

[Site name] e.g. Biscay Street

Coastal Revegetation Site Plan (Part B)

Author/Organisation: **e.g. Cervantes Coastcare**

Site name: **e.g. Biscay Street**

Site No.: **e.g. 001**

Location: **e.g. Cervantes**

Plan submitted: **2017**

Planting year: **2018**



This template has been designed to help guide your organisation in planning a well organised coastal revegetation project in the Northern Agricultural Region. Each project site is unique and you should factor in local variances in soil type, pH, and depth, exposure, species, pest plants and animals.

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1. PROJECT SITE DESCRIPTION

Note: The information below should be recorded following the completion of the initial Pre-planting Revegetation Site Assessment which is Part A of this Revegetation Site Management Plan (RSMP)

Site Name:	<i>e.g. Cervantes Biscay St</i>
Size (ha):	<i>e.g. 0.33 ha</i>
Site Location:	<i>e.g. Cervantes</i>
Land Parcel information:	<i>e.g. CERVAT 01118 and R 48571</i>
Landholder:	<i>e.g. Shire of Dandaragan, Department of Lands</i>
Landholder Contact Information:	<i>e.g. 08 9652 0800 (SoD) and 08 6552 4400 (DoL)</i>
Date permission obtained from Landholder:	
Previous Revegetation Efforts:	<i>e.g. 2015 (approx. 40% success rate) e.g. 2014 (approx. 60% success rate)</i>
Aboriginal Heritage Site Information:	<i>e.g. None listed</i>
Other stakeholders (e.g. local residents, tourists, fishermen, surfers)	
Identify local management plans or strategies affecting the site	
Which regional NRM objectives are addressed by this project?	

What is the significance of this site?

e.g. This site is an important shorebird nesting site. The site is one of the few remaining successfully nesting sites in this area of the coast.

Why is a plan required for this site?

e.g. This site is under threat from trampling and potential blowouts. A plan is needed to coordinate weed (Pyp grass) control and subsequent revegetation to maintain the integrity of the dune system and continue to provide shelter and habitat for shorebirds.

2. PROJECT PLANNING

Planning should be undertaken at least ONE YEAR in advance to take into account the variety of threats affecting revegetation success. Complete the sections below for this revegetation site. You must consider whether revegetation is the best solution for your site.

2.1 MANAGING THREATS

The table below describes each potential threat and solutions to mitigate that threat. Complete the first column using information in the Revegetation Site Assessment (Appendix A).

Table 1: Identification of threats and mitigation actions

Present at site (Y/N)	Threat	Method of control	Timing of control	Priority
Pest animals				
	Snails	Baiting	At time of planting	Med
	Rabbits	Baiting	Up to eight weeks prior to planting until planting occurs, follow up treatment likely in the first two years while plants are small	High
		Plant Guards	At time of planting, generally removed after the first year	
		Fencing	Prior to planting	
	Goats	Fencing	Prior to planting	Low
	Insects	Spraying	As needed	Low
	Other –			
Pest plants				
	Annual grasses	Spraying	As soon as they emerge following start of winter rain, follow up spraying or hand-pulling likely during the first two winters	High
		Exclusion matting	Immediately prior to or at time of planting	
		Slashing	Immediately prior to planting and regularly thereafter	

		Hand pulling	Immediately prior to or at time of planting, suitable for light infestations only	
	Perennial grasses eg couch, pyp grass	Spraying	Up to one year in advance of planting, anytime they are actively growing during warm wet weather, on-going spraying may be necessary	High
		Hand pulling	Immediately prior to or at time of planting, suitable for very light infestations only	
	Perennial woody weeds eg boxthorn	Chemical control – foliar spray or cut-and- paste	Any time prior to planting	Med
		Mechanical control	Any time prior to planting	
		Hand pulling	Any time prior to planting	
	Perennial shrubs eg false onion weed, fountain grass	Chemical control	Any time prior to planting	Med
		Mechanical control	Any time prior to planting	
		Hand pulling	Any time prior to planting	
	Other –			
Human impacts				
	Pedestrian traffic	Exclusion – fencing, brushing, tree guards	Prior to or at time of planting	High
		Signage	Prior to or at time of planting	
	Off-road vehicles	Exclusion – fencing, brushing, bollards	Prior to or at time of planting	High
		Signage	Prior to or at time of planting	
	Other –			

