

Fulham Streamside Reserve

HFNC's environmental weed control project 2006-2015



Report of Hamilton Field Naturalists Club

Rod Bird
October 2015

Cover picture

The herbicide-wiping tool used by HFNC to control Cape Tulip and similar environmental weeds that produce corms. The herbicide-wiping approach is not appropriate for widespread pasture weeds such as Capeweed (shown in the photo taken on a degraded riverside area at Fulham).

Herbicide-wiping tool and its application for selective control of bulbous weeds

The tool that HFNC adapted (by fitting small pads cut from kitchen sponges to the rubber cups) is a “**Pick up – Reaching Tool**” obtained from *The Reject Shop* (imported by TRS Trading Group, 245 Racecourse Rd, Kensington, Vic 3031). We fixed the pads to the cups with a thick wool thread, after drilling 4 holes near the edge of the rubber cups. The pads are then trimmed to size and shape.

The tool has a pistol grip and trigger to operate the jaws. It is cheap (\$3), lightweight, fairly robust, easy to use and very effective since both sides of the leaf or stem are contacted. Simply grasp the plant near the base and lift. No bending is required and many thousand plants can be treated quickly without strain to the back or hands. The tool can also be used to dab the leaves of garden escapees such as *Oxalis purpurea*.

The pads are dipped into a container that holds the herbicide-wetter-dye mixture. We use plastic containers that originally held produce (honey or rice), obtained from supermarkets. The opening of the container need not be great but must allow the pads to be inserted (use the trigger to press the pads together to allow this, then release the trigger to allow the springs to enter). Drill a hole in the centre of the container lid to attach it to the container by a cord, so that it can be more readily closed for transport.

Harlequin Flower (*Sparaxis bulbifera*), Cape Tulip (*Morae flaccida*), African Weed Orchid (*Disa bracteata*), Wild Gladiolus (*Gladiolus undulata*) or other weeds of similar structure are individually wiped with a concentrated herbicide solution (*Metsulfuron methyl*, 1 g/L, *Glyphosate* 30 mL/ L, surfactant 5 mL/L, dye 5 mL/L) using this tool to deliver herbicide to the pest plant without contacting other plants. Note – 1 g of *Metsulfuron methyl* powder (Ally=Aim=Brushoff) is about ¼ kitchen teaspoon measure. Omit the *Glyphosate* if there are adjacent native species (incl. most native grasses) that cannot be avoided and that would be affected if wiped.

Metsulfuron methyl has a very low toxicity to mammals and is safe to handle. It should kill the bulbs, but slowly. *Glyphosate* speeds up the kill, a necessary attribute if the plants have flower heads and would otherwise set viable seed before dying off.

Metsulfuron methyl solution may become inactive if stored, so only prepare a small volume for immediate use (e.g. 1.5 L may be enough for one day).

The objective of herbicide-wiping is to kill the pest plants but not the adjacent native species (e.g. orchids and native lilies) that are often closely associated. Broad-scale spraying of Cape Tulip and other weed species results in all of the native species in the spray zone being killed, thus creating a vast amount of bare ground that grows only Cape Tulip and other weeds in the following year. Nor does it actually kill all of the Cape Tulip plants in the spray area because these plants are difficult to hit with spray and the stem/leaf surface does not wet easily. The same applies to many other bulbous species, such as Wild Gladiolus

Controlling weeds on Fulham Streamside Reserve on the Glenelg River

Fulham Streamside Reserve occupies 860 ha, fronting the Glenelg River for some 6 km in the north of the Parish of Balmoral, approximately 10 km N of Balmoral.

This reserve has a very rich flora, with 330 indigenous species. The history, flora and fauna of the reserve has been outlined in the following report:

*Fulham Streamside Reserve – an 860 ha woodland frontage to the Glenelg River 10 km north of Balmoral
Rod Bird, October 2015*

This reserve has a history until 1987 of grazing and has thus acquired many weed species. Adding to that has been the spread of weeds brought in by campers and other visitors, horses, trail bikes and other recreational vehicles. At least 88 weed species have been identified there.

Hamilton Field Naturalists Club has worked with Parks Victoria since 2006 to control some weeds in the western half of the western block of the reserve. For the first 5 years HFNC submitted a tender to PV to conduct the work; in the second 5 years, apart from fuel costs in 3 years the work was voluntary.

Our main objective has been to reduce the spread of Cape Tulip and to, hopefully, eradicate *Sparaxis bulbifera* that constituted a catastrophic threat to the native heathland flora. We have applied the herbicide-wipe method to control Cape Tulip. That provides the minimum of damage to adjacent native plants.

Since starting this annual spring activity we have seen the emergence of African Weed Orchid as a new threat and the proliferation of Wild Gladiolus from the river margin. Those are very intractable weeds and it may never be possible to eradicate them once they have established.

There has been the beginning of work in Western Australia on possible biological control agents for Cape Tulip. We accept that eradication is impossible but had hoped that, if we could hold the tide of Cape Tulip for a time, the emergence of a biological control agent would be the long-term solution to the problem.

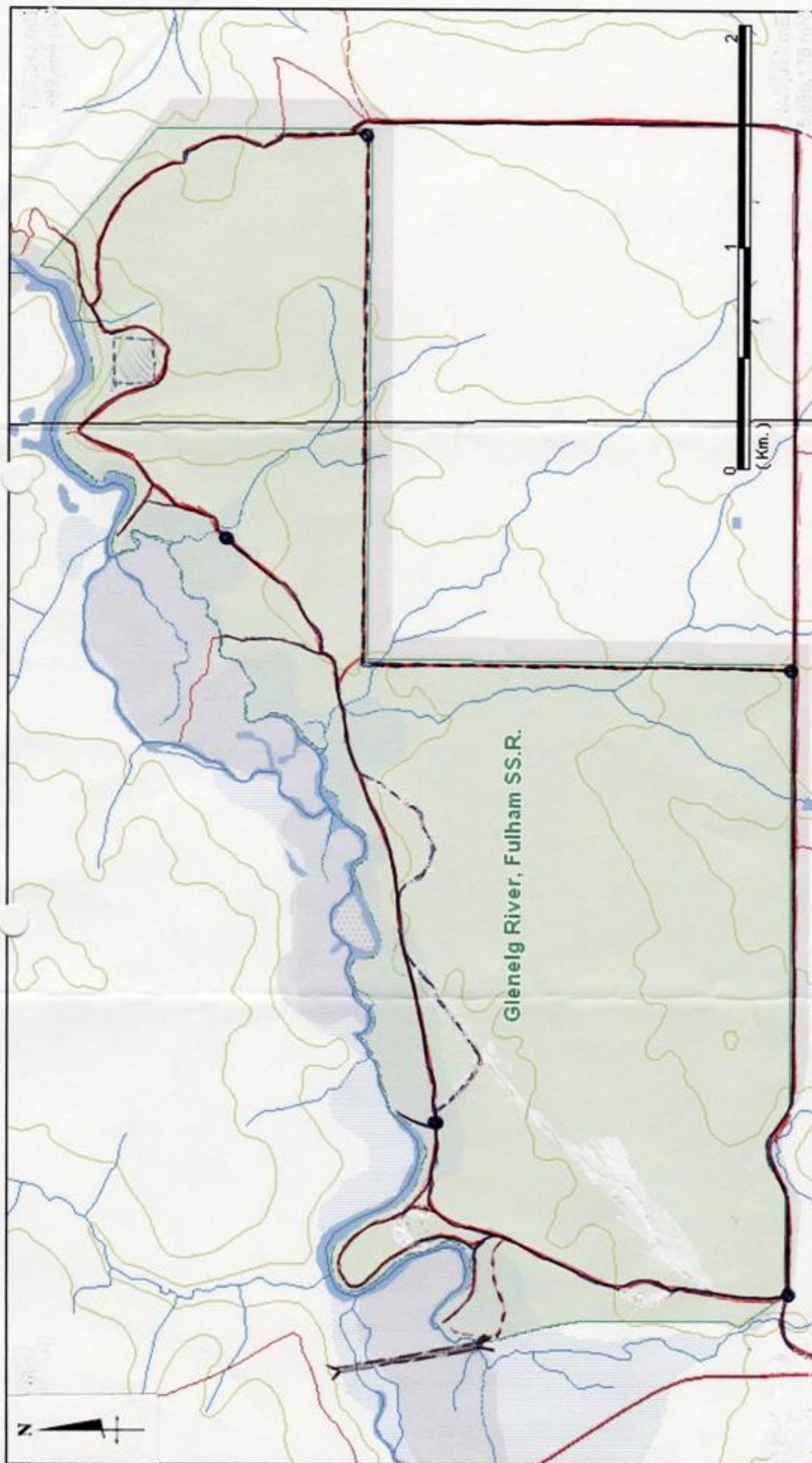
Cape Tulip produces a multitude of seed and that is spread by wind and probably by birds and other animals. The corms and seed can also be spread in the mud on vehicle tyres. Typically, a single plant will germinate in the woodland/grassland and establish a corm. It will grow from that in the following winter-spring and produce a flower. Seeds shed that year will germinate the next year, often resulting in many seedlings in a patch of a few square metres, with some plants further away. Failure to control those first individuals rapidly results in a mass of Cape Tulip that can be controlled only by broad-scale spraying – and that inevitably means obliterating most of the native vegetation and allowing other weeds the opportunity to invade. Among those weeds are Cape Tulip, which often survives spraying because it is very difficult to wet.

To be successful, efforts also have to be made to also control the movement of vehicles, keeping them on the tracks. Weeds will also be spread by hay fed to horses that are confined on native grassland areas. This is, of course counter-productive to efforts to eradicate the weeds.

While most motor drivers who deliberately drive into wet areas or do ‘circle work’ on open areas of heath will flout any signs that ask them to stay on the roads, others will do so. They – and others – can also exert some influence on those who do not observe the rules. There are too few staff to visit these reserves on week days, let alone weekends when most of the damage is done. Maybe police from nearby towns could – if they were asked – help with an occasional patrol. To be effective there is an obvious need for prominent signs that spell out visitor obligations to stay on the tracks, and some indication why it is necessary.

The history of ‘care-free’ camping, driving, horse riding and other activities – and an ignorance of (or disregard for) the floristic values of the reserve – has resulted in the present attitudes towards this magnificent reserve. Allowing horses to be kept on areas of native vegetation is one obvious flaw. Failure to make the River Track weatherproof is another problem, as is the failure to provide a toilet. Unless there are changes in the status and management of this reserve there is little point in HFNC, or any other group, trying to control the weeds. It seems likely that HFNC may not continue to work in this reserve.

The following pages provide a background to our involvement at Fulham (a letter to PV in 2005) and **Annual Reports** of the work that has been done over the 10 years from 2006 to 2015.



Scale 1 : 25,000

Glenelg River, Fulham SS.R.

HAMILTON FIELD NATURALISTS CLUB



PO Box 591
Hamilton
Vic 3300

8 Nov 2005

Brian McKinnon
Parks Victoria
Casterton

Dear Brian

This letter relates to the **Fulham Streamside Reserve** and our concern over its weed management.

