

Koala Beach Restoration Works Report

October 2018 - November 2019

During the year between October 2018 and November 2019 bush regenerators have continued to maintain areas brought under maintenance, approximately 34.57ha and extend primary work, approximately 8.87ha, into new work zones. See Figure 1. The continued funding allows rotational well timed treatment when regrowth of weeds requires attention, which in turn, reduces the time and effort involved.

Regular maintenance enables development of native biodiversity and habitat to replace dominant exotic species and strengthens native forests' resistance to weeds.

Very dry conditions during most of 2019 have reduced regrowth of weeds and the demand for control in work zones. The usual flush of spring growth has been almost non-existent. Exotic grasses in elevated areas are so drought-affected that usual efficient spot spray would be futile. Extremely dry conditions have allowed significant extension of primary work into low-lying wetland areas. These areas normally have a short window of safe work opportunity due to reduced access through wet areas and invasion of mosquitoes. To date the presence of mosquitoes is virtually non-existent.



Figure 1 Koala Beach Approximate areas of restoration works October 2018 – November 2019



Figure 2 Koala Beach Work Zones (Koala Beach Habitat Restoration Plan 2015)

Restoration October 2018 – November 2019

Work zones are listed below, as identified for funding in 2016. The numeric label and site name correspond with work zones detailed in the Koala Beach Habitat Restoration Plan (2015).-See Figure 2.

1 Common Blossom Bat Reserve

Weed control maintenance has resulted in a reduction of dense exotic grasses and Corky Passionflower in the zone. Bush regenerators manually controlled woody weeds and climbers, cleared long grass from around smaller trees then spot sprayed groundcover weeds through the prepared area.

Exotic grasses and other weeds in this zone are drought-affected at present. Normal spring maintenance in this zone will be delayed until after significant rain has fallen.

Two person days March 2019.

2 Glossy Black - cockatoo



Plate 1 Glossy - Garden dump piles behind houses on Lomandra Avenue

Maintenance runs were completed in late 2018. Native groundcovers have expanded into areas once dominated by Setaria, Broadleaf Paspalum, Molasses Grass and Rhodes Grass. Brush Box, Forest Oak and other native species have established amongst native groundcovers. Considerable disturbance has occurred during construction of a mountain bike track along the north east ridgeline. Two Glossy Black Cockatoos were observed during works. A follow-up spot spray was commenced along the lower slopes in October 2019. Dumping of garden waste was observed and bush regenerators spoke to the resident and explained this was not acceptable. Follow-up literature of council policy is yet to be delivered by bush regenerators.

Mosquitoes can make work difficult on lower slopes of this zone.

Eleven person days were used to maintain this zone. The zone is now due for follow up maintenance.

3 Muskheart

Maintenance has been focused along the forest edge adjoining the APZ behind Muskheart Circuit. Forest beyond the edge is in very good condition with very few weeds. Exotic grasses, isolated Lantana, Camphor Laurel, Edible and Corky Passionflower were treated by spot spray in November 2018 and again in August 2019. Some dumping of garden waste was observed and the resident was informed this was unacceptable. Weed control beyond the edge would be more exploratory 'search and destroy' and not a priority at this point. Further maintenance could be delayed until after significant rain or towards the end of summer.

Mosquitoes can make work difficult in this zone.

Two and a half person days were used to maintain this zone.

4 Upper Grey Gum Gully

Two maintenance runs have been undertaken through "Upper Grey Gum Gully" during March and August 2019. Mainly spot spray of exotic grasses and Singapore Daisy creeping into the gully from neighbouring back yards. Some larger Giant Devils Fig and Tobacco were also controlled. Bush Regenerators include work downstream, along the drain to Lomandra Ave. Exotic grasses and invasive species like Winter Senna, Giant Devils Fig are also treated in council gardens adjacent.

Mosquitoes can make work difficult in this zone.

Three and a half person days were used to maintain this zone. Control of native vines would be beneficial in forest at the top of the drain

5 Lower Grey Gum Gully



Plate 2 Lower Grey Gum Gully - native groundcovers like 'Koala Bells' benefit from control of exotic grasses

Maintenance through "Lower Grey Gum Gully" in August 2019 was timely to control regrowth of Winter Senna, Giant Devils Fig and Lantana around the pond on the lower edge of the zone. Passionflower species and exotic grasses were treated in this area and throughout the rest of the zone. Some outbreaks of Coral Creeper are treated along the south-east edge of the zone.

