Revegetation Publication Report

SWR0092

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Contents

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Amendments

Revision Number	Revision Date	Description of Key Changes	Section / Page No.
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1 PURPOSE

This Revegetation Publication Report provides additional information on SWR0092.

2 SCOPE

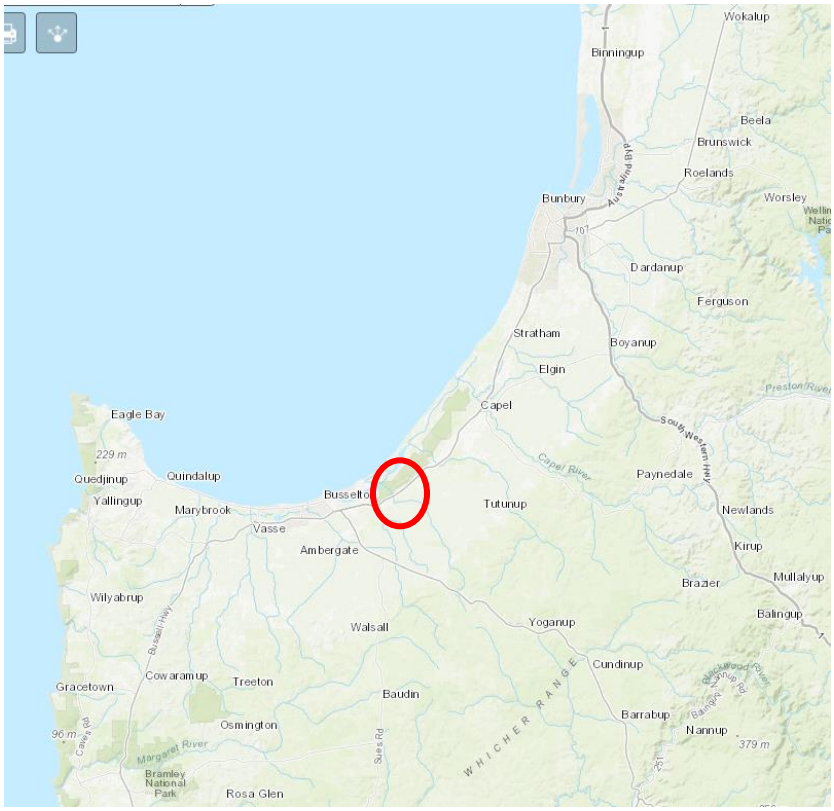
As part of the State and Federal offset requirement, Main Roads WA (MRWA) is required to implement a rehabilitation program to enable construction of the Vasse Bypass and future Bunbury Outer Ring Road.

MRWA and the Department of Parks and Wildlife (DPaW) identified a site within State Forest No 2 that could be rehabilitated as an offset, with the intention of it being incorporated into the Tuart Forest National Park immediately adjacent to the site once completed.

Revegetation will be undertaken over a 10 years period and is separated into multiple stages.

Main Roads Region	South West Region
Road Name	Bunbury Outer Ring Road
Road Number	H058
Local Government	City of Busselton
Central GPS Coordinates	• Latitude (N): -29.725404133174 • Longitude (E): 114.966516023506
Reference Number	SWR0092
Type of Method Undertaken	Revegetation
Area of Revegetation	55ha
Year/s Revegetation Occurred	2015 - Ongoing
Brief description	Stage 1 commenced in 2016 with 7.8 Ha of revegetation. In subsequent years, MRWA commenced Stages 2 and 3, with the final Stage 4 of the offset area due for planting in the winter of 2021. The site currently has over 55 Ha under the management of MRWA.
Species used	Refer to Appendix 1

3 SITE MAP



Locality:

Locality : State Forest #2 – Environmental offset Site – 55Ha

Stage 1- Ludlow Offset 2016

4 SITE PHOTOS

Figure 1. Site condition in 2016 prior to commencement of works.

Figure 2. The rehabilitation area was previously used as a pine plantation until the early 1990's. Pine stumps were removed and stacked in preparation for burning.

Figure 3. Pine stumps are burnt to create ash beds, which are known to support the germination of Tuarts Trees.

Figure 4: Each Stage of the revegetation is fenced with a fauna fence to deter kangaroos and rabbits from entering the revegetation area. Fauna gates are used to allow kangaroos to exit the fenced area (photo shown in open position). Rabbit wire apron is also used to prevent burrowing pests from entering the site.

Figure 5. Rip mound planting used for most of the revegetation area. Compost was added to the rip lines in some areas to improved carbon and nutrient levels in the poor quality soils.

Figure 6. Areas to be direct seeded were rotary hoed. This process also reduced the occurrence of onion weed and reduced compaction ahead of direct seeding operations.

Figure 6. Six months post planting the tuart trees and other planted vegetation showed excellent growth. Tuart trees planted in or near the ash beds showed a significant amount of growth as compared to others.

Figure 7. Annual winter weeds are managed though mechanical removed or with chemical control. The Tuart Forest is badly affected with Arum Lilly infestations. Through careful control, the revegetation site has seen a 95% reduction in Arum populations.

Figure 8. Rip / mound planted sites well established (2019). Seedlings remain in excellent health. Soil amendments are added in liquid form to encourage plant and soil health.

Figure 9. Infill planting will be undertaken to achieve the desired density and diversity.

Figure 10. Ongoing weed management is required to enable planted vegetation to become established.

5 APPENDICES

Appendix	Title
Appendix 1	Species List

Appendix 1: Species list

Species	Common Name	Plants/Ha
Agonis flexuosa	Peppermint	50
Eucalyptus gomphocephala	Tuart	50
Agonis flexuosa	Peppermint	300
Acacia cochleris	Ridged Wattle	50
Banksia attenuata	Candlestick banksia	150
Banksia grandis	Bull Banksia	150
Conostylis aculeata	Prickly Conostylis	50
Conostylis candicans		50
Corymbia calophylla	Marri	150
Dianella revoluta	Dianella	50
Eucalyptus gomphocephala	Tuart	300
Grevillea vestita	Shrub	50
Hibbertia cuneiformis	Cutleaf Hibbertia	150
Lepidosperma gladiatum	Coastal Sword Sedge	400
Rhagodia baccata	Berry Saltbush	250
Spyridium globulosum	Basket Bush	150
		2250/Ha

Seed for seedling propagation where possible will be sourced from the site and adjacent areas of State Forest No.2 and the Tuart Forest National Park. Where seed is unavailable from these areas it will be sourced from within the south west region.

Species	Common Name	Plant Form	Minimum Numbers/ha
Acacia pulchella	Prickly Moses	Shrub, middle storey	40
Acacia saligna	Orange Wattle	Tree, middle storey	25
Agonis flexuosa	Peppermint	Tree, middle storey	250
Banksia grandis	Bull Banksia	Tree, middle storey	150
Conostylis aculeata	Prickly Conostylis	Clumping plant, understorey	250
Corymbia calophylla	Marri	Tree, upper storey	65
Dianella revoluta	Dianella	Clumping plant ,understorey	150
Dichopogon capillipes		Clumping plant, understorey	150
Eucalyptus gomphocephala	Tuart	Tree, over storey	250
Grevillea vestita	Shrub	middle storey	75