The Hamilton Field Naturalists Club spring campout at the **Fulham Streamside Reserve** gave us a spectacular display of wildflowers (particularly on the areas burned in the wildfire of February 2005 – a tremendous display of lilies, orchids, yam daisies, Podolepis, etc) and also dramatic evidence of weed invasion that threatens this magnificent flora area, and uncontrolled vehicle access to some parts (and problems caused by sections of "official" tracks that cannot cope with wet conditions).

We are very concerned about the future of this priceless natural asset. Perhaps one of the reasons for its apparent neglect has been that the Land Conservation Council in the mid 1980s decided to list it as a Streamside Reserve rather than as a Flora Reserve. We believe they did that because of the traditional recreational fishing aspect along the 5 km river frontage that defines the northern edge of the reserve. Our club had advocated it as a Flora Reserve, on account of the flora values. Our members have been actively involved in flora surveys there since 1987, with botanist Cliff Beaglehole, and have a current botanical list for the reserve of 300 native species. We added another 5 species on our last trip.

As you will be aware, there are rare and endangered species present (notably orchids) and some unique outliers. The latter include *Callitris gracilis*, *Melaleuca neglecta* and *Triodia bunicola*. We believe (as did Cliff Beaglehole) that this is the best flora reserve in the Dundas Tableland landform. Since grazing was removed in 1987 it has shown a remarkable improvement in species such as Buloke and Slender Cypress.

We know that weed control is not easy (we have worked on *Sparaxis* and Phalaris on Crown Reserves) but were appalled by the outcome of spraying to control Cape Tulip on non-target flora on the Fulham Streamside Reserve. We believe that a team was still working there last week and continuing to damage the reserve. We would be happy to visit the area with you as soon as possible and highlight the problems.

There are three main weed threats on the Fulham Reserve:

- **Cape Tulip** – some large and small areas have been completely blitzed by the spray operators, except for tulips that have survived on the sprayed areas. There has been little attempt to spot-spray just the offending plants. The result has (and will be) the loss of the native species that are often intimately associated with the tulip. We noted one remarkable small area near the track along the river (near the *Melaleuca neglecta* saline area) that contained over 100 *Caladenia tentaculata* orchids, and the only patch we saw in 2 days, adjacent to tulip plants. These will be wiped out if the spray operator returns and adopts the same heavy-handed approach. A similar situation exists for *Lyperanthus nigricans* orchids on the bank of the river nearest the reserve entrance track. There were thousands of orchids there (and we saw no others in the reserve) and these would be very vulnerable to tulip spraying.
- **Sparaxis bulbifera** – this needs to be urgently tackled. There are infestations at critical places along tracks, and along the Edgewood Road, among some of the finest stretches of native vegetation. Unless attention is paid to this terrible weed then we will lose a priceless tract of relatively pristine landscape. The problem is already large but it is possible to prevent the weed from invading the remaining areas of vegetation away from the river. We did apply some treatment to a couple of isolated outbreaks, but much more comprehensive attack is needed.
- **African weed Orchid** – we noted that action is being taken to control this pest. We also found many plants outside of the areas that someone had marked with bamboo stakes and red tape (plants inside

these areas had been spot-sprayed with herbicide and red dye). We dug up and destroyed any plants and bulbs we found outside those areas but our search was by no means systematic. We were pleased that the spread so far does not seem to be as extensive as we feared.

Whatever the cost to control the agricultural weed (Cape Tulip) in an acceptable manner, one cannot justify an approach that destroys the value and integrity of the Reserve. We note that the DPI Corporate Plan (2004-2007) has, as one of the four Government Commitments "*protecting the environment for future generations*". Clearly, the present damaging practice cannot be allowed to continue.

It may be necessary, at this stage, for contractors to continue to get Cape Tulip under control. But they need a very specific task proposal, so that they can learn about the job, properly cost it, and be able to operate in a way that complies with the task prescription.

We think the following matters are of importance when engaging a contractor for this area:

- **Using an appropriate spray head** – the sprayers used at Fulham delivered a burst of spray with a wide arc. We recommend a shielded head that delivers the spray to the particular plant over a very narrow circle. That is not possible to do with the equipment used at Fulham. Even where efforts had been made in some places to restrict the size of the spot sprayed the sprayed area around a single plant still approached a square metre. That is perhaps 10-20 times the necessary size. To achieve that, spot-spraying, rather than the "swipe" method, must be used. This approach would slow things down but it is necessary to prevent collateral damage on these important flora reserves. Keeping the sprayed areas small is also essential if one wants adjacent native species (rather than exotic weeds) to re-colonise the areas. Of course, a back-pack system is much to be preferred in such areas, rather than the motorised systems that employ hoses and hand-gun delivery heads.
- **Operator training** – the operators needs to target the particular species when working on non-farmland areas where there are other important values to protect. The operators will need on-site training to identify important native flora so that they can be more careful in critical areas.
- **Other weeds** – *Sparaxis bulbifera* is a serious environmental threat here, so why not spot-spray those – and the odd Phalaris clump – when encountered whilst spraying Tulip?

We believe that the only way to make a desirable impact is to engage the services of people (such as field naturalists) who have the botanical knowledge, interest and time to spend on the problem, to target the offending species without destroying too many non-target species. That way there is also a good chance that the bare spots will be filled by the adjacent native species, rather than weeds.

We believe that members of the Hamilton Field Naturalists Club are willing, have the time and expertise, and would be prepared to spend 3 or 4 days at a time (perhaps on 2 occasions) each spring, camping on site, to systematically treat fringes of areas most at risk (and any spots within) to get control of the situation. Nothing has been done in the past to control *Sparaxis* and most other environmental weeds, hence the present parlous state of affairs on all of our reserves.

Our club would be happy to submit a tender to undertake such work. We envisage perhaps 4 people being engaged on the project. Our costs would include chemicals, fuel, some equipment maintenance, and a moderate amount for labour. We anticipate spending perhaps 5 hours per person per day walking the area and spraying the pest species. We would concentrate on *Sparaxis*, Cape Tulip, Phalaris and African Weed Orchid in the critical areas adjacent to (and in) the high-value flora areas of the reserve. We believe that this would be a very economic and effective way of getting the job done. Clearly, something has to be done or we can forget about keeping pristine flora reserves.

Our club has an ABN, is incorporated and has insurance cover.

Yours faithfully

John Cayley
President HFNC



HAMILTON FIELD NATURALISTS CLUB

PO Box 591
Hamilton
Vic 3300

October 2006

Report on Weed Control Work at the Fulham Streamside Reserve in September 2006 compiled by Rod Bird

Summary

- The HFNC (6 members) spent >60 person-hours spraying pest and environmental weeds at the floristically rich Fulham Streamside Reserve, the western half, concentrating on the fringes to tracks and streams.
- The herbicides used were metsulfuron methyl (Ally) and glyphosate, together with a surfactant (Pulse) and dye marker (purple). Weeds were, wherever practicable, spot-sprayed to achieve little off-target deaths.
- The weeds controlled were One-leaf Cape Tulip, Harlequin Flower, South African Orchid, Wild Gladiolus, Bridal Creeper and Perennial Veldt Grass, Toowoomba Canary-grass, Cocksfoot, Yorkshire Fog-grass and Spear Thistle. We did not have time to scan and spray the entire weed population.
- The precise locations of weed hotspots were marked by GPS, to enable follow-up work in later years
- The degree of infestation from Sparaxis was greater than anticipated, and this serious weed requires stringent attention in following years. Together with Cape Tulip, this weed is readily spread by grader/bulldozer tracks and recreational vehicle tracks. There was ample evidence of that.
- To justify further weed eradication work, there has to be a serious attempt to curtail off-road vehicle traffic. Most noticeable is the flagrant disregard for “road closure” signs, and the consequent mess created at the swampy areas of the River Track, even in this dry year. We saw steady traffic in “closed” section.
- We recommend that the River Track be improved (there are 3 sites that need mounding up) to allow all-year traffic, rather than attempt a seasonal closure – unsupervised closures and absence of fines ensure that signs will always be ignored by 4WD drivers who are accustomed to doing as they like here.
- We further recommend that the 2 loop tracks south off the River Track be closed because these are a danger to the long-term integrity of the vegetation in these valuable marsh areas. If the River Track is open there is no reason for the other tracks to remain open.
- Off-road recreational motorcycles and other vehicles also constitute a danger to the reserve, through spreading weeds, cutting up fragile areas and risking the spread of Phytophthora. Signs are needed.
- New flora records: *Clematis microphylla*, *Linum marginale*, *Lobelia alata*, *Melyctis dentata*, *Myosotis australis*, *Pterostylis nutans*, *Stackhousia mongyna* & *Templetonia stenophylla* in Oct. 2005-Sept.2006.
- Birds: we recorded 64 species during our weekend (see Table 2).

Works undertaken in September 2006

From 14-17 Sept. 2006 and 28 Sept. 2006 at the Fulham Streamside Reserve, members of Hamilton Field Naturalists Club located and sprayed the noxious and environmental weeds listed below:

- | | |
|--|---|
| • <i>Moraea flaccida</i> (One-leaf Cape Tulip) | • <i>Phalaris aquatica</i> (Toowoomba Canary-grass) |
| • <i>Sparaxis bulbifera</i> (Harlequin Flower) | • <i>Dactylis glomeratum</i> (Cocksfoot) |
| • <i>Disa bracteata</i> (South African Orchid) | • <i>Holcus lanatus</i> (Yorkshire Fog-grass) |
| • <i>Gladiolus undulatus</i> (Wild Gladiolus) | • <i>Cirsium vulgare</i> (Spear Thistle) |
| • <i>Asparagus asparagoides</i> (Bridal Creeper) | • <i>Ehrharta calycina</i> (Perennial Veldt Grass) |

The general areas spot-sprayed were:

- W margin of the Entrance Tk, from 100 m S of the bulldozed fire line to the minor W track at 1.45 km (37-09-13.8/141-51-34.0) that leads to the river bend. The Entrance Tk margin has a massive infestation of Sparaxis.
- The area N of the track at 1.45 km from the entrance (37-09-13.8/141-51-34.0) and the river frontage at the most southerly bend, running N and including all areas W of the Entrance Tk and river as far as the road closure point on the River Tk (37-09-04.2/141-51-46.4). It has some Cape Tulip, Sparaxis and Bridal Creeper but also patches of Red-Beak Orchids that would be affected by spray operators unaware of the identity of the orchid.
- E of the Entrance Tk from Edgewood Rd (37-09-56.4/141-51-23.2), N to the river and to the right hand side (south) of the River Tk that runs E to where the third drainage line crosses the track (37-08-53.4/141-53-10.3). There are massive infestations of Sparaxis, Wild Gladiolus and Phalaris, with many smaller areas of Cape Tulip, Sth of the River Tk. The area Nth of the track (river side) is worse (we did not treat that area).
- E from the intersection of Entrance Tk and bulldozed fire-line (37-09-25.7/141-51-27.9), along the fireline to Edgewood Rd – sporadic occurrences of Cape Tulip found there, from corms transferred by the machine.
- E from the Entrance Gateway (37-09-56.4/141-51-23.2), along Edgewood Rd for 3 km to a corner of the reserve – there are patches of Cape Tulip, Sparaxis and pasture weeds along this section.
- W from the N-S Boundary Tk that runs from Edgewood Rd to the corner of the reserve where the boundary turns east – patches of Cape Tulip and African Weed Orchid occur there.