Natural impacts				
	Wind erosion	Sand stabilisation – matting, brushing Sand trapping – brushing, fencing	Prior to or at time of planting Prior to or at time of planting	Med
	Low rainfall	Local provenance plants adapted to the local climate Supplementary watering	Collect local seed in the spring/summer prior to propagation and planting the following winter As needed. Note: it is important to water infrequently with at least 2 l per plant to encourage deep root development. Plants watered frequently with smaller amounts of water will develop shallow roots and therefore will be less likely to survive summer conditions.	High
	Compacted soil	Mechanical ripping Auger Manual digging/mattock	Prior to planting, if site is infested with weeds complimentary spraying may be required Immediately prior to or at time of planting Immediately prior to or at time of planting, wetting soil will help if sufficient water is available	High
	Other –			

2.2 PLANT SPECIES & LAYOUT

Determine the total number of plants required to achieve the desired revegetation outcome based on the site area calculated in section 1 above. As a starting point, calculate numbers based on planting one plant per square metre. Other factors must be considered when calculating plant numbers, including:

- Cost of seedlings;
- Presence of existing native vegetation
- Funding available to purchase those seedlings; and
- Likely workforce available to plant them during a planting day – in general 150-300 seedlings is an appropriate number for a community planting day attended by 10-40 people.

With the above limitations in mind, a large revegetation project may require staging over multiple years.

The Revegetation Site Plan (Part A) includes a list of native species occurring immediately adjacent to the site. From this list create a plant species list in Table 2 below and suggested numbers of each. Consider each of these points when making selections:

- Include a mix of plants with a range of growth habits e.g., ground covers, shrubs, trees;
- Select species suitable for each ecosystem locations represented in the site (e.g, fore dune, mid dune, hind dune, riparian);
- Select species for which local provenance seed can be collected and propagated (check with nursery); and
- A knowledge of species survival rates for plantings in this or nearby sites helps select successful species.

NACC's Coastal Plant Pocket Guide app can assist with some of these selections.

Table 2: Plant species selection and numbers

Species	Growth habit	Location in ecosystem	Number	Planting notes
Total number of plants			XX	

2.3 PROJECT EXPENSES

Based on the revegetation project details outlined in the Sections above, complete an expense list in Table 3 below. NACC can advise on suppliers.

Note: the draft list below is based on “typical” revegetation equipment used in the Northern Agricultural Region, adjust as necessary.

Table 3: List of Expenses

Expense item	Quantity	Notes
Common purchase items		
Native seedlings – local provenance		Prices usually vary from \$1 - \$3 ex GST per seedling, deep forester tubes are preferred as these allow for good root development
Tree Guards – plastic		Tree guards can be reused, ask around if there are any available from last year
Tree Guards- cardboard		Require 2 bamboo stakes
Tree guard stakes		Usually 3 stakes per guard however, 4 stakes per guard is also effective, plus extra stakes may be necessary to replace breakages.
Native tree fertiliser tablets		Usually sold in boxes of 1000, ask around for any leftovers
Other purchase items		
Weed suppression matting		Effective control of high density weeds in small areas
Erosion control netting		Used on unstable dune faces and as sand trap fencing
Biodegradable pegs		Used to peg down matting and netting
Wooden stakes		Combined with netting to make sand trap fences
Fencing		Design depending on purpose, e.g., excluding humans or rabbits
Bollards		Common control method for off-road vehicles
Specific tools		NACC can loan most common tools necessary for revegetation or factor the purchase of them into your budget
Contractor Services		
Weed control		Spraying or slashing
Pest animal control		Often baiting of rabbits/snails
Ground ripping		Make require concurrent weed control of disturbed soil, ripping should follow land contours
Fence and bollard installation		Often for rabbit, human and off-road vehicle exclusion, tree guards may not be necessary

3. SITE MAP

Site maps are important planning documents and they should indicate ALL areas requiring any activities such as revegetation, brushing, fencing, ripping and weed control. If the site spans more than one ecosystem location (e.g. fore dune, hind dune) then identify these areas on the map to allow species are planted in the appropriate location. Suggested photo-monitoring points can be included.

A site map such as the example below can be created using the NACC NARvis Website <http://www.narvis.com.au/grants/create-a-map/>



4. PROJECT SCHEDULE

Referring to the Sections above, create a timetable directing the sequence of activities required for successful completion of this revegetation project. The project span is three years, with the first year dedicated to preparations for planting and the two years following to monitoring and maintenance of plants in the ground. Post-planting site visit dates are intended as guidelines, these may vary depending on season conditions i.e. more frequent during drought years.

