

FOX GULLY Restoration Report

August 2005 to June 2008

Prepared by Michael Fox

Fox Gully Bushcare is supported by:

MEG Mt Gravatt Environment Group



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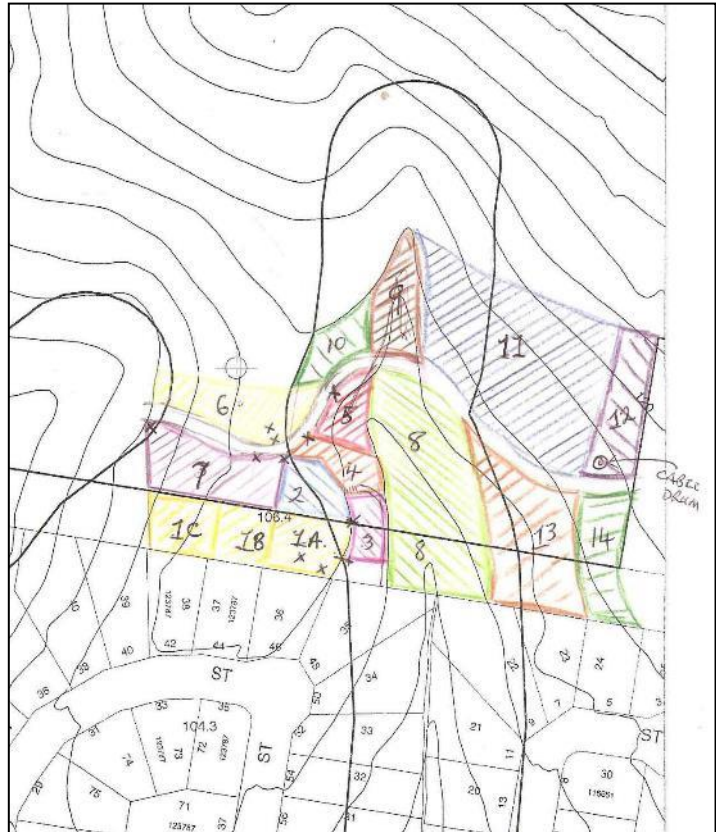
Fox Gully Bushcare covers the area of Mt Gravatt Reserve behind properties in O'Grady and Arafura Streets, Upper Mt Gravatt.

The zones identified for restoration cover the most damaged areas in the top end of the gully catchment. Fox Gully is one of two key wildlife corridors through residential areas on the southern slope of Mt Gravatt.¹

The greatest damage to this area is caused by weed infestation:

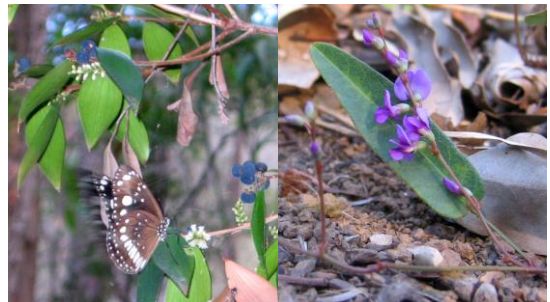
- Trees – Chinese Elm, Chinese Rain Tree, Camphor Laurel and Umbrella trees.
- Agave, Creeping Lantana, Red Natal Grass, Fishbone Fern, Bamboo and Purple Succulent.

Rubbish dumped in the area includes building waste – bricks/fibro/concrete, garden waste and miscellaneous household waste.



Reserve visitors leaving the formal tracks in large numbers eg. orienteering activities, are also causing damage in sensitive areas.

Discrimination between native flora and weeds was identified as key issue. Sue Jones, Mount Gravatt Environment Group (MEG), provided a species list of the 260 plants identified within the Reserve. This has now been developed into *Flora of Mt Gravatt Reserve* – a photographic database record of the species list, designed to support bushcare work by volunteers and educate mountain neighbours about the impact of garden escapees.



Flora of Mt Gravatt Reserve

The species list (see Appendix B) has expanded to include 290 different plants of which 55% have been photographed. It is concerning that 29% of identified species are weeds. The database provides detailed information of species within the Fox Gully Zones supporting planning species for replanting the seriously degraded areas. Griffith University Eco-centre is also using *Flora of Mt Gravatt Reserve* as part of their schools program.