- N down the creek that crosses Edgewood Rd and runs through the reserve (with 2 other tributaries from the E) to cross the River Tk – this is a critical waterway, since weeds that spread down that line will invade the body of the reserve. Cape Tulip and (in the lower part) Sparaxis occur sporadically along these drain lines.

The precise location (GPS latitude/longitude co-ordinates on Aust 84 datum) of the infestations are listed below, so that these areas can be re-located next year for follow-up treatment. Unless that is done then the efforts made this year will be futile in the long term, since it is rare that all plants are eradicated in the first instance (some plants have dormant corms or have set seed in a previous year, while small plants may not be observed).

1. W edge of the Entrance Tk, from 100 m S of the bulldozed fire line (37-09-25.7/141-51-27.9) to the W track at 1.45 km (37-09-13.8/141-51-34.0)

An extensive, severe infestation of Sparaxis (and the odd Cape Tulip) occurs along an old track, extending 150 m N and 50 m S of the bulldozed fireline. At the S end, this infestation is ~30 m W of the Entrance Tk but largely confined to and near the old (disused) track. These plants were sprayed but the area needs particular attention in following years. The infestation has also spread some distance W down the firebreak and some plants were found and sprayed on a heap of soil on that firebreak ~ 150 m W of the Entrance Tk.

2. N of the track at 1.45 km from the Entrance (37-09-13.8/141-51-34.0) and W to the river frontage at the most southerly bend, including all areas W of the Entrance Tk and river as far as the road closure point on the River Tk (37-09-04.2/141-51-46.4).

No specific GPS readings were taken here – we sprayed many isolated plants of Bridal Creeper (among trees and shrubs near the river in the N section), Wild Gladiolus and clumps of pasture weeds.

3. E of the Entrance Tk from Edgewood Rd (37-09-56.4/141-51-23.2), N to the river and to the S of the River Tk that runs E to where the third drainage line crosses the track (37-08-53.4/141-53-10.3).

There were massive infestations of Sparaxis at various points on both sides of this track – we only dealt with those on the S side. The major sites of infestation are indicated below:

- 3.1 Area W and S of the Road Closure point on the River Tk (37-09-04.2/141-51-46.4) – massive infestation of Sparaxis, with many Wild Gladiolus and Phalaris patches in the section where there are current and old tracks - sprayed. This area needs annual inspection and treatment because these weeds will certainly invade the pristine grassland/heathland to the S and E if unchecked. We found 3 major clumps of Nodding Greenhood close to the serious, blanket infestation of Sparaxis on the old track at 37-09-05.2/141-51-43.8. This was a “new” species for this reserve – it could not survive Sparaxis invasion.
- 3.2 S of River Tk adjacent to Road Closure point on the River Tk (37-09-04.2/141-51-46.4) – bad infestation of Sparaxis, Phalaris, Wild Gladiolus and a few Cape Tulip near the log piles - sprayed.
- 3.3 Several infestations along River Tk to the *Melaleuca neglecta* swamp – severe and extensive infestation of Sparaxis (with some Cape Tulip) at the 1st watercourse. Unless checked, this area now extending 20-30 m S of the River Tk, will infest the whole wetland area. There will be some loss of Poa Tussocks from this, and future, spraying because the weed has invaded this area and intimately associated itself with many of the tussock plants.
- 3.4 E of 1st Diversion Tk to S, at ~50 m S of River Tk in the *M. neglecta* patch by a River red Gum on a bulldozed firebreak (37-09-07.7/141-52-01.6) – a patch of Cape Tulip, sprayed.
- 3.5 A small patch of Cape Tulip ~40 m E from 3.4 (37-09-07.0/141-52-03.0) – sprayed
- 3.6 Another small patch of Cape Tulip further S (37-09-08.3/141-52-02.9) – sprayed
- 3.7 Another small patch of Cape Tulip further S (37-09-09.2/141-52-03.3) – sprayed
- 3.8 At branching of 1st Diversion Tk (37-09-09.8/141-52-11.4) – ~12 active African Weed Orchids (new leaves), and Sparaxis on the track, sprayed.
- 3.9 Along the N branch of 1st Diversion Tk (37-09-09.0/141-52-10.9) – bad infestation of Sparaxis on both sides of this old track, extending for ~40 m to the bulldozed fire trail. Sprayed.
- 3.10 Along the bulldozed fire-line, ~20 m to the E of N branch of 1st Diversion Tk (37-09-08.1/141-52-12.6) – a few Sparaxis shifted there by the bulldozer, sprayed.
- 3.11 Dirt pile on E branch of the 1st Diversion Tk (37-09-08.7/141-52-13.1) – a few Sparaxis, sprayed.
- 3.12 Further E on E branch of the 1st Diversion Tk (37-09-08.1/141-52-13.9) – a small patch of Cape Tulip and Sparaxis, sprayed.
- 3.13 Along River Tk between Melaleuca swamp and Diversion Tk (37-09-04.3/141-52-11.7) – Sparaxis on the track, not sprayed.
- 3.14 Just E of the 2nd waterway (37-09-06.7/141-52-16.1) – patch of Sparaxis on the track.
- 3.15 Along River Tk (37-09-00.3/141-52-39.1) – large patch of Cape Tulip, sprayed.
- 3.16 Along River Tk (37-09-00.7/141-52-41.1) – African Weed Orchid, ~ 10 plants but no new leaves, sprayed.
- 3.17 2nd waterway, a few Cape Tulip along the edges of this ~70-m section of River Tk, sprayed. This section of track needs to be elevated with road fill to keep motorists on the track.
- 3.18 River Tk (37-08-58.9/141-52-46.5) – a sizable patch of Cape Tulip, sprayed.
- 3.19 River Tk (37-08-59.9/141-52-46.6) – another patch of Cape Tulip, sprayed.
- 3.20 River Tk E side of burned Melaleuca, near track (37-09-05.9/141-51-56.9) – Cape Tulip, not sprayed (?).
- 3.21 River Tk (37-09-00.1/141-52-47.3) – a large patch of Sparaxis, partly sprayed.
- 3.22 River Tk, on the E of bog hole (37-08-58.5/141-52-47.9) – patches Cape Tulip sprayed both sides track.
- 3.23 River Tk (37-08-57.0/141-52-52.5) on and off the track around old spray area – patches of Cape Tulip
- 3.24 River Tk, 10 m S of 3.21 (37-08-57.6/141-52-52.8) – small patch of Cape Tulip.

- 3.25 River Tk at intersection with E end of 2nd Diversion Tk (37-08-55.4/141-52-58.5) – patch of Sparaxis on the track, sprayed.
- 3.26 River Tk near 3^d watercourse, ~ 40 m S of track (37-08-54.5/141-53-02.8) – a large infestation on this saline flat, partly sprayed.
- 3.27 2nd Diversion Tk, towards E end near a large River Red Gum (37-08-56.8/141-52-58.4) and an area 20 m E – small patches of Cape Tulip, apparently not sprayed.
4. E along the bulldozed fire-line from its intersection with Entrance Tk (37-09-25.7/141-51-27.9) to Edgewood Rd
There were isolated plants of Cape Tulip located all along this ad hoc fire trail. Sprayed. These would have been the result of corms transferred from Entrance Tk by the bulldozer.
5. Edgewood Rd E from Reserve Entrance
- 5.1 At ~0.9 km near left hand bend – Cape Tulip (~12 plants) ~ 40 m from road (37-09-56.2/141-51-57.8), plus another small patch near the road ~90 m further east (near the Telstra post), sprayed.
- 5.2 At 1.7 km (37-09-57.0/141-52-31.9) – 2 small patches of Cape Tulip near bulldozed area with large trees, ~400 m W of shed on opposite side of the road, sprayed.
- 5.3 At ~1.9 km, another patch of Cape Tulip, sprayed.
- 5.4 At ~2.25 km (37-09-55.0/141-52-52.2), a small patch of Cape Tulip W from the culvert and ~80 m into the reserve. A large area of Sparaxis closer to the road, on the same line, sprayed.
- 5.5 Edgewood Rd (37-09-57.3/141-52-07.6) – Sparaxis, Phalaris and Cocksfoot on the roadside, sprayed
- 5.6 Near spoon drain, 25 m W of white post at 37-09-57.3/141-53-01.9 – 3 Cape Tulip plants, sprayed
6. N-S Boundary Tk from Edgewood Rd to the corner turn east
- 6.1 At a small W-flowing creek ~0.65 km along N-S Boundary Tk from Edgewood Rd (37-09-48.5/141-53-17) – a few Cape Tulip sprayed.
- 6.2 Another W-flowing watercourse at ~1.2 km on the Boundary Tk (37-09-18.9/141-53-19.3) down the creek ~400 m to a pool where 2 channels converge (37-03-14.1/141-53-12.5) – Cape Tulip – many dense patches and much Phalaris/Cocksfoot, sprayed.
- 6.3 At 1.4 km, ~100 m W from Boundary Tk and above the creek – African Weed Orchid, no leaves visible.
- 6.4 A small patch of Cape Tulip along the Boundary Tk (37-09-46.5/141-53-19.5) and into the bush, sprayed.
- 6.5 North of W-flowing creek tributary (37-09-02.1/141-53-17.9) near a big stump and log – a few Cape Tulip plants, sprayed.
- 6.6 Another small patch Cape Tulip sprayed 20 m E of above location, near a medium-sized River Red Gum.
7. Creek at Edgewood Rd that runs N-S through the reserve (with 2 streams from the E, off N-S Boundary Tk)
- 7.1 Down the creek ~100 m (37-09-50.7/141-52-58.1) – small patch of Cape Tulip, sprayed.
- 7.2 Down the creek further (37-09-45.4/141-53-02.2) – small patch of Cape Tulip. Sprayed.
- 7.3 Down the creek further (37-09-49.9/141-53-00.2) – small patch of Cape Tulip, sprayed.
- 7.4 Down the creek further, near large fire-blackened stump (37-09-46.8/141-53-01.3) – small patch of Cape Tulip, sprayed.
- 7.5 Down the creek further on at an S-bend (37-03-41.9/141-53-05.6) – small patch of Cape Tulip, sprayed.
- 7.6 Just downstream from junction with tributary from the east (37-09-29.2/141-53-15.0) – small patch of Cape Tulip, sprayed.
- 7.7 Downstream near bulldozed firebreak crossing the creek (37-09-09.0/141-53-10.9) – 4 small patches of Cape Tulip in gully just upstream, both sides – sprayed.
- 7.8 Downstream ~200 m from stream firebreak crossing (37-09-05.7/141-53-08.0) – small patch Cape Tulip.
- 7.9 Further downstream on W side of creek (367-09-04.0/141-53-08.8) – dense infestation of Cape Tulip.
- 7.10 Further downstream on E side of creek (37-09-02.5/141-53-09.8) – small patch of Cape Tulip, sprayed
- 7.11 Downstream on W side of creek, near confluence with E tributary (37-09-01.6/141-53-09.8) – 6 m² patch of Sparaxis and small spots of Wild Gladiolus.
- 7.12 Intersection of creek with River Tk culvert/drain (37-08-53.4/141-53-10.3) – a few Cape Tulip 20 m SE, sprayed. This location marks the NE boundary of our sprayed area.
- 7.13 N side of E watercourse (37-03-01.7/141-53-13.9) that runs from Boundary Tk, ~ 200 m from corner turn – patch of Cape Tulip ~ 80 m upstream from confluence with main creek, sprayed. Two more spots upstream cited above (6.6 & 6.7).
- 7.14 S side of the W-flowing creek tributary (37-03-04.4/141-53-17.0) near a big tree – a few Cape Tulip.
- 7.15 S side, ~ 40 m further W – a few Cape Tulip by a log, sprayed.
- 7.16 S side, some 250 m from boundary corner – ~ 16 African Weed Orchids ~50 m W from the fence (37-09-05.9/141-53-17.3) – about a dozen plants sprayed but no visible leaves present
- 7.17 S side, further S near Lightwoods (37-09-04.8/141-53-13.4) – medium-sized patch Cape Tulip, sprayed.
- 7.18 S side ~50 m from junction with main creek (37-09-02.5/141-53-12.0) – 3 plants of Cape Tulip, sprayed.