Regeneration of native species is excellent throughout the zone. Although exotic grasses still require regular follow-up, they are reduced to fragmented patches and native groundcovers continue to expand.

Mosquitoes can make work difficult in this zone.

Twelve days were used to maintain this zone.

6 Entrance North

Follow up maintenance through "Entrance north" involved control of isolated weeds through the core and more detailed treatment along edges. Some Bitou was controlled along the tidal eastern edge. Outbreaks of Coastal Morning Glory behind the pump station and in forest on the south east corner have responded well to treatment. Excellent progress has been made in this Zone keeping maintenance to a minimum.

Mosquitoes can make work difficult in this zone.

One and a half days were used to maintain this zone.

7 Entrance South

Follow up was undertaken in December 2018 and again in September 2019 to control regrowth of Senna and exotic grasses. Native groundcovers are expanding and the occurrence of weeds is greatly reduced.

Mosquitoes can make work difficult in this zone.

Six days were used to maintain this zone.

8 Macadamia South



Plate 3 Macadamia South - bush regenerators work through dense Winter Senna dominating much of the midstory

Extensive primary control of woody weeds has been undertaken in 2019. This area connects to Entrance South and Lower Grey Gum Gully. Very dry conditions have allowed access into swampy areas and almost eliminated the formidable presence of mosquitoes, a positive effect of the

drought. Dense Winter Senna, Lantana, Slash Pines have been manually controlled progressively over a large part of the zone while the opportunity is presented.



Camphor Laurel, Giant Devils Fig, Umbrella Trees and Groundsel have also been treated during primary work. Some garden plants e.g. Agave and Dracaena have been treated along edges behind houses. **30 days primary plus 3 days follow up** along original edge with Lower Grey Gum Gully. There are more Slash Pines and dense Winter Senna yet to be treated in this zone.

Mosquitoes can make work difficult in this zone during wet season.

Monitoring for regrowth and maintenance of previous Winter Senna areas until seed bank is exhausted is essential to prevent re-infestation.

Thirty days were used for primary work and three days follow up in this zone.

Plate 4 Macadamia South - dense Slash Pines are controlled by drill and injection

10 Creek



Plate 5 Creek - larger Climbing Nightshade was treated manually prior to spot spray

Manual control of larger Climbing Nightshade, Giant Devils Fig and Winter Senna was required prior to spot spray. The zone has transformed from a degraded, weed infested area to a diverse natural habitat with minimal weeds over the years of maintenance. Maintenance of a planted area is included in this zone. An extension of primary work along the north western boundary would enhance the zone.

Mosquitoes can make work difficult in this zone.

Seven days were used to maintain this zone.

12 Tongue



Plate 6 Tongue - patches of juvenile Umbrella Trees were controlled during maintenance

Maintenance was undertaken late 2018. Control of woody weeds such as Giant Devils Fig, Tobacco, Lantana and Winter Senna was required prior to spray of exotic grasses. Follow-up spot spray through most of the zone was repeated in August 2019. Native groundcovers have increased and regeneration of trees is evident. An infestation of Coastal Morning Glory on the western edge near the gate has responded well to treatment.

Primary control of dense Winter Senna and other weeds along the northern edge adjacent to the drain and on elevated islands in wet areas was completed in September 2019. A strip along the eastern boundary ('Compensation') was included in the primary work. **4.5 days Primary.**

Monitoring for regrowth and maintenance of previous Winter Senna areas until seed bank is exhausted is essential to prevent re-infestation.

Mosquitoes can make work difficult in this zone.

Thirteen days were used for primary work and five days maintenance in this zone.

13 Dunghir Aboriginal

Woody weeds and climbers were treated and dense grasses were cleared around native seedlings prior to spot spray. Corky Passionflower was also treated throughout the zone. This zone will progress well after maintenance spot spray in August 2019.

Four days were used for maintenance in this zone.

