

4 *Macrozamia pauli-guilielmi*

Macrozamia pauli-guilielmi is an endangered species restricted to coastal lowland forests in the Wide Bay district on sandy or loamy soils. This species, like all cycads, loses its leaves over a period of several years as they are shed and renewed (Forster and Holland 2007), generally during spring.

This is a small cycad with an underground trunk (caudex) to approximately 30 cm and strongly spirally twisted leaf stems, which may be sparsely hairy towards the base, with shiny mid to dark green new foliage; leaves fade to dull green with age (Hyslop and Haskard 2005). Mature leaves usually number 2-8 and may reach 1 m or more, with numerous thickened leaflets.

Coning appears to be irregular, occurring once every 4-6 years (Jones 2002). Male and female cones are borne on separate plants, each up to 20 cm; female cones may be larger and stouter than those of males, which are narrower and generally curved. Seeds in female cones become orange to bright red and enlarged when mature and force cones apart ready for dispersal.

Seeds may be numerous (up to 40 or more) and rarely dispersed far from the parent plant (Primack and Miao 1992); however, to a limited degree native rodents and marsupials (and occasionally, other animals) disperse seed locally, less than 100 m from the parent, (Cain et al 2000).

5 Translocation monitoring data and results

5.1 Field data

Many cycads were in a poor condition prior to translocation due to slashing, vehicular traffic, grading, and spraying with herbicide as a result of regular road verge maintenance activities. Neumann Contractors water trucks were in the vicinity when the latter took place and were able to hose the herbicide off in time to save dozens of cycads (once the parties responsible had left).

No insects or insect damage was observed or noticeable during the translocation period (August-October 2012) perhaps because of how poor many affected plants already appeared. Again, during the first monitoring period (15-16 January 2013), other than a single caterpillar, no insects or insect-damage was observed or noticeable. Therefore, no information is present in the following tables.

The field data collected prior and post translocation presented here in table format is for direct comparison over time. The second and final report due in eighteen (18) months from now will provide comprehensive monitoring information based on data collected at three-monthly intervals during that period.

The descriptions of the original leaves and/or leaflets (foliage) were condition-based due to the abundance of dead and dying leaves (pre-existing). The condition of the foliage on many translocated cycads reflected the biology of this species, as leaves are shed and renewed over several years (Jones, 2002), usually in flushes during spring (Forster and Holland, 2007).

The numbers of resprouts and/or new leaves in translocated plants is the simplest and surest method (in addition to new cones or seedlings) to measure survival rates and the overall success of the translocation project. This is discussed further in section 7, 'The translocation process'.

5.2 Plant numbering

Cycads for translocation were GPSed, tagged and labelled over a period of several days; occasionally some additional plants were located amongst thick grass or dense vegetation and processed in situ during actual translocation.

At times, this numbering occurred simultaneously at different locations under the supervision of different team technicians, thus making continuity of numbering a difficult process.

Additionally, for example, not all tagged and labelled plants were translocated, and more plants were translocated than were originally tagged, some plant numbers were doubled up across different sites, and then there was contending with on-going road design changes and labels damaged by wildlife such as crows.

Labels also fade and are lost over time as they biodegrade, so when a numbering oversight occurred at the Poona Creek recipient site, plant numbering was reformatted into chronological order, superseding the original numbering. Reformatting of plant numbers is complete for both recipient sites, benefiting comparative data collection for the ongoing monitoring period (eighteen months).



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Tagged, trimmed and treated - large female macrozamia, complete with seed, awaits translocation

Table 1 Primary recipient site 12 October 2012

Location/CH	Hole No.	Number of plants	Original Plant No.	Foliage	Male/female	Fruit (cones)	Insect damage	New seedlings
12 October 2012								
Primary recipient site								
NB. Plant No.* = new plant located at time of translocation; not previously tagged or GPSed								
GPS location of hole #1 [REDACTED]								
LHS	1	█	[REDACTED]	multiple dead leaves				
RHS	2	█	█	reasonable condition				
RHS	3	█	█	multiple dead leaves				
RHS	4	█	█	poor condition				
LHS	5	█	█	poor condition				
LHS	6	█	█	poor condition				
LHS	7	█	█	poor condition				
LHS	8	█	█	poor condition				
RHS	9	█	█	healthy				
LHS	10	█	█	some dead leaves				
LHS	11	█	█	poor condition				
RHS	12	█	█	reasonable condition				
RHS	13	█	█	multiple dead leaves	male	old cones		
RHS	14	█	█	unhealthy				
LHS	15	█	█	some dead leaves				
RHS	16	█	█	unhealthy				
LHS	17	█	█	some dead leaves				
RHS	18	█	[REDACTED]	unhealthy				

Location/CH	Hole No.	Number of plants	Original Plant No.	Foliage	Male/female	Fruit (cones)	Insect damage	New seedlings
LHS	19	█	█	unhealthy				
RHS	20	█	█	some dead leaves				
RHS	21	█	█	unhealthy				
LHS	22	█	█	unhealthy				
LHS	23	█	█	reasonable condition				
RHS	24	█	█	some dead leaves	male	old cone		
LHS	25	█	█	healthy	male	old cone		
LHS	26	█	█	some dead leaves				
LHS	27	█	█	unhealthy	male	old cone		
RHS	28	█	█	reasonable condition				
LHS	29	█	█	healthy				
RHS	30	█	█	most leaves dead				
RHS	31	█	█	poor condition				
RHS	32	█	█	unhealthy				
LHS	33	█	█	healthy				
LHS	34	█	█	poor condition				
LHS	35	█	█	healthy				
RHS	36	█	█	healthy				
RHS	37	█	█	one dead leaf	male	old cone		
LHS	38	█	█	healthy	male	old cone		
RHS	39	█	█	some dead leaves				
RHS	40	█	█	unhealthy				
LHS	41	█	█	poor condition				
RHS	42	█	█	reasonable condition				
RHS	43	█	█	reasonable condition	male	old cone		
LHS	44	█	█	healthy				
LHS █	45	█	█	unhealthy	male	old cone		

Location/CH	Hole No.	Number of plants	Original Plant No.	Foliage	Male/female	Fruit (cones)	Insect damage	New seedlings
LHS	46	█	██████████	multiple dead leaves	female	with seed		
LHS	47	█	██████████	one dead leaf				
LHS	48	█	██████████	two dead leaves	female, male	with seed, old cone		
LHS	49	█	█	unhealthy				
LHS	50	█	██████████	unhealthy				
RHS	51	█	█	healthy				
RHS	52	█	█	reasonable condition				
RHS	53	█	█	reasonable condition	male	old cone		
LHS	54	█	██████████	multiple dead leaves	male	old cone		
LHS	55	█	█	some dead leaves				
RHS	56	█	█	healthy	female	with seed		
RHS	57	█	██████████	reasonable condition				
		█	█					
Total		██████████	█					