HAMILTON FIELD NATURALISTS CLUB

PO Box 591
Hamilton Vic 3300

20 October 2007

Report on Weed Control Work at the Fulham Streamside Reserve in September 2007

Summary

- Activities – the HFNC (11 members) spent 83 person-hours from 13-16 Sept. and 20 Sept. 2007 spraying pest and environmental weeds on floristically-rich parts of the western half of the Fulham Streamside Reserve. We did not spot-spray any weeds beyond a few metres north of the River Track because that part between river and track is so infested with *Sparaxis*, or so degraded by past broad-scale spraying for Cape Tulip, that unfortunately it would largely be futile.
- Herbicides used – *metsulfuron methyl* (Ally) and *glyphosate* (Roundup), together with a surfactant (Pulse) and dye marker (purple). Weeds were, wherever practicable, carefully spot-sprayed to achieve little off-target deaths. The objective is to allow adjacent native species to re-colonise the small areas sprayed. We are convinced that is the only way to restore the area to its previous botanic composition and health.
- Weeds controlled – One-leaf Cape Tulip, Harlequin Flower, African Weed Orchid, Wild Gladiolus, Bridal Creeper, Perennial Veldt Grass, Toowoomba Canary-grass, Cocksfoot, Yorkshire Fog & Spear Thistle.
- Locations of weed hotspots – most were marked by GPS, to enable follow-up work in later years.
- African Weed Orchid – we saw no plants, possibly because we were too early (some plants have flowered on the rail reserve west of S Reeds Rd near the Wannan in mid-October this year)
- Harlequin Flower – the degree of infestation from *Sparaxis* was greatly reduced in areas spot-sprayed in 2006 but we found many other sites of infestation not sprayed in 2006. Our first efforts went to further work in the sites tackled in 2006. Our efforts were then directed to “new” areas in the western half (see attached map). Principal among these were the western edge along the stream and old railway line; the area between the railway line and the main N-S Entrance Tk; a “new” heavily-infested section of the *Melaleuca neglecta* flat.
- Cape Tulip – this weed was present in numbers, almost all pre-flowering, usually associated with old tracks but also in discrete patches spread across the landscape. This weed, and that of *Sparaxis*, is readily spread by grader/bulldozer tracks and recreational vehicles, also from seed carried by the vehicles.
- River Track – we propose again that this track be improved (there are several sites that could be made trafficable by building up with sand or gravel) to allow all-year traffic, rather than attempt a seasonal closure – unsupervised closures and absence of fines ensure that signs will always be ignored by 4WD drivers accustomed to doing as they please.
- Iluca's new bore track – we were dismayed that Iluka was allowed to install a track into the central part of the reserve, thereby ensuring that this area will also be invaded by weeds. Surely a bore could have been sited at a more appropriate position adjacent to an existing track where it would not have compromised the botanic integrity of this reserve? We are alarmed that Parks Victoria did not stress the importance of this area as a biological reserve. We understand that Iluka has undertaken to cease driving on the track but others are doing so out of curiosity and unless the track is permanently closed off and rehabilitated the damage will increase.
- Western-most loop track south off the River Track – we recommend this be permanently closed because it is a danger to the long-term integrity of the vegetation in these valuable marsh areas. We spent much time spot-spraying infestations of *Sparaxis* along and adjacent to this loop track. If the River Track is open there is no reason for the other track to remain open.
- Off-road recreational vehicles constitute a danger to the reserve, through spreading weeds, cutting up fragile areas and risking the spread of *Phytophthora*. We observed signs of significant vehicle damage adjacent to the Entrance Track, just short of the River Track, where a vehicle had ploughed along an old closed-off track, passing through *Sparaxis* and one of the 3 known clumps of *Pterostylis nutans* in the reserve. **Signs are needed** to remind drivers of their responsibilities. Is it possible to also provide some strategic barriers?
- Status of the reserve – if this reserve had the status of **Flora & Fauna Reserve** would that enable more funding to be available to manage and protect it? Since more than 320 native species have now been found on this reserve, with several rare and endangered, we believe that status is deserved (at least for the portion south of the River Track). HFNC is prepared to advance a case, possibly through VEAC, if that would help.

Birds seen – 50 species, including “new” birds in Flame Robin, Rufous Songlark and Powerful Owl, bringing the total to 96 for this area (see Table 2).

Mammals – Eastern Grey Kangaroo (*Macropus giganteus*) & Black Wallaby (*Wallabia bicolor*) seen.

Flora – one ‘new’ species (Variable Groundsel) was recorded, the total of native species on record being 324.

Works undertaken in September 2007

From 13-16 Sept. 2007 and 20 Sept. 2007 at the Fulham Streamside Reserve, members of Hamilton Field Naturalists Club located and sprayed the noxious and environmental weeds listed below:

- *Moraea flaccida* (One-leaf Cape Tulip)
- *Sparaxis bulbifera* (Harlequin Flower)
- *Disa bracteata* (South African Orchid)
- *Gladiolus undulatus* (Wild Gladiolus)
- *Asparagus asparagoides* (Bridal Creeper)
- *Phalaris aquatica* (Toowoomba Canary-grass)
- *Dactylis glomeratum* (Cocksfoot)
- *Holcus lanatus* (Yorkshire Fog-grass)
- *Cirsium vulgare* (Spear Thistle)
- *Ehrharta calycina* (Perennial Veldt Grass)

The general areas spot-sprayed were:

- **The SW Block** – from entrance at Edgewood Rd, running 1.4 km N along Entrance Tk to the junction with the W track that runs to the old railway bridge, and S along the railway line and creek from 37-09-15.4/141-51-17.5 to the Edgewood Rd. This area was heavily infested with Sparaxis and Cape Tulip on the W edge (the railway area), with many patches near old tracks through the reserve. The edge of Entrance Tk was treated in 2006 and again this year.
- **The NW Block** – the area N of the track at 1.45 km from the entrance (37-09-13.8/141-51-34.0) W to the river frontage at the most southerly bend, then running N and including all areas W of the Entrance Tk and river as far as the road closure point on the River Tk (37-09-04.2/141-51-46.4). It has some Cape Tulip, Sparaxis, Perennial Veldt Grass and Bridal Creeper but also patches of Red-Beak Orchids.
- **The Central Block** – large area E of the Entrance Tk from Edgewood Rd (37-09-56.4/141-51-23.2) N to the river, thence E beyond the newly closed section of the old River Tk to its junction with the diversion loop at 37-08-54.8/141-52-59.2, with the area S of the River Tk (especially the *Melaleuca neglecta* swamps) being treated for many infestations of Sparaxis, Wild Gladiolus, Cape Tulip and Phalaris. We were only able to survey and treat the margins (approx. 200 m wide) of this large area and more effort is needed in future years to survey and eliminate any patches of Cape Tulip that may exist in the central parts.

The precise location (**GPS latitude/longitude co-ordinates on Aust 84 datum**) of the infestations are listed below, so that these areas can be re-located next year for follow-up treatment.

1. The SW Block

- 1.1 In 2006 an extensive, severe infestation of Sparaxis and the odd Cape Tulip ('CT') occurred along an old track, extending 150 m N and 50 m S of the bulldozed fire line. At the S end, this infestation was ~30 m W of the Entrance Tk but largely confined to and near the old (disused) track. These plants were sprayed in 2006 but the area needed further close attention in 2007 for the plants had invaded native vegetation. Sparaxis along the Entrance Tk N was much reduced from 2006.
- 1.2 From the junction with the W Tk at 1.4 km, many patches of Sparaxis and CT were found S of the West Tk towards the old railway bridge.
- 1.3 "Parking Area" at 37-09-15.4/141-51-17.5, where the West Tk turns N along the railway line to the bridge. This area was blanket-sprayed in years past and new CT given somewhat similar treatment recently. Many plants were missed altogether and it is doubtful whether all those sprayed were actually hit by the spray, since they appeared to be relatively undamaged compared with others. We sprayed along the line N to the bridge and in the area W and S of the old fence line at the parking spot.
- 1.4 Big tree E of creek ~ 100 m from 1.3 (37-09-19.1/141-51-19.6) – big patch of CT.
- 1.5 Area E of 1.3 ~150 m (37-09-18.1/141-51-20.8) – clumps of CT.
- 1.6 W End of fire break (37-09-20.6/141-51-18.3) that runs E to Entrance Tk – an extensive outbreak of Sparaxis and CT on the track and off it.
- 1.7 Area in line with River Red Gum cut for sleepers, E ~ 100 m out from S along creek (37-09-22.3/141-51-19.9) – small patch of CT.
- 1.8 W of 2 cut trees at 37-09-23.1/141-51-18.8) – area of ~5 m² of Sparaxis.
- 1.9 Patch of Sparaxis on old track ~ 50 m E of Site 1.8 (37-09-23.6/141-51-21.2).
- 1.10 ~ 100 m S of 1.8 (37-09-25.1/141-51-19.0) – area of ~5 m²
- 1.11 Between big trees N up railway line (37-09-32.1/141-51-19.7) – patch of CT.
- 1.12 Near big cut River Red Gum (37-09-23/141-51-20.9) and ~70 m S to another cut tree and a patch of CT.
- 1.13 Along the railway line at 37-09-26.0/141-51-18 – this was the S end of Sparaxis infestation along the creek and railway line but CT continued sporadically further S. We sprayed from that point N down the creek towards the bridge (1.3) but the infestation was extensive and some damage to other plants is inevitable.
- 1.14 Further S along old railway line at 37-09-31.3/141-51-18.4 – patches of CT off to E and on the line (good patch of Spider Orchids off to the E).
- 1.15 N of orchid places, ~100 m from railway line, at 37-09-30.1/141-51-21.6 – patch of CT.
- 1.16 Several patches of CT ~100 m from Entrance Tk at 37-09-30.0/141-51-23.4
- 1.17 Sparaxis ~25 m² on an old track ~125 m E from railway line (37-09-25.9/141-51-21.3).
- 1.18 Further S along railway line to a pipe under railway line (37-09-32.1/141-51-19.7) – patch of CT.