Note: NACC’s Coastal Community Grant program is available to fund large-scale community planting events in the Northern Agricultural Region. These grant rounds are released in July and awarded in August giving community groups time to arrange collection of local provenance seed in spring/summer for propagation and planting the following winter. The draft schedule below assumes funding has been secured well in advance to enable planning that include local provenance seed collection for a “typical” revegetation project in the Northern Agricultural Region.

Table 4: Project schedule

Date	Activity	Notes	Date completed
Year 1 – Pre-planting			
May - Jun	Collect <i>Olearia axillaris</i> seed	This popular dune revegetation species is the only species that sets seed around 6 weeks after the start of winter rain.	
Jul - Oct	Identify a nursery that will: <ul style="list-style-type: none"> propagate plants from local provenance seeds, which plants in Section 2 they can propagate, when they need the seed by, how the seed should be prepared (ie cleaned) 	NACC staff can assist with advice on nurseries that propagate plants for revegetation. The plant species list in Section 2 above may need adjustment based on advice from the nursery.	
Aug - Oct	Control annual and perennial grasses	Chemical weed control is usually best undertaken in Spring when weeds are actively growing and before annuals have set seed.	
Sept - Dec	Collect local provenance seed for target species and send to nursery along with order	NACC staff can assist with seed collection resources and training. Not all plants set seed successfully every year so it may be necessary to increase numbers of other species to compensate	
Mar - Apr	Check on plant propagation, with plant order confirmed <u>place order</u> for all necessary equipment/services in Section 3. Follow-up control of perennial grasses. Control of perennial woody weeds and shrubs. Ripping compacted soils.	Control of perennial weeds is usually best undertaken in Autumn when rain has started and it is still warm. Weed control maybe be necessary in the weeks following ripping as the soil disturbance may encourage germination.	
May - Jun	Prepare for planting day – watch NACC video , consult checklists in Part C of the RSMP, secure supplementary planting equipment	NACC staff can assist with preparations. Weekends are usually best for community planting days.	
Jun - Jul	Arrange collection/delivery of seedlings. Arrange planting day catering (if necessary)	If seedlings must be stored for some time prior to planting, avoid placing them on soil as the roots will quickly grow into it. Keep them well separated from garden plants to minimise the risk of disease	

	Undertake planting day and complete Section 5 below. Establish photo-monitoring point and take baseline photos. Arrange installation of signage (if necessary)	transfer. Plants should be exposed to full sun and watered regularly such that the soil in the bottom of the pot remains moist. NACC can provide support to coordinators of planting events, including access to the Photomon app.	
Years 2 – Monitoring and maintenance			
Sept - Oct	Post-planting site visit 1 – complete data sheet included in Part C of the RSMP	NACC can advise/assist with site assessment and supplementary watering.	
Nov - Dec	Post-planting site visit 2 – complete data sheet Remove tree guards as long most plants have grown out of the top of the guards. Leave one stake in place to mark each surviving plant.	Tree guard removal is recommended prior to summer as they create a hot environment for plants and are prone to blowing off in high winds. Collect, bundle and store tree guards and stakes for reuse. NACC can assist with storage. NACC can advise/assist with site assessment. Unless it has rained very consistently, it is recommended to water plants at this time to encourage deep root development prior to summer (see Section 2.1)	
Jan - Feb	Post-planting site visit 3 – complete data sheet	NACC can advise/assist with site assessment and supplementary watering.	
Mar - Apr	Post-planting site visit 4 – complete data sheet Photo-monitor site (post-summer)	NACC can advise/assist with site assessment and supplementary watering.	
Years 3 – Monitoring and maintenance			
Sept- Oct	Post-planting site visit 5 – complete data sheet Photo-monitor site (post-winter) Plan for infill planting in the following winter if necessary	NACC can advise/assist with site assessment and supplementary watering. If infill planting is planned, ensure the strategies to mitigate poor initial plant survival are in place.	
Mar - Apr	Post-planting site visit 6 – complete data sheet Photo-monitor site (post-summer)	NACC can advise/assist with site assessment and supplementary watering.	

5. PLANTING EVENT RECORD

Upon completion of your planting day, complete Tables 5 and 6 to record all details of the event

Table 5: Planting Event Record

Details	
Planting date	
Event duration	
No. attendees	
Groups represented	
Total number of plants	
Source nursery	
Pot types eg cells, forestry tubes	
Soil condition eg dry/moist, hard/soft	
Tree guards? (Y/N)	
Fertiliser tablets? (Y/N)	
Supplementary watering? (Y/N)	
If watered, how many litres per plant?	
Other notes	