15 Barrage



Plate 7 Barrage - bush regenerators manually control tangled Lantana and Winter Senna

Primary control of weeds was undertaken during September and October 2019. Dense sections of Lantana and Winter Senna were controlled manually. Exotic grasses were cleared around small natives and sprayed. Extension of primary control of weeds to meet with planting areas adjacent will enhance regeneration and planting projects.

Monitoring for regrowth and maintenance of previous Winter Senna areas until seed bank is exhausted is essential to prevent re-infestation.

Mosquitoes can make work difficult in this zone.

Thirteen days were used for primary work in this zone.

18 *Endiandra*

Maintenance was undertaken in March 2019. This site is tiny and requires only hand-weeding preparation and spot spray. Some Giant Devils Fig, Tobacco, Coastal Morning Glory and annuals were treated. This site will require maintenance when significant rain has fallen. Monitor for recruitment of Green-leaved Rose Walnut. When available plant an additional five Green-leaved Rose Walnut using cuttings sourced from the estate.

Half a day was used for maintenance in this zone.

23 *Arthraxon*

The exotic grasses were sprayed through the *Arthraxon* patch after die-back and seed-drop in July 2019. Council slashed the area in October 2019 and the regeneration team raked and removed most of the slashed grass to encourage germination of *Arthraxon* seeds in spring. Recent monitoring of the site observed very limited germination to date. Extremely hot, dry weather during spring may result in low regeneration of the *Arthraxon* this season.

The forest behind *Arthraxon* (a section of "Macadamia West") and council gardens across the drain to the north are included during maintenance of plantings adjacent to *Arthraxon*. Giant Devils Fig,

Tobacco, Umbrella, Siratro, Horsegram and Passionflower species were controlled manually where required, exotic grasses are spot sprayed.

Mosquitoes can make work difficult in this zone.

Five days were used for maintenance in this zone.

26 and 27 Plantings

Maintenance of planted areas have been included during work at Koala Beach. Although planted trees are well-established, exotic grasses, Winter Senna, Giant Devils Fig, Climbing Nightshade and other weeds require manual control prior to spot spray.

Five days were used for maintenance in the plantings.

Priority 2 Management zones to commence in 2020 (Table 1 Koala Beach HRP 2015)

9 Sports Field North

A strip of Sports Fields North along the road edge opposite Zone 26 has been maintained for several years since a request from council to control Giant Devils Fig, Winter Senna and Climbing Nightshade visible from the road.

11 Macadamia West

A section of Macadamia West located west of Arthraxon site has been maintained for several years as part of works in Arthraxon.

14 Compensation

A strip of Compensation adjacent to Tongue has received primary work and maintenance as part of maintenance in Tongue.

16 Christies

The eastern section Christies adjacent to Glossy Black-cockatoo has been included in maintenance runs through Glossy for many years after bush regenerators were contracted to control weeds in APZ behind houses in Lomandra Ave.

17 Camphor

No work commenced

Recommendations

Continue to monitor and maintain all previously worked zones as required. Priority to be given to all Winter Senna primary work areas to prevent reinfestation from soil seed bank.

Complete primary control of Winter Senna, Slash Pines and other woody weeds in Macadamia South to bring entire zone to maintenance level.

Maintain plantings along Tom Merchant Drive – including section of natural forest in between - Macadamia West adjacent to bridge. Control Giant Devils Fig, Climbing Nightshade and Winter Senna infestation in planting 24.

Extend primary work into Macadamia West as mature Giant Devils Fig present in this zone and then add to maintenance rotation.

Extend primary work into Priority 2 work zones Compensation, Sportsfield North, Christies and commence Camphor. As primary completed add the zone to maintenance.

Table 1 Works undertaken 2019 and proposed maintenance 2020

Work Zone	Maintenance 2018-19	Primary 2018 - 19	Proposed Maintenance 2020
1 Common Blossom Bat	2		5
2 Glossy Black-cockatoo	11		10
3 Muskheart	3		3
4 Upper Grey Gum Gully	3.5		3
5 Lower Grey Gum Gully	12		12
6 Entrance North	1.5		2
7 Entrance South	6		5
8 Macadamia South	3	33	12
10 Creek	7		6
12 Tongue	13	5	12
13 Aboriginal Dunghir	4		4
14 Barrage	13		8
18 Endiandra	1/2		1
23 Arthraxon	5		5
26 & 27 Plantings	5		5
	89.5	38	93