2. The NW Block

No particular GPS readings were taken in this area – we sprayed many isolated plants of Bridal Creeper (particularly among trees and shrubs near the river in the N section), Wild Gladiolus and clumps of pasture weeds. CT and Sparaxis were present in the S end along the river.

3. The Central Block

- 3.1 N side of River Tk from end of Entrance Tk to Chain Lock on River Track – Sparaxis along the bank.
- 3.2 S side of River Tk to Chain Lock on River Tk – Sparaxis, Cocksfoot and Phalaris clumps.
- 3.3 Patch of CT ~ 70 m SW of Chain Lock at 37-09-06.0/141-51-44.3 – this site rutted recently by a 4WD.
- 3.4 Along River Tk to Melaleuca Flat – main area of CT (~100 plants) started at 37-09-06.3/141-51-49.4.
- 3.5 Near new drain running N to river, near edge of Melaleuca Flat 37-09-05.9/141-51-54.4 – patch of ~50 CT
- 3.6 Corner of old Loop Tk that skirts the W edge of main boggy area of Melaleuca Flat (37-09-05.9/141-51-56.8) – 100s of Sparaxis along old track and off the edges, with 4-5 patches of CT ~50 m S in the melaleuca.
- 3.7 E edge of Melaleuca Flat at 37-09-04.8/141-52-04.2 – a big patch of CT and Sparaxis near the River Tk and along the old track S along the E edge of the swamp (see also Site 3.19)
- 3.8 Between 3.6 & 3.7 a lot of Sparaxis in Poa tussocks and on the saline flat spreading out from the River Tk. This area messed up by 4WDs and a bulldozer putting in a drain off the track. Big holes here in the track. Ally without glyphosate used among the tussocks, in an effort to retain the grass.
- 3.9 E edge of Melaleuca Flat 37-09-10.9/141-51-59.2, ~100 m x 50 m of CT in the sedge.
- 3.10 Further E, edge of Melaleuca Flat in sedge and bare saline area 37-09-11.7/141-52-00.9
- 3.11 A large patch of CT (~40 m²) and 3-4 other patches to N
- 3.12 A small patch of Sparaxis & CT ~40 m (37-09-11.1/141-52-01.4) from 2nd Diversion Tk
- 3.13 2nd Diversion Tk from River Tk – Sparaxis & CT – small spot ~2 m² on edge of Tk on W side at 37-09-11.7/141-52-03.7 and a large patch of CT 20 m SW. Also, 3-4 small patches of Sparaxis (2 ~1 m² & 1 m²) along the W edge of the Tk further S.
- 3.14 S side of Diversion Tk at 37-09-13.6/141-52-05.8, an area of Sparaxis 20 m x 3 m. This outbreak needs a particular watch.
- 3.15 Rubbish heap in an old tree at 37-09-0.7.6/141-52-11.9. A few Sparaxis nearby on bulldozed Tk.
- 3.16 N end of bulldozed fire line at 37-09-08/141-52-10.3 on SE end of Melaleuca Flat – a large area ~10 m x 3 m of Sparaxis there. **Much of the bare area here appears to be due to past blanket-spraying of CT and not salinity.**
- 3.17 E side of Melaleuca Flat ~ 250 m S from River Tk at 37-09-07.6/141-52-09.8. This was an area of some 50 m x 30 m and a very significant infestation of Sparaxis and some CT in 6-8 patches of 2-3 m².
- 3.18 E side of Melaleuca Flat near an old River Red Gum stump (37-09-06.4/141-52-06.7) ~ 100 m S of River Tk – an area of 25 m² CT. Some individuals further along an old track N towards River Tk.
- 3.19 E edge of Melaleuca Flat on River Tk at 37-09-05.1/141-52-04.3, ~20 m E of the culvert. Used Ally alone at this spot to spray Sparaxis among the tussocks in the margin along the E flank of the swamp.
- 3.20 On 2nd creek, on the now blocked section of the River Rd (37-08-59.1/141-52-45.5) – 2 patches of CT on N side and Sparaxis on the track and on N side. A patch of Sparaxis of ~10 m x 6 m occur on S side plus 2 patches of CT ~15 m S of the track, E of the creek.
- 3.21 2 patches of CT each side of the log across the track at 37-08-58.3/141-52-48.4, ~70 m E of 3.20.
- 3.22 A patch of CT on N side of track at 37-08-57.4/141-52-49.5, ~70 m E of 3.21.
- 3.23 Further E on the track, a large patch of CT on S of track at 37-08-57.4/141-52-52.2. This is an area of old blanket-spray that has obliterated other vegetation. Another area of CT occurs near a trench and big old stump and several patches of CT further S.
- 3.24 Junction of close part of old River Tk with diversion now being the new part of the River Tk (37-08-54.8/141-52-59.2) – sprayed Sparaxis on N edge of this junction.

We had no time to check areas further E along River Track, to the culvert at 37-08-53.4/141-53-10.3, the eastern end of the area we checked in 2006. Nor did we check the creek and its tributaries running from Edgewood Rd through the reserve to this point on the River Track. Also, the areas noted along Edgewood Rd were not checked in 2007. These areas, detailed in the 2006 report, need to be checked in 2008 in order to mop up remaining plants.

Works

Thursday 13 Sept 2007- RB 6 hr

Friday 14 Sept 2007 – RB 4 hr

Saturday 15 Sept 2007 – RB 7 hr; RZ & DL each 6 hr; JX, JC & GC each 6 hr; KG, JG, JH, DM & LM each 5hr

Sunday 16 Sept 2007 – RB, RZ, DL, JX, JC, GC each 3 hr

Thurs 20 Sept 2007 – RB 8 hr

Total 83 hours

Chemicals

Spray applied Thurs 20 L, Fri 20 L, Sat ~75L, Sun ~30 L, Thurs 15 L = 160 L

Glyphosate 240 mL, Ally 48 g, Pulse 480 mL, colour dye 640 mL.



HAMILTON FIELD NATURALISTS CLUB

PO Box 591
Hamilton 3300

20 October 2008

Report on Weed Control Work at the Fulham Streamside Reserve in September 2008

Summary

- Activities – the HFNC (6 members) spent 72 person-hours from 12-14 Sept. 2008 spraying pest and environmental weeds on floristically-rich parts of the western half of the Fulham Streamside Reserve. We did not spot-spray any weeds beyond a few metres north of the River Track because that part between river and track is so infested with *Sparaxis*, or so degraded by past broad-scale spraying for Cape Tulip, that unfortunately it would appear to be futile or beyond our ability to handle.
- Herbicides used – *metsulfuron methyl* (Ally) with a surfactant (Pulse) and dye marker (purple) – except for areas infested with Cocksfoot or Phalaris, Glyphosate was not used because it would also kill Tussock and other native grasses. Weeds were, wherever practicable, carefully spot-sprayed to achieve little off-target deaths. In addition, two operators used tongs fitted with herbicide pads to deliver a more concentrated herbicide solution to pest plant leaves without contacting other vegetation. The objective of both spot-spraying and herbicide wiping is to allow adjacent native species to re-colonise the small areas treated. We are convinced that is the only way to restore the area to its previous botanic composition and health.
- Weeds controlled – One-leaf Cape Tulip, Harlequin Flower, Wild Gladiolus, Toowoomba Canary-grass, Cocksfoot, Yorkshire Fog-grass and Spear Thistle.
- Locations of weed hotspots – most were marked by GPS, to enable follow-up work in later years.
- African Weed Orchid – we saw no plants.
- Harlequin Flower – the degree of infestation from *Sparaxis* was greatly reduced in areas spot-sprayed in 2007 but we found a major site of infestation not sprayed in 2006 or 2007 near the eastern edge of the western half of this reserve (adjacent to the N-S stream that flows from Edgewood Rd). The area along and adjacent to the railway line that was heavily infested with *Sparaxis* in 2007 was treated again, but this time only hundreds of plants were found rather than tens of thousands. The treatment of the *Melaleuca neglecta* flats area in 2006 had greatly reduced the presence of *Sparaxis*, and we found much fewer plants this year.
- Cape Tulip – this weed was present in appreciable numbers, all pre-flowering, usually associated with old tracks but also in discrete patches spread across the landscape. This weed, and that of *Sparaxis*, is readily spread by grader/bulldozer tracks and recreational vehicles, presumably also from seed carried by the vehicles.
- River Track – we propose again that this track be improved (there are several sites that could be made trafficable by building up with sand or gravel) to allow all-year traffic, rather than attempt a seasonal closure – unsupervised closures and absence of fines ensure that signs will always be ignored by 4WD drivers accustomed to doing as they please.
- Iluka's new bore track – we were pleased to see that the Iluka bore track that runs east off the entrance road was not in use, and that will prevent weeds being spread into the heart of this reserve.
- Western-most loop track south off the River Track – this track is a danger to the long-term integrity of the vegetation in these valuable marsh areas. We spent much time spot-spraying infestations of *Sparaxis* along and adjacent to this loop track. If the River Track is open there is no reason for the other track to remain open. We were dismayed to see that recent vehicle tracks were evident along this section, despite the closed road sign. It was also evident that at least part of this activity was associated with inspections of the bores that are present in that area. Vehicles had driven off the track across the vegetation at both bores, whereas they had only a few metres to walk from the track without doing any physical damage or spreading weed seeds. It will be impossible to eradicate weeds if this damage is allowed to continue.
- Off-road recreational vehicles constitute a danger to the reserve, through spreading weed seeds in mud adhering to tyres or seed carried elsewhere on the vehicles, cutting up fragile areas and risking the spread of *Phytophthora*. Signs are needed to remind drivers of their responsibilities.
- Status of the reserve – this reserve needs the status of **Flora & Fauna Reserve**, since 323 native species have now been found on this reserve, with several rare and endangered species

Birds – 63 species were seen, including “new” birds in White-throated Gerygone, Australasian Shoveler, Black-fronted Dotterel, Black-tailed Native Hen, Brown Goshawk, Little Raven, Tawny Frogmouth and White-winged Triller, bringing the total to 110 for this area (see Table 2).