Susan Jones and Michael Fox

Specialist advice freely given by botanist Ann Moran has been invaluable in ensuring the accuracy of species identification.

1. Gasteen David - *Ecological Protection Report for Mt Gravatt Precinct* (Draft), March 2006, Mt Gravatt Environment Group & Brisbane City Council

Progress Summary – 2005 to 2008

Flora of Mt Gravatt Reserve – adopted by Griffith Eco-Centre for schools program
Bulimba Creek Catchment Coordinating Committee award to MEG Fox Gully Site
(Appendix F)

Zone 1

- Area expanded to include O’Grady St numbers 42 to 46
- Rubbish and major weeds removed

Zone 2

- Weeds removed and natural regeneration in progress

Zone 3

- Major weed clearing – Purple Succulent, Dragon Fruit, Guinea Grass, Bamboo
- 420 native grasses, herbs, shrubs and trees planted
- 25 neighbours and friends on planting day and article in Southern Star

Zone 4

- Major infestation of Bamboo removed
- Site stabilised with logs and natural regeneration in progress

Zone 5

- Creeping Lantana removed and natural regeneration in progress

Zone 6

- Creeping Lantana, Cobblers Peg and Mother of Millions removed
- Weeds being monitored and natural regeneration in progress

Zone 7

- Large Umbrella Trees, Chinese Elm and Agave removed
- Bricks and rubbish removed
- Site stabilised with logs and mulching in progress to manage weeds
- Public relations information sign for walkers on fire trail

Zone 8

- Clean-up in progress
 - 3 cu metres of Purple Succulent removed – composting onsite
 - Large Yellow Oleander and 20 litres of seeds removed
 - 5 Chinese Elms removed - mulched onsite

Zone 9

- Restoration in progress – sponsored by Four Walls and a Roof
- 6 bags of Fishbone Fern removed
- 5 different native ferns identified in gully

Zone 10

- Weeds being managed – major infestation of St Paul’s Wort controlled in 2008
- Lantana and Cobblers Pegs removed
- Fungus infection in native White Root being managed

Zone 11 – 14

- No significant action to date

Return on Brisbane City Council Investment - (Appendix A)

Local Community Contribution is equal to \$4 for every \$1 invested by BCC.

Local Community Contribution	\$25,932	80%
BCC Contribution	\$6,349	20%
Total Project	\$32,279	

Zone 1

The plan for Zone 1A, B & C, the area immediately behind 42 to 46 O'Grady Street, is to provide a firebreak by maintaining as mown parkland with minimal replanting.



Restoration started in August 2005 with removal of garden waste, Umbrella & Loquat trees, Queens Palms and Crucifix orchids.



In 2007, Zone 1 was expanded to include the area behind number 44 (Zone 1B) as the owner agreed to the removal of three large Umbrella trees. Part of the agreement is that Zone 1B is to be kept mown as a firebreak.



Removal of these large Umbrella Trees is an important step in restoration of the whole Fox Gully site because birds love the seeds and spread them right through the bush hundreds of metres back from tracks and backyards.



In 2008, Zone 1 expanded to include the area behind number 42 (Zone 1C) with agreement to remove the spectacular Chinese Rain Tree.

A truly beautiful tree and a real feature, this tree is also a major cause of weeds spreading deep into the bush as the wind-dispersed seed generates hundreds of seedlings.

Because of the visual impact for number 42, the tree removal has been deferred till late 2008 by which time the bushland behind will be significantly cleaned up and well on the way to restoration.



Zone 3 Restoration - 2006

Restoration started in 2006 with regular mowing of Guinea grass and removal of garden waste.



This mature Tallowwood was killed by invasion of this Dragon Fruit with its amazing flowers.



Removal required not only a professional tree-felling job but also the first significant negotiation with neighbours to get support for removal of this spectacular flowering tree-killing weed.

Identification of the dead Tallowwood as a Koala food tree and actual sighting of Koala in Zones 3 and 6 - Dec 2006 and Jan 2007, was a significant factor in negotiations.

Serious restoration of Zone 3 started in April 2006 with the removal of a large area of bamboo.

