

**Green-leaved Rose Walnut Rehabilitation Plan – W2B Project,
Section 4. Annual Monitoring Report (July 2020 – August 2021)**



Prepared for:

**NRW (formerly BGC) Contracting Pty Ltd
Level 3/143 Coronation Drive,
Milton, Qld 4064**

Prepared by:

**Ecos Environmental (Dr Andrew Benwell)
PO Box 641, Mullumbimby NSW 2482**

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Introduction

As part of threatened flora management for the W2B project, a plan was prepared in 2019 to carry out remediation works for the threatened species Rusty Green-leaved Rose Walnut (*Endiandra muelleri* subsp. *bracteata*) at Maclean on Section 4 of the W2B project. The plan titled 'Green-leaved Rose Walnut Rehabilitation Plan – W2B Section 4' was prepared by Geolink and Ecos Environmental (1/4/2019, updated 10/12/2019). The works included translocation of individuals of Rusty Green-leaved Rose Walnut (RGRW) to a site adjacent to the Maclean interchange where the species was accidentally cleared during construction. The translocation was carried out by propagating the species from seed collected on the W2B project and introducing these plants to the site within a fenced habitat enclosure. Other rehabilitation work was carried out around a single in situ individual of RGRW remaining in the road reserve about 400 m to the north. The Rehabilitation Plan now forms an addendum to the updated Woolgoolga to Ballina Flora Translocation Strategy Sections 3-11, V3 which was approved by NSW Planning, Industry and Environment on 1 May 2020.

Overall, the Rehabilitation Plan involved the implementation of 4 Actions:

Action 1 – Targeted surveys for RGRW in the Maclean area to assess local extent of species and to collect seed or cuttings for propagation

Action 2 – Collection and propagation of seedlings/cuttings (sourced north of Maclean as the local survey was unsuccessful in finding more plants of RGRW)

Action 3 – Introduction of propagated RGRW and associated habitat plantings to receival site adjacent to Maclean interchange - Management Zone 1

Action 4 – Vegetation management at the in situ RGRW location in the road reserve to the north - Management Zone 2.

In accordance with the Threatened Flora Translocation Strategy for the W2B project (RMS 2015), the translocated RGRW plants were tagged, gps and monitored, and results documented in an annual monitoring report. The Strategy requires that monitoring and associated maintenance for translocated threatened plants be carried out for five years. This is considered to be the minimum necessary to ensure that the translocated threatened species has a reasonable chance of becoming established and persisting on the site.

This Annual Report has been prepared to provide an update on the progress of implementing the Rehabilitation Plan. The most recent monitoring for this report was carried out in August 2021. The following section presents the most recent results and an overview of work carried out since 2019.

Results

Action 2 - Seed collection and propagation

As Action 1 was unsuccessful in locating any further RGRW trees near Maclean, a small quantity of seed was collected in late 2019 from a known population of RGRW located within the project boundary near Coolgardie Rd (Wardell) on Section 10 of the W2B project.

The seed was germinated and 12 plants grown-on for approx. 18 months. For a high survival rate the seedling plants needed to be a good size and the root system well developed before planting out.

The propagated plants should be very similar genetically to the Maclean population as the Wardell population is the closest population of RGRW to the Maclean site. No obvious differences in leaf traits or other morphological traits were evident between plants from the two locations suggesting that genetic variation if present is unlikely to adversely affect establishment and long-term survival of the seedlings introduced to the Maclean receival site.

Action 3 – Management Zone 1 (translocation receival site) - introduction of propagated RGRW

The translocation receival site was fenced and weed control consisting of spraying Crofton Weed and exotic grasses in preparation for planting of rainforest pioneer/shelter species and introduction of RGRW later in the year, was carried out by Ecos Environmental in 2020.