Mammals – Eastern Grey Kangaroo (*Macropus giganteus*), Red-necked Wallaby (*Macropus rufogriseus*) & Black Wallaby (*Wallabia bicolor*) seen. We also saw 3 Platypus (*Ornithorhynchus anatinus*) in the main Fulham Pool, our first sighting here. Echidna (*Tachyglossus aculeatus*) diggings were also evident.

Flora – only one new species was recorded, a single plant of *Carpobrotus modestus* (Inland Pigface) along N-C creek, with the total of native species 325. We found more plants of *Templetonia stenophylla* this year – this is an unusual plant for this region.

Works undertaken in 2008

From 12-14 Sept. 2008 at the Fulham Streamside Reserve, members of Hamilton Field Naturalists Club located and sprayed the noxious and environmental weeds listed below:

- *Moraea flaccida* (One-leaf Cape Tulip)
- *Sparaxis bulbifera* (Harlequin Flower)
- *Gladiolus undulatus* (Wild Gladiolus)
- *Phalaris aquatica* (Toowoomba Canary-grass)
- *Dactylis glomeratum* (Cocksfoot)
- *Holcus lanatus* (Yorkshire Fog-grass)
- *Cirsium vulgare* (Spear Thistle)

The general areas spot-sprayed were:

- **The SW Block** – from entrance at Edgewood Rd, running 1.4 km N along Entrance Tk to the junction with the W track that runs to the old railway bridge, and S along the railway line and creek from 37-09-15.4/141-51-17.5 to the Edgewood Rd. This area was lightly infested with Sparaxis and Cape Tulip on the W edge (the railway area), compared with extensive infestation treated in 2007.
- **The NW Block** – the area N of the track at 1.45 km from the entrance (37-09-13.8/141-51-34.0) W to the river and including all areas W of the Entrance Tk and river as far as the road closure point on the River Tk (37-09-04.2/141-51-46.4). This year we also treated the river frontage at and west from the most southerly river loop (camp areas) to the old railway bridge. We concentrated on the area south from the crossing of the major creek line that runs across to the old bridge. It had considerable infestation of Cape Tulip. (There is an area of floodplain north of that creek that follows the Glenelg River that was not treated).
- **The Central Block** – large area E of the Entrance Tk from Edgewood Rd (37-09-56.4/141-51-23.2) N to the river, thence E beyond the newly closed section of the old River Tk to its junction with the diversion loop at 37-08-54.8/141-52-59.2, with the area S of the River Tk (especially the *Melaleuca neglecta* swamps) being treated for many infestations of Sparaxis, Wild Gladiolus, Cape Tulip and Phalaris. Sparaxis here was much reduced from treatment in 2006, and all plants were very small (possibly new germinants). We were disappointed to find off-track incursions of vehicles, apparently visiting the 2 bores in that area.
- **The Eastern Block** – we checked the area further east along River Track, to the culvert at 37-08-53.4/141-53-10.3, the eastern end of the area we checked in 2006, and about 100 m further E to a small drainage line crossing the track at 37-08-55.6/141-53-14.8. From there we followed the drainage line to the corner post of the reserve, where the East Boundary Track (to Edgewood Rd) turns east, and spot-sprayed Cape Tulip there and on the 3 drainage lines that run down from the track to the N-S creek that runs from Edgewood Rd. The boggy creek (3^d Creek) had several infestations of Sparaxis (near 37-09-05.3/141-53-17.3), with further infestations on the N-S creek and a wet areas further west at 37-09-00/141-53-09. Many large patches of Cape Tulip were also treated throughout the area. We checked the 2nd Drainage line, finding Cape Tulip at the intersection with N-S creek (37-09-17/141-53-15), but not the 1st drainage line (nearest Edgewood Rd), and followed down the N-S creek to the River Track.

A large area of Sparaxis infestation was found in a very wet area some 100 m west and 200 m south of the main culvert at 37-08-53.4/141-53-10.3. We treated the drier, smaller parts but left an area 100 m x 30 m that was too wet and extensive for us to treat. That area needs to be treated with a blanket-spray of Ally and Pulse (not Glyphosate) to control the Sparaxis without affecting tussock and other grasses.

Works

Friday 12 Sept 2008 – RB 8 hr

Saturday 13 Sept 2008 – RB 9 hr; RZ 9 hr, DL 7 hr; YI 7 hr, KG 5.5 hr, JG 5.5 hr

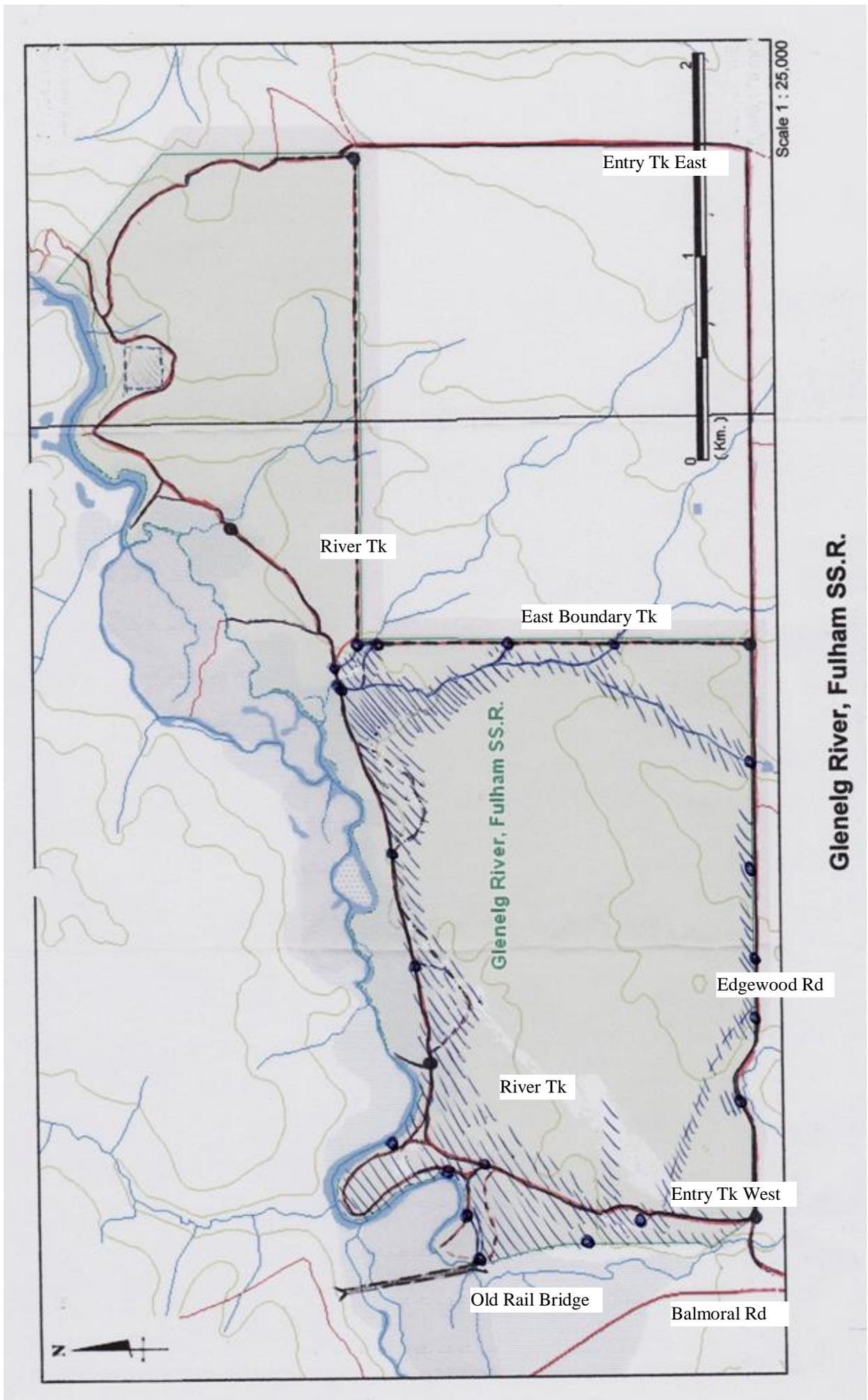
Sunday 14 Sept 2008 – RB 9 hr, RZ 5.5 hr, YI 5 hr, DL 7.5 hr

Total 72 hours

Chemicals

Spray applied, Fri 30 L, Sat 80 L, Sun 40 L = 160 L

Glyphosate 60 mL, Ally 64 g, Pulse 800 mL, colour 640 mL.





HAMILTON FIELD NATURALISTS CLUB

PO Box 591
Hamilton 3300

13 October 2009

Report on Weed Control Work at the Fulham Streamside Reserve in Sept.-Oct. 2009

Summary

- Activities – the HFNC (7 members) spent 82 hours on 11 & 18-20 Sept. and 8 Oct. 2009 treating environmental weeds on floristically-rich parts of the western half of the Fulham Streamside Reserve, south of the River Track to Edgewood Rd. The areas treated are shown on the attached map.
- Application of herbicides — except for a few areas near the River Rd infested with Cocksfoot or Phalaris, where Glyphosate was used to spot-spray individual plants. Sparaxis plants were carefully spot-sprayed with Ally solution (*metsulfuron methyl* with Pulse as a surfactant and a dye marker) to minimise off-target deaths of other lily plants and woody vegetation. Cape Tulip plants were mostly individually treated with Ally using tongs fitted with herbicide pads to deliver a more concentrated herbicide solution to pest plant leaves without contacting other vegetation. The objective of both spot-spraying and herbicide wiping is to allow adjacent native species to re-colonise the small areas treated. Our experience, and observations of work by other operators here, demonstrate that spraying Cape Tulip is not effective in killing all the plants (the spray misses or does not wet the target) and it cause extensive losses of adjacent non-target species. Walking the site and wiping individual plants is the only way to remove all of the Cape Tulip plants and to restore the area to its previous botanic composition and health.
- Sparaxis (Harlequin Flower) – the degree of infestation from *Sparaxis* was further reduced in areas spot-sprayed in 2007 but significant infestations still remain, including along a former part of the Entry Tk where hundreds of small plants were treated. Another source was a 75 m stretch along an old track west of Entry Tk (at 37-09-27.4/141-51-24.7). The major site of infestation found in 2008 (but not treated then) in the salt marsh near the N-S Ck was treated with Ally + Pulse as a blanket spray. Spot-spraying was not possible here, owing to the density of plants in the 70 m x 10 m area. The area along the creek adjacent to the railway line was treated again, with only hundreds of plants seen rather than thousands. This year we also concentrated on Sparaxis along Edgewood Rd, down N-S Ck and into the salt marsh adjacent to River Tk.
- Cape Tulip – this weed was present in appreciable numbers, mostly pre-flowering, often associated with old tracks but also in discrete small spots of a few plants (sometimes several dozen) at random across the landscape. We treated thousands of plants along Edgewood Rd, East Boundary Tk and down N-S Ck and tributaries 1-3 into the salt marsh adjacent to River Tk. Walking is the only way to detect all plants. We were dismayed to see that Cape Tulip had been sprayed by an operator using a vehicle and/or 4-wheel motor cycle in part of the eastern “salt marsh” area that we were treating. Apart from the collateral damage to adjacent plants (killing all vegetation in an area at least 30 cm radius around each Tulip plant) many plants were unaffected by the spray and others nearby had not been treated at all. We had to treat those plants. There is little point HFNC working to protect and restore the area if inappropriate practices continue – over many years those practices have created most of the extensive patches of so-called saline areas in the marsh, where the diversity of native plants has been drastically reduced. This is a part of the reserve that supported a large population of Yam Daisy, *Thelymitra antennifera*, native lilies & other grassland species.
- River Track – while the blockade at each end of this Winter Closure section seems to have reduced illegal usage some vehicles have driven around the blockage and created off-road damage there. Vehicles have also engaged in some destructive “circle work” in the salt marsh area in the eastern part of this block (SE of the eastern loop in the River Tk). While the “Seasonal Road Closure” notes in the information box asks drivers to respect the “road closure” rules, most of the 4WD drivers who indulge in those activities would not bother to take the note or to read it. A more immediate reminder is needed, with signs along the River Tk requesting vehicles to stay on the road:
 - to allow restoration of the degraded sections of the salt marsh
 - to prevent transfer of weeds and disease into the reserve.
- Western-most loop track south off the River Track – this track is a danger to the long-term integrity of these valuable marsh areas and should be closed and the adjacent River Tk in this section needs to be improved.
- Off-road recreational vehicles constitute a constant danger to the reserve, spreading weed seeds in mud in tyre treads or carried elsewhere on the vehicles, crushing vegetation, cutting up fragile areas and risking the spread of Phytophthora. Signs are needed to remind drivers of their responsibilities.
- Camping – camping in the bush W of the Entry Tk at the river is a serious threat to that special area.