Camphor Laurel logs were recovered from the slope and used to stabilise ground exposed by removal of bamboo in Zone 4.



By February 2007 -The bamboo was removed and about half the slope had been cleared. However continually walking across the slope was difficult, dangerous and slow. Steps and a path improved access dramatically and provided a natural demarcation with Zone 8.

Proving that the bush just needs a chance this Scrambling Lilly was discovered once the Guinea grass was cleared.



The slope had to be systematically stripped bare of all but the remaining few natives. Because the Guinea grass was flowering it had to be bagged and removed off site to minimise risk of reseedling.

At the end of February 2007, with the Guinea grass gone, the Purple Succulent was the target. The weed was removed by hand, loaded into 20 litre paint tins and carried back up to the flat for mulching.



However, Purple Succulent turned out to be far too watery to be mulched – just clogging the machine.

Because of the continuing dry weather the solution was to spread the weed in the area to be mulched and simply walk over to break the skin. Drying in the sun produced a useful strip of mulch to slow any future rain and retain water on bare ground.



Fox Gully Bushcare Group established

By the end of March 2007 Zone 3 was stripped bare of weeds except for the Dragon Fruit on the dead Tallowwood. This was beyond the capacity of one individual - professional help was required. Sue Jones MEG and Kylie Withers, Habitat Brisbane Officer, provided help in setting up Fox Gully Bushcare as a sub-group of the MEG Bushcare group.

With Kylie's support the initial Zones were mapped out and a masterplan prepared detailing which areas needed replanting and which could be restored by simply clearing the weeds and letting nature take over restoration.



By the end of September 2007 BCC contractors have removed the dead trees. The Dragon Fruit was removed from the site because of the potential for regrowing but the trees were left for use in the restoration work.

With the dangerous trees removed planning started for replanting early November but first the steep slope was addressed. The first step was stabilisation of the slope to hold plants and mulch in place. Also improving safety and maximising productivity for a large group of volunteers required a second set of steps and improved access to the slope.





Site Preparation for Planting

The large logs left by the contractors are moved into place at the top of the slope to minimise the risk of people simply walking over the edge.

Moving down the slope stakes were needed to hold logs in place. Care was required to ensure these stakes were strong enough to hold the weight of people walking on the slope, not simply holding mulch in place.



Steps were made of scrap timber and held in place with timber stakes so over 10 or 20 years everything will simply rot away and the restoration will be complete.

With the steps in place this end of the slope became accessible for placement of logs.





November 13th - Approximately 128sq metres was ready for replanting.

Neil Millstead, BCC Habitat Officer, helped plan the planting and organised the loan of equipment such as a 100mm auger which made it feasible to prepare 400 plus holes ready for planting ...

... as well as 10 cu metres of mulch for weed control and moisture retention ...



... 420 indigenous grasses, herbs, bushes, wattles and trees.

Ready to go and to minimise planting shock the plants were soaked overnight in a solution of Seasol.

The forecast was good ... rain expected over the next few weeks. However with the drought and water restrictions we need the security of having tank water onsite for planting and follow-up watering. Sandra Wilson at number 44 donated 5,000 litres and a loan pump from BCC delivered the water to the site.



Planting Day – November 18th - 2007

Sunday morning and twenty six family, neighbours and friends signed on for the first Fox Gully Bushcare planting.



Kangaroo grass, Creeping Beard grass, Love Flower, Prickly Pine, Acacia - falcata, fimbriata, disparrima, concursens, Spotted Gum ... the planting was underway.



Young and old turned out to help.

Sue Jones (MEG) working with Wendy Chen, a student from Taiwan.



Many hands make light work ... and when you have 420 plants you need every hand you can get on the job.

Public relations is an important part of bushcare work if we want to really impact ... educating and changing attitudes. Rosemary O'Brien interviews the team for her article in the Southern Star. (Appendix D)



A Scrub Turkey comes to inspect. Based on observations of the Turkeys' habits, the path they used was marked out and left clear. As a result these sometimes troublesome birds have not interfered with the planting.



By lunch time ... 83 manhours had been put in ... 420 plants in 10 cu metres of mulch distributed.

Len Dobson at number 48 has provided the barbeque for this neighbourhood event.

Ray and Lyn Fulton from 47 O'Grady Street.

