoides* f. *asparagoides*	Bridal Creeper
**Cirsium vulgare*	Spear Thistle
**Ehrharta longiflora*	Annual Veldt Grass
**Euphorbia peplus*	Petty Spurge
**Euphorbia terracina*	False Caper
**Galium murale*	Small Bedstraw
**Lagurus ovatus*	Hare's Tail Grass
**Leontodon saxatilis*	Lesser Hawkbit
**Medicago* sp.	Medic
**Sonchus oleraceus*	Common Sow-thistle
**Plantago lanceolata* ssp. *lanceolata*	Ribwort
**Rhamnus alaternus*	Buckthorn
**Senecio elegans*	Purple Groundsel

Native Vegetation Council

APPENDIX 2: Weed Control Methods

Weed Control Methods in Native Vegetation - Template

June 2020

Purpose

This template outlines key weed control principles and methods that may be copied into a Native Vegetation Council SEB Management Plan (e.g. as an Appendix) where appropriate.

Key principles

- Improving the condition of native vegetation in an SEB area often requires the control of weeds. Removing weeds reduces competition, shading and other unwanted effects.
- Weed control is a long-term project. Numerous follow-up treatments are often required to deplete weed seeds that have accumulated in the soil and control new invaders.
- To promote the replacement of weeds by native plants, rather than more weeds, start weed control work in the best areas of native vegetation and work in stages towards the more degraded areas. The exception may be if an isolated occurrence of a new invading weed species occurs, to eradicate it before it spreads.
- Minimise disturbance to existing native plants and to the soil as weeds are often favoured in disturbed areas.
- Where native animals are using the weed infestations as habitat, remove those weeds slowly so that the habitat can be replaced by native species.
- Consider slope stability and the risk of soil erosion if weeds are removed.
- If dead weeds are left standing consider how you will manage access for follow up work, particularly for dense prickly infestations.
- For local weed management advice, the local Landscape Board office may be contacted.

Herbicides

If using herbicides it is recommended that you complete a basic Chemical Handling training session first to keep yourself, other people and your property safe.

Native Vegetation Branch
Department for Environment and Water

T (08) 8303 9777
E nvc@sa.gov.au

www.environment.sa.gov.au/nativevegetation

Follow these key principles when using herbicides:

- Always read and follow the label on the herbicide container. It is a legal requirement that you act in accordance with the instructions and information on the label, or in some cases, in accordance with an Off-label Permit for that herbicide as issued by the Australian Pesticide and Veterinary Medicines Authority. Material Safety Data Sheets can provide further safety information.
- Always use the recommended safety equipment/clothing and have water available for washing should there be any herbicide contact with your skin.
- Only mix up the amount of herbicide that you will use in each weeding session.
- It is very important to mix herbicides to the correct dilution for the target weed, as per the label instruction, or in some cases the Off-label Permit instructions.
- Check on the label to see if a surfactant / wetting agent / penetrant is recommended.
- Weeds are often best treated when they are actively growing, but check label information for most effecting timing.

Methods

Hand Pull Soft annual weeds and seedlings of woody weeds	Tools and Equipment: Gloves
	Safety Equipment: None
	Firmly grip the stem of the weed near ground level and pull the root out of the ground. Beware of back injury. Care must be taken to minimise soil disturbance by for example putting one foot on the ground on either side of the weed to keep the surrounding soil from lifting up and/or waiting until after rain when the soil is wet so the plant comes up more easily.

Digging or Grubbing Individual weeds with underground bulbs or tubers	Tools and Equipment: Narrow trowel, small grubbing tool
	Safety Equipment: None
	Dig out <u>all</u> of the underground part of the weed and remove it from the site. Replace dislodged soil and leaf litter after the weed is removed to minimise disturbance.