Birds – 43 species seen (and Powerful Owls heard), incl. a ‘new’ bird in Blue-winged Parrot (total now 110 species).

Mammals – 3 Echidna (one dead), Hare (3) & rabbit (2, on Edgewood Rd)

Reptiles – Bearded Dragon (1, near Edgewood Rd) & Shingleback (many).

Flora – a new orchid for the reserve, *Caladenia pusilla*, along the River Tk, near the Melaleuca Swamp. The total native flora now 324 species.

Works undertaken in 2009

On 11 September, 18-20 September and 8 October 2009 at the Fulham Streamside Reserve, members of Hamilton Field Naturalists Club located and sprayed the noxious and environmental weeds listed below:

- *Moraea flaccida* (One-leaf Cape Tulip)
- *Sparaxis bulbifera* (Harlequin Flower)
- *Gladiolus undulatus* (Wild Gladiolus)
- *Phalaris aquatica* (Toowoomba Canary-grass)
- *Asparagus asparagoides* (Bridal Creeper)
- *Cirsium vulgare* (Spear Thistle)

The general areas spot-sprayed were:

- **The Edgewood Rd margin** – worked from Entry Sign (0 km) E along the Edgewood Rd, ~ 200 m into the reserve. Treated Sparaxis (Sprx) and Cape Tulip (CT) at the entry, and 50 m E among *C. carnea*. At 0.35 km a host of *P. nutans*. At 0.85 km a hot spot of Sprx on S of rd. At 0.9 km CT & Sprx (~ 30 plants on N side). At 1.8 km a few CT near rd (near a Telstra post) and odd patches up to 200 m N. At 2.2 km a patch of ~ 100 Sprx ~20 m W of creek & 20 m from rd. At 2.4 km a nice patch of Golden Moth orchids. A few Sprx at 2.9 km (cnr of Boundary Tk) and also ~ 50 m W. One patch of Sprx seen later (untreated) on S side of road.
- **The East Boundary Track** - a small patch of CT just W of Tk. at 3.0 km from Entry and at 4.0 km (2nd Ck) on track and on the seepage. At least 50 Morel fungi were seen on S side of 2nd Ck (37-09-18.0/141-53-17.5). Three small spots of CT on track between 2nd Ck & 3^d Ck. At 4.5 km (3^d Ck), several spots of CT near track and W on both sides of the wet area down to N-S Ck.
- **N-S Creek** – there were a few CT from Edgewood Rd (2.2 km) to junction with 1st Ck, especially where a fire trail crossed. Also a few Cootamundra Wattles in the creek (large trees not poisoned). From 1st Ck to 2nd Ck there was a patch of Sprx at 37-09-20.3/141-53-14.4), about 70 m S of 2nd Ck jn. Also many 100s of CT along entire section, especially on W side. From 2nd Ck to 3^d Ck junction there were 100s of CT. From 3^d Ck to River Tk there were also 100s of CT, with many more extending W on the Marsh. A few Sprx were found on W side of N-S Ck (at 37-09-05/141-53-17), a spot treated in 2006 below the jn, but none thereafter along the creek down to the culvert on the River Tk (at 37-08-53.4/141-53-10.3).
- **Along railway line, SW part of block** – this area was lightly infested with Sprx & CT on the W edge (the railway area), compared with extensive infestation treated in 2007. However, several hundred very small Sprx plants were found and treated (10 L spray), some extending out of the drainage line into the heathland.
- **Strip adjacent to track from Entry to river** – both sides from Entry at Edgewood Rd (37-09-04.2/141-51 46.4). Isolated CT and Sprx were treated. A previous hotspot on the W side contained several hundred tiny Sprx, stretching along the old track on both sides of the bulldozed fireline that crosses the Entry track. Some 6 L spray applied - the Sprx eradication will result in the loss of a few heath plants. Attention will be needed again in 2010. A further area of infestation was found on another old track some 70 m W of the Entry Tk. The N edge was at 37-09-27.4/141-51-24.7 and extended 75 m S into acacias. This infestation required 13 L spot-spray.
- **River area from main camp on river downstream to second bend** – this most southerly bend is a camping spot. CT, Bridal Creeper & Phalaris treated in this “peninsula”. The sandy soils support a tree that has affinities with Desert Stringybark (*E. arenacea*). The area contains a good regeneration of Desert Banksia (*B. ornata*) and Silver Banksia (*B. marginata*), along with Redbeak Orchid and other species. There is an unfortunate expansion of camping across the track from the main site that threatens to devalue the flora of this important area and allow weeds to penetrate the reserve. Signs are needed to restrict camping to the strip between the track and the river.
- **Area from south bend downstream to a creek and down that creek to Railway Bridge** – this area is heavily infested with pasture grasses and CT. The area extends across to the track that runs west from Entry Track to the Bridge. CT were treated here. The remaining area between the creek and the river was not assessed or treated.
- **The NW river area from the gate on River Rd downstream to the main camp** – the gate is at 37-09-04.2/141-51-46.4. The treated area includes the area S of the River Tk that contains Nodding Greenhoods, amongst Sprx, that was rutted by off-road vehicles and has received previous treatment. The area was treated again to mop up Sprx and Phalaris plants were also sprayed. Some Sprx remains between the River Tk and the river in this area.
- **The Central Marsh area** – E beyond the winter-closed section of the River Tk (at 37-09-04.2/141-51-46.4) to the junction with the diversion loop at 37-09-05.9/141-51-56.8, then to the E edge of the marsh (37-09-04.8/141-52-04.2), with the *Melaleuca neglecta* marsh being treated for many infestations of Sprx, Wild Gladiolus & CTs. Sprx was reduced from treatment in 2008, and all plants were very small (possibly new germinants).
- **The Eastern Marsh area** – on 8 Oct. we sprayed the large area of Sprx in very wet marsh some 100 m W & 200 m S of the culvert at 37-08-53.4/141-53-10.3. The periphery was spot-sprayed in 2008, reducing the area to be sprayed this year from 100 m x 30 m to about 75 m x 10 m. The area was pegged with red tape markers. A blanket-spray of 30 L of Ally and Pulse spray was applied to eliminate Sprx without affecting tussock and other grasses. The NE corner is at 37-08-57.8/141-53-06.3. Many hundreds of CT were wiped across the entire marsh. As stated in the Summary, we were disappointed to see our efforts to restore this important marsh compromised by another agent operating in the same area and using inappropriate methods (see attached photos of the area). Odd small spots of Sprx were found across the marsh (e.g. 37-08-58.6/141-52-58.8). Larger areas were located at near the River Tk at 37-08-54/141-53-03 (partly treated) and at 37-09-05.9/141-52-58.2 (near S end of the marsh).

Works

Friday 11 Sept. – RB & DL each 6 hr; Friday 18 Sept. – RB & DL each 6.6 hr; Thursday 8 Oct – RB 10 hr
Saturday 19 Sept. – RB 5.2 hr, DL 4.5 hr; JC, GC, RZ & YI each 4 hr, HT 3 hr
Sunday 20 Sept. – RB 5.3 hr, DL 3.5 hr, JC & GC each 2 hr, RZ & YI each 3 hr



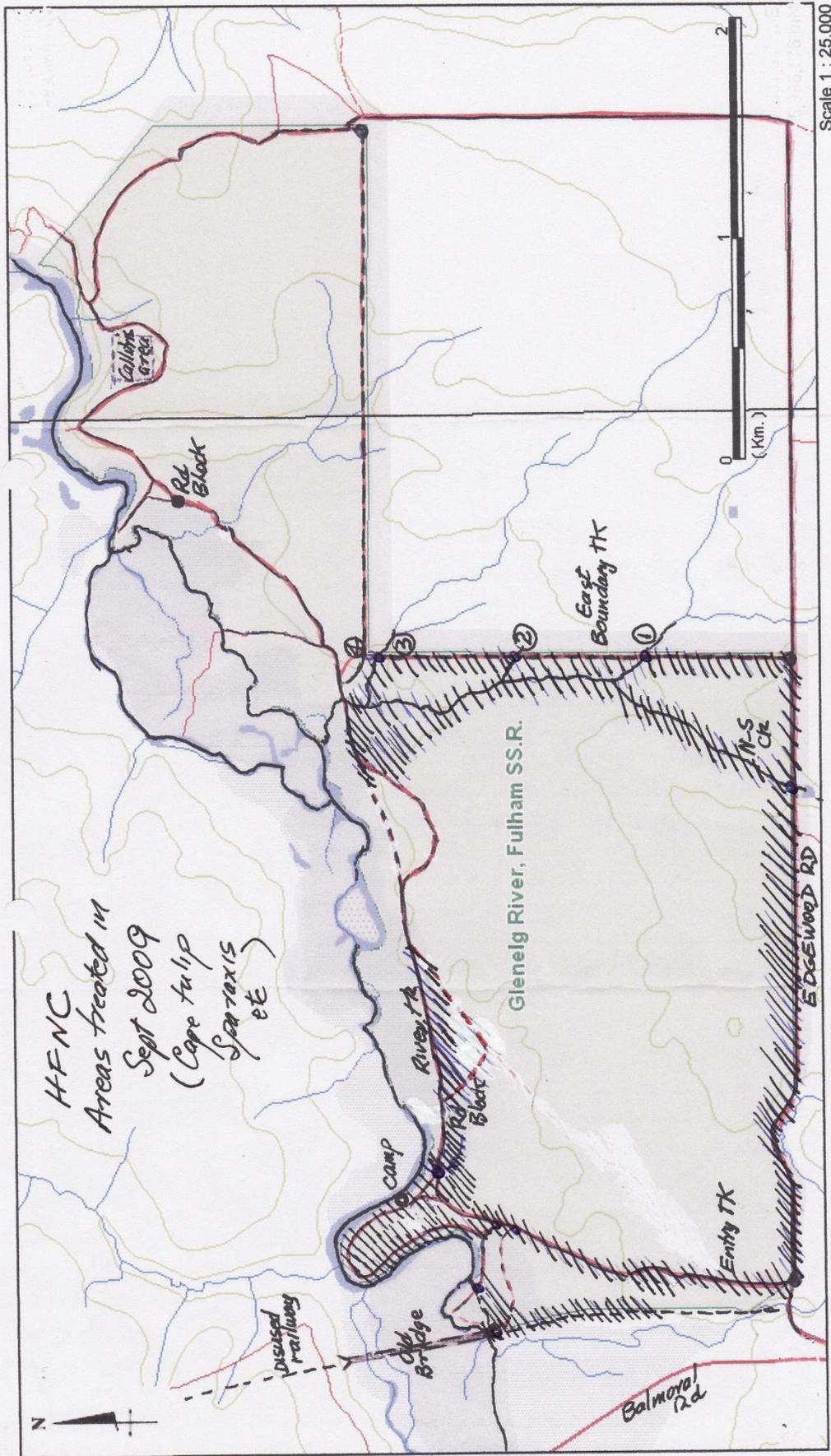
Fulham Oct 2009, eastern Melaleuca Swamp in the western block, near the River Tk – area sprayed by an unknown operator from a 4-wheel bike. Note area of vegetation affected this year and in past years