Finally an inspection tour of the replanted Zone 3 helps the team appreciate what can be achieved in bush restoration.



A bonus was discovery a delicate Dwarf Morning Glory in Zone 10 ... a new addition to the species list!





Six Months Later

This bare ground ...

... is transformed ...



... and we have our first flowers on the *Acacia falcata*.

Zone 4 Restoration - 2006

In Jan 2006 Zone 4 was overgrown with impenetrable bamboo stopping anything else growing.



Poisoning with glyphosate was unsuccessful ...

... so permanent removal required first cutting down and mulching then digging out the mass of roots to minimise regrowth. The roots were then bagged and removed from the site. The small amounts of regrowth were now able to be controlled by poisoning.





By July 2006 most of the bamboo had been removed, mulched and used on site.

Logs were placed on on the slope to reduce risk of erosion and hold mulch in place.

To ensure the bamboo did not recover the whole area including Zone 8 was cleared. A large amount of previously cut bamboo had to be recovered from the gully for mulching.



Restoration In Progress – June 2008



The plan for Zone 4 is to allow natural regeneration – remove bamboo, logs on slope for erosion control and ongoing monitoring of weeds (particularly bamboo).

Bamboo growing on slope and off cuts dumped in gully – April 2006.

By June 2008 natural regeneration was underway as can be seen in comparison photos of the same view.



Native grasses like this *Oplismenus aemulus* (Creeping Beard Grass) have self-sewn in the bare earth. Establishing grasses to keep weeds out is an important first step in bushland repair.

Logs placed on slope for erosion control in Zone 8 have also become a haven for native grasses, *Trema tomentosa* (Poison Peach) and *Lomandras*.



From this ground still stripped bare in Aug 2007 ...



... to the grasses, herbs and shrubs starting to reclaim the area in 2008.

Lomandras, shrubs like *Daviesia villifera* (Bitter Pea) ...



... .. and vines like *Geitonoplesium cymosum* (Scrambling Lilly) are reappearing now that they are not competing with the bamboo.

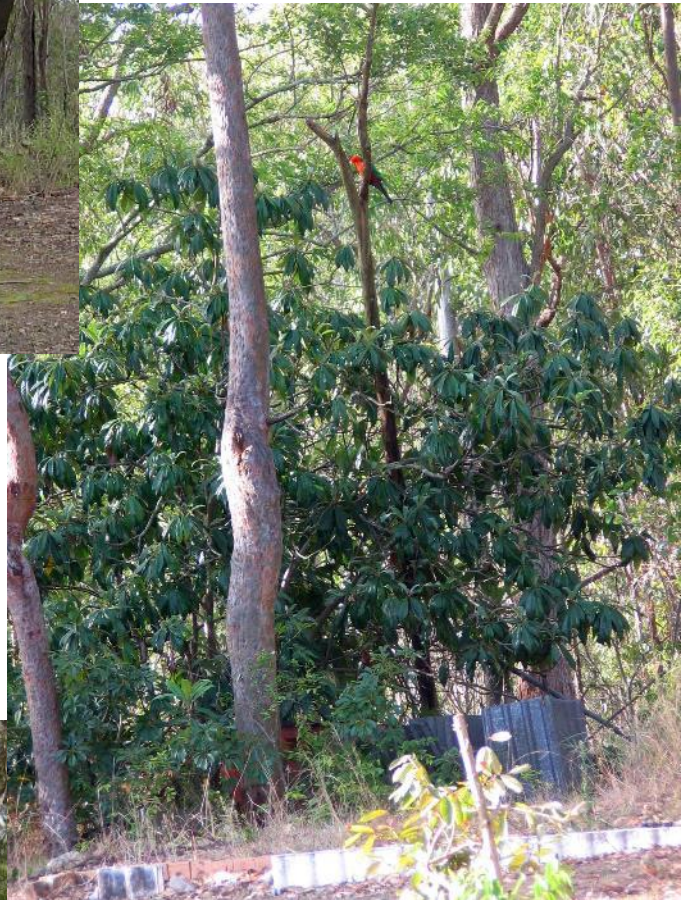
Natural regeneration has been an excellent decision - the bush will recover if it given a chance. The process is slower but the resources required are relatively small and the plant varieties are automatically indigenous to the forest.