Cut and Swab Small to medium woody weeds	Tools and Equipment: Cut using secateurs, loppers, a handsaw or chainsaw depending on weed size. Herbicide application using a sponge-topped plastic bottle similar to a shoe polish bottle.
	Safety Equipment: Safety glasses, strong rubber gloves, water for washing
	Systemic herbicides are used in this method which move to and kill the roots of the weed. Cut the stem(s) close to or at ground level. Apply the herbicide to the cut stump <u>within 30 seconds</u>. Keep the applicator sponge clean as contact with the soil may inactivate the herbicide. **Stem Scrape and Swab:** If the underground parts of the weed are extensive, more herbicide will be needed to kill it. In this case cut the

	stems higher above the ground and after cutting, scrape off the outer layer (skin) of the remaining part of the stem and apply herbicide to this area as well as to the cut.

Ringbark Trees that do not resprout (e.g. pines)	Tools and Equipment: Hatchet, machete, hand saw or chainsaw
	Safety Equipment: Safety glasses, gloves
	Close to the ground chop out a 2-5cm wide section of the bark and sap wood, exposing the heart wood, to form a cut ring that completely encircles the tree. For pines, no herbicide need be applied. For other treat as per the Cut and Swab information above. Ensure that when the tree dies and eventually falls that it will fall into safe place.

Wipe On Strap-leaf species such as *Watsonia* in areas where they are surrounded by native plants	Tools and Equipment: Wick-wand, or 'Tongs of Death' (kitchen tongs with sponges securely attached), and plastic squeeze bottle with a long narrow tube coming out of the lid
	Safety Equipment: Safety glasses, strong rubber gloves, water for washing
	Apply herbicide to the wick-wand or Tongs of Death and then wipe the leaves of the weed. Both sides of the leaf should be coated with herbicide.

Drill and Fill Larger woody weeds and medium to large trees that may re-shoot	Tools and Equipment: Cordless/battery drill with 6 mm drill bit. Plastic squeeze bottle with long narrow tube coming out of the lid.
	Safety Equipment: Safety glasses, strong rubber gloves, water for washing
	The weed can be left standing after treatment to minimise the labour required and maximise the habitat value. 1. Clear any low branches away to allow good access to the base of the weed. 2. Clear soil and leaf litter away from the base of the trunk. 3. Drill a series of holes: a. at 2 – 4 cm spacing around the base of the trunk or lignotuber (this is a type of storage organ which looks like a swollen lump at the base of the trunk) b. drill to a depth of 0.5 - 1 cm at a 45^{o} angle (or steeper if possible). 4. Fill the holes with herbicide immediately. 5. Before leaving to start on another plant check the holes and refill them with herbicide if some has been absorbed. **Frill and Fill variation**: A hatchet or machete is used to make lots of angled cuts 'frills' into the sap layer all around the base of the trunk so

	that each cut can hold the herbicide. Apply the herbicide as soon as possible after cutting.

Spot Spray Infestations of small to medium weeds where off-target damage to native species (e.g. spray drift) is unlikely	Tools and Equipment: Hand-held spray bottle and/or backpack spray unit or vehicle-mounted spray unit
	Safety Equipment: Safety glasses, mask or ventilator, strong rubber gloves, water for washing, other equipment as specified on the herbicide label.
	Big open areas may just fill up with weeds again. Only spray an area that is of manageable size to follow-up with either further weed control to promote native regeneration or to prepare for revegetation. Spray cautiously in small target area and ensure a good cover of the herbicide on both sides of the leaves. To minimise off-target damage from spray drift, adjust the nozzle to get droplets of the correct size to cover the leaf (not too small to blow away between the nozzle and the leaf and not too big to dribble off the leaf once it hits), use a shield over the spray nozzle and don't spray on windy days. Don't spray when rain is expected (refer to the label).

Acknowledgement

The NVC has adapted this information from a guide produced by departmental Bush Management Advisors.

Further information

Biosecurity SA (2018) '*Weed Control Handbook for Declared Plants in South Australia*' (see https://www.pir.sa.gov.au/biosecurity/weeds_and_pest_animals/weeds_in_sa)

Robertson, M., Grant, I. and Cragie, A. (2005) *Stop Bushland Weeds: A Guide to Successful Weeding in South Australian Bushland,* Nature Conservation Society of SA

For local advice, contact your local Landscape Board office: Department for Environment and Water | Landscape Boards