In January 2021, twelve propagated RGRW seedlings at least 40 cm high and approx. 18 months old, were planted into the receival site. Most of the fenced site was flooded or waterlogged after heavy rain, which was fortunate as we could see the parts of site that were too wet and flood prone for RGRW, and able to select planting points on the slightly higher part of the site where there was some soil drainage. The plants were mulched with cane mulch and chicken wire tree guards installed around each plant to deter wallaby grazing.

The survival rate was 100% after six months (to August 2021) and all plants had produced new growth (Table 1). One plant was defoliated by insects after planting but has produced vigorous new leaf growth.

Action 4 – Management Zone 2 (in situ RGRW site) – vegetation management

A single RGRW sapling occurs in situ (naturally) within the road reserve on the eastern side of the highway a few hundred metres north of the southern Maclean turnoff.

A dense infestation of the exotic vine Dutchmans Pipe (*Aristolochia elegans*) at the site threatens to smother the RGRW sapling. Weed control carried out by Ecos Environmental involved spraying Dutchmans Pipe with glyphosate and metsulfuron (Brush-off). The cut-and-paint method was not applied as the copious white sap exuded by cut stems of this species is reported to be toxic and a serious health hazard.

Weed control work has been carried out for 2 years but the site is still infested with Dutchmans Pipe, which covers a large area. The RGRW remains in reasonably good health and has put on some growth since management began.

Table 1: Coordinates and condition of 12 Rusty Green-leaved Walnut (*Endiandra muelleri* subsp. *bracteata*) planted in the fence translocation site adjacent to the Maclean interchange, recorded August 2021.

Waypoint	Co-ordinates (GDA, decimal minutes)	Attribute	Height (m)	Condition
192	S29 28.169 E153 12.359	Emb	0.5	Good, new shoots
193	S29 28.172 E153 12.355	Emb	0.6	Good, new shoots
194	S29 28.171 E153 12.353	Emb	0.9	Good, new shoots
195	S29 28.171 E153 12.351	Emb	0.6	Good, new shoots
196	S29 28.172 E153 12.351	Emb	0.7	Good, new shoots
197	S29 28.174 E153 12.349	Emb	0.8	Good, new shoots
198	S29 28.177 E153 12.349	Emb	1	Good, new shoots
199	S29 28.177 E153 12.350	Emb	0.6	Good, new shoots
200	S29 28.178 E153 12.349	Emb	0.6	Good, new shoots
201	S29 28.177 E153 12.347	Emb	0.9	Defoliated, new shoots
202	S29 28.174 E153 12.346	Emb	0.9	Good, new shoots
203	S29 28.176 E153 12.344	Emb	0.5	Good, new shoots
204	S29 28.176 E153 12.343	Corner SW		
205	S29 28.183 E153 12.350	Corner SE		
206	S29 28.168 E153 12.365	Corner NE		

Proposed Work Schedule 2021 -2022

Action	2021-2022 (Year 4)
Maintenance	
Management Zone 1 <ul style="list-style-type: none"> Water RGRW during any long dry spell – most likely between Oct-Jan. Control grass and weed growth around plantings 	Oct & March (two site visits)
Management Zone 2 <ul style="list-style-type: none"> Spray Dutchmans Pipe 	Oct & March (two site visits)
Annual Monitoring and Report	JulyAugust



Plate 1: Translocation receipt site for RGRW adjacent to the Maclean interchange. Twelve RGRW were planted near the tall fence on the uphill side of the side.



Plate 2: Two RGRW inside wire tree guards and Camphor Laurel removal behind. Highway embankment in the background. The original tree was located in back corner below embankment.



Plate 3: A RGRW inside a chicken wire tree guard showing healthy leaf condition 6 month after planting out.



Plate 4: RGRW translocation site at the Maclean interchange. The open grassy area has been planted with *Acacia melanoxylon*, Bangalow Palm and Bottlebrush Tree to provide shelter for RGRWs. Most have tree guards to prevent wallaby grazing (active at site).



Plate 5: In situ (naturally occurring) RGRW sapling in the road reserve north of the Maclean Interchange.