Fulham Oct 2009, eastern Melaleuca Swamp in the western block, 200 m south of the River Tk – area sprayed by an unknown operator from a 4-wheel bike. Note area of vegetation affected this year (purple) and in past years (the area devoid of mcuh vegetation)



Fulham Oct 2009, eastern Melaleuca Swamp in the western block, 200 m south of the River Tk – area sprayed by an unknown operator from a 4-wheel bike. Note the collateral damage to vegetation (purple) in spraying the Cape Tulip plants. This approach should not be used.



Gleneig River, Fulham SS.R.



HAMILTON FIELD NATURALISTS CLUB

PO Box 591
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22 October 2010

Report on Weed Control Work at the Fulham Streamside Reserve in Sept.-Oct. 2010

SUMMARY

Activities – between 17 September to 20 October the HFNC spent 66 hours treating Cape Tulip (CT), *Sparaxis bulbifera* (SB) and some other environmental weeds on the floristically-rich part of the western half of the Fulham Streamside Reserve. We worked along the Entry Track to the river (from about 100 m to the east of Entry Track west to the railway line). We treated the western area (shown on the attached map), except for two areas:

- (1) the mid- and southern part of the degraded area between the river and the second major watercourse that runs from the river to the old railway bridge crossing
- (2) the strip between the western boundary and the railway embankment.

We also treated CT on a strip along East Boundary Track to Boggy Creek, near the corner of the western block, and the southern side of Boggy Creek down to N-S creek.

This year we adopted a different approach. After an initial foray in mid-September to treat the sensitive sites on the western end of the reserve we returned to the same sites 3 weeks later to “mop up” any SB and CT missed, those that had germinated since, or those that had been lying in water. That approach was vindicated upon inspection on our October visits when, despite great care being taken in September, it was apparent that many plants had been missed. A flower also reveals patches of the weed in more remote areas not visited before. That was particularly useful for detecting isolated outbreaks of SB.

We observed that contractors had also failed to treat almost as many CT as they had sprayed on the area towards the old railway bridge – and that many of the plants in their sprayed spots were alive and in flower. We re-treated most of the plants on either side of the track between the first and second watercourse but had no time to go further south in that area where the ineffectiveness of the spraying practice is still obvious. Spraying does not eliminate CT and it creates a huge amount of bare ground.

We recommend that the herbicide-wiping method be used in future for CT control, at least for sparse infestations. That ensures that each plant is killed, it minimises ancillary damage to other vegetation, and it gives some hope that CT can be eliminated and the area restored to its previous botanic composition. The tool that we adapted (by fitting small pads to the rubber cups) is a “Pick up – Reaching Tool” obtained from *The Reject Shop* (imported by TRS Trading Group, 245 Racecourse Rd, Kensington, Vic 3031). The tool has a pistol grip and is cheap (\$3), lightweight, easy to use and very effective since both sides of the leaf are contacted. Contractors and volunteers could use this tool (see photo). The aim of spot-spraying and herbicide-wiping is to allow adjacent native species to re-colonise the small areas treated.

Application of herbicides – *Sparaxis* plants in the dense areas of infestation were spot-sprayed with a solution of *Metsulfuron methyl* (3 g/10 L), *Glyphosate* (150 mL/10 L), Pulse surfactant (50 mL/10 L) and a red vegetable dye marker (40 mL/10 L). In all other cases SB and CT plants were individually wiped with a more concentrated herbicide solution (*Metsulfuron methyl*, 1 g/L, *Glyphosate* 5 mL/L and surfactant 5 mL/L, dye 5 mL/L).

Harlequin Flower (*Sparaxis bulbifera*) SB – The aim is to eventually eradicate SB from the floristically important area south of the River Track and in the far western part of the reserve. To achieve that we need to prevent any SB from seeding and there must be a defensible “boundary” to work from. Fortunately, SB does not appear to spread long distances from wind-born seed, thus a road or water channel may constitute a boundary. The plants appear to spread slowly from near the parent plant and from seed or corms spread by soil-moving machinery and in the tyres of other vehicles. Thus there is a need to check for new SB appearing along the tracks. There is also an urgent need to close any unwanted tracks and to discourage off-track driving. Without that, efforts to eradicate SB may be a waste of time.

The presence of flowers on some SB plants in our October visit was very useful in locating minor sources of infestation. We plucked off the flowers before wiping the plants with herbicide. That practice was intended to minimise any seed-set and, hopefully, increase the take-up of herbicide by the corm. The degree of infestation from SB was much reduced in areas treated in 2009 but significant infestations remain, from germination of seed held in the soil over many years. This year other major sites of infestation were found in the area west of Entry Track, mostly associated with old tracks.

Cape Tulip (*Moraea flaccida*) CT – this weed was present in appreciable numbers, mostly pre-flowering, often associated with old tracks but also in discrete small spots of a few plants (sometimes several dozen) at random across the landscape. We treated tens of thousands of CT this year and the lethal effect of the herbicide-wiping method was seen on our visit 3 weeks later. We saw, also, how easy it is to miss some CT, especially those very small. We generally removed any flowers and heads on the larger plants to prevent seed from developing and being released. CT appears to flower only when several years old, dying back to the basal corm each year. CT seeds prolifically and “spots” across the reserve, with a cluster of new seedlings developing there over time. CT is also found along the

tracks, no doubt spread by vehicles, the ultimate source of the outbreaks in the southern parts of the reserve. We are hopeful that, with increased vigilance in detection of CT and better control of off-track vehicles, the pest can be reduced to very low levels. However, there will always be a need for monitoring and treatment of CT across the reserve.

Other weeds – Bridal Creeper (*Asparagus asparagoides*), Wild Gladiolus, Cocksfoot, Phalaris, Thistle. These were treated with Glyphosate when encountered, the Bridal Creeper being seen only in the NW promontory. One large bush of African Boxthorn (*Lycium ferocissimum*) was found near the Entry Track and one Sweet Briar (*Rosa rubiginosa*) off the E-W Bridge Track.

African Weed Orchid (*Disa bracteata*)(AWO) was seen on the SW boundary area, on the western side of the Railway Embankment and on the eastern side of the embankment. The area of private land adjoining has CT, SB and AWO, therefore there may be little point in trying to rid the strip of reserve between the boundary and railway embankment of these weeds until the neighbours take action on their land. Hopefully, the embankment will be a buffer.

Birds – 60 species seen or heard (Southern Boobook), including 5 ‘new’ birds in Little Black Cormorant, Crested Pigeon, Spiny-cheeked Honeyeater, Red-tailed Black-cockatoo (4 seen in Brown Stringybarks) and Little Eagle (total now 115 species).

Mammals – 2 Hares, 20 Grey Kangaroos, 1 Red-necked Wallaby and 1 Black Wallaby were seen in the SW section. A Platypus was seen in the river and there were many Echidna diggings.

Flora – a prolific flowering of *Thelymitra rubra* was noted west of Entry Track, along with *Pterostylis nutans* in the treated area near the river (total native flora remains at 324 species).

Other matters – whilst working on the damp heathland west of Entry Track a party of about 30 horses and their riders rode across the heathland from the direction of the SW corner. Since the soil was quite damp, boggy in places, it seemed a most inappropriate action. I suggested that they ought to consider keeping to the recognized tracks, to avoid spreading weeds, pugging the soils and trampling the vegetation. The party did move on to the Entry Track. Continued contamination of this reserve by off-track vehicles and horses will render much of any work on weed eradication of little long-term value. Some signage is needed to advise drivers/riders to keep to the designated tracks, in order to prevent spreading of weeds, disease and destruction of the native vegetation.

DETAIL OF WORKS UNDERTAKEN IN 2010

Areas treated

(1) The East Boundary Track (EBT) north off Edgewood Rd on the Western Block

A few CT were treated 100 m from Edgewood Rd and a few along the track to the 3^d Creek (Boggy Creek) at 37-09-19/141-53-19, near the corner of the western block. There were ~300 plants from near EBT and west of the wet area down to N-S Ck.

(2) Strip adjacent to track from Entry to Glenelg River (Fulham Pool)

Both sides from Entry at Edgewood Rd (37-09-56.4/141-51 23.2) were inspected, up to 150 m both sides of the track. Isolated CT and many small patches of a few dozen CT were treated by herbicide wiping. The SB at the entrance and west along the Edgewood Rd towards the creek were similarly treated.

(3) Old track to the west that is adjacent to Entry Track, about 0.9 km from Edgewood Rd

A previous line on the west side contained several hundred tiny SB, stretching for some 200 m along two old tracks that were crossed in 2005 by the E-W bulldozed fire line over Entry track, 0.9 km from Edgewood Rd (37-09-25.7/141-51-27.9). The N edge was at 37-09-29.7/141-51-24.6, just south of the clump of *A. paradoxa*. Extensive spot-spraying was needed in 2009, because of the density of SB, but the resulting damage to non-target species was not severe. We herbicide-wiped at least a thousand small SB in September this year and followed up in October with a further 350 plants too small to be seen in September. There were also about 20 SB in flower in spots away from the main line of infestation – the flowers were removed and the plants, and any adjacent, treated. These SB would not have been detected had there been no flowers.

(4) The NW river area from