Zone 7 – Restoration 2007



October 2006 – Zone 7 is heavily infested with weeds - large Umbrella Trees, run down gardens

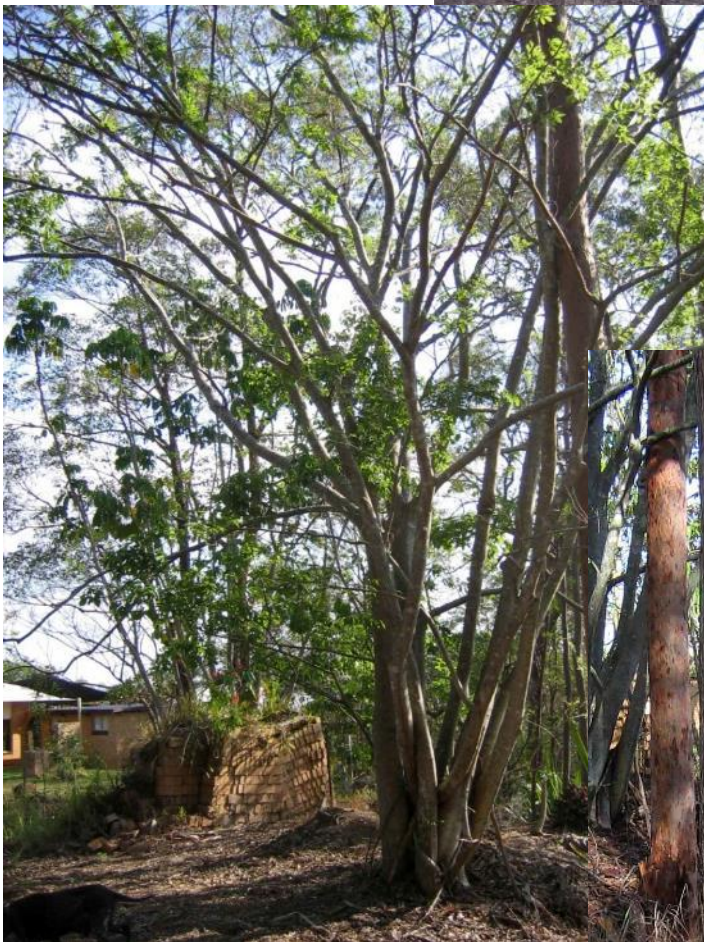
... Loquat Tree ...



... Agave and a huge Chinese Elm.

May 2007 restoration is underway ... the Loquat Tree has been cut down and mulched on site.

Old drums and roofing iron was put out for the curb side cleanup.



August 2007 – The clean-up has progressed but removal of a large pile of bricks and Chinese Elm are jobs that need professionals with the right equipment.



Removal of the Agave by hand is considered too great a risk and will need the BCC Habitat team to organise a bobcat.



December 2007 – the planting in Zone 3 is complete work starts on removal of the Umbrella Trees and the old garden in Zone 7.

The area behind the garden has been dug out at some time and used for dumping garden waste.



One of the Umbrella Trees has Elkhorn Ferns growing on base ... so these native ferns have to be relocated.





First step is the weeds which had to be bagged and removed from the site. .



With the weeds removed the soil was dumped onto the garden waste as the first step in restoring the natural ground profile.



Soil was also used to fill a hollow in Zone 1 which retained rain water and acted as a mozzie breeding ground.



Weeds and garden almost gone – just the Umbrella Tree stumps to be dug out.



February 2008 – the garden is gone ... stumps, weeds, old roofing tiles, etc ...



and the soil recycled on-site starting the restoration of this garden waste pile back to natural bushland.

The unofficial fence has also been cut back after discussions with neighbours.



As agreed in the Bushcare Plan Mike Fox, was responsible for negotiating approval, from the owner of number 44, for the removal of the large pile of bricks stored in the bushland.

However, rain has kept the fire trail unusable until April 2008 when a BCC contractor starts the removal job with his Bobcat. Bricks first ...

... then onto weeding the Agave.



Four truck loads of bricks and three truck loads of Agave were removed.

By the end of the day this site had gone from this – May 2007 ...



... to clear and ready for restoration. At this stage the only major work remaining is removal of the Chinese Elm.

The difficult to remove Agave is gone ...



... leaving a scar that clearly shows the large area covered by this invasive weed.



May 2008 – A sign in place to tell walkers why trees are being removed and raise interest in local wildlife. (Appendix D)



April 2008 - Restoration has started with mulching for weed control and the first planting.



The first plants restored are two *Corymbia citriodora* – Spotted Gums.

We know these Spotted Gums are indigenous to the reserve because they were growing in gutters of the house ... obviously thriving in the hydroponic environment they created by damming the rainwater.





The Elkhorn Fern has been relocated from the Umbrella Tree stump to a tree nearby and is now thriving.

About 80% of the weeds removed are recycled onsite as mulch or compost, logs to minimise erosion or just scattered to provide habitat for lizards and insects. Other dumped materials are also recycled, like this blue stone being used to minimise fire danger to trees with fibrous bark. This will eliminate the need to clear around the base of trees prior to burn-offs.



June 2008 - Restoration of the slope. The garden waste is buried and the ground is now being mulched to control weeds while replanting progresses. Coverage of the mulch provided by BCC is doubled by spreading shredded paper then covering with a layer of mulch.

The area is roped off to minimise risk of people walking over the steep edge.



The slope needs to be stripped of Guinea Grass and Mother In-laws Tongue then stabilised with the treated logs donated and old timber recycled from the site.



Old fibro (asbestos cement) was found half buried. This was dug out and bagged for removal when it was wet after rain.

Nature is also getting actively involved in the recycling. Fungi on the branches of Umbrella Trees being used for erosion control.





Ann Moran advises that getting the grasses established is the key to regeneration. Once the grasses are established the weeds will be controlled and the herbs, vines and trees will find their way back. Ann also advises that it is important to get the planting done in Autumn/Winter so the roots are well established before the Summer heat hits.

After the initial success with the Spotted Gums and Acacia, transplanting is being trialled. Trees not wanted in Zone 1 are being transplanted and ...

... indigenous grasses transplanted from beside the fire trail where they are mown or damaged by vehicles.





June 2008 and at last the Chinese Elm is gone! The BCC Habitat team arrived with chainsaws, tree poison and giant chipper.

A Camphor Laurel, Chinese Elms and Umbrella Trees were cut from lower on the slope and chipped for use onsite. An extra 2 cu metres of mulch delivered by the BCC team will allow the site to be stabilised against erosion and weed invasion.



Based on the growth rings this Chinese Elm was more than 20 years old.

Zone 8 – Restoration 2008

March 2008 – Restoration of Zone 8 started with removal of a large Yellow Oleander which was covered in seed pods, so it was important to get it out quickly.

Aside from the Oleander, Glycine ...



... and Purple Succulent have crowded out all but a small number of trees and some Barbed Wire Vine.



The Oleander has been cut down and 20 litres of seed pods collected for disposal off site.

The Oleander branches piled up ready for mulching.



The Purple Succulent has too high a water content to mulch so composting is the solution. Black plastic on the ground and over the top.

April 2008 – 3 cu metres of Purple Succulent has been collected into compost piles and 5 Chinese Elms have been cut out.

The cleared areas are mulched first with shredded paper then covered with the mulched Oleanda and Chinese Elm.



The recycled Umbrella Tree branches are a surprise when they produce shoots which have to be broken off.

Zone 9 Restoration - 2007

Zone 9 is the area of gully upstream of the fire road. A pretty area with a small waterfall at the top end. The slopes are lined with Basket, Rasp, Rock/Mulga, Elkhorn Fern and Mountain Bracken. However, a major infestation of Fishbone Fern is crowding out the native ferns. Secondary weeds are Easter Cassia and Ochna.



Rasp Fern



Elkhorn Fern

Restoration of Zone 9 started in July 2007 with stripping Fishbone Fern from the upper slope to reduce risk of reinfection once clearing the gully is started.



June 2008 – native grasses and Lomandras are coming back.

Zone Sponsor – Four Walls

& A Roof

In April 2008, sustainability company - Four Walls and a Roof - www.fourwallsandarooft.com.au agreed to sponsor restoration of this sensitive area, committing labour for restoration and promotion of the restoration project through the company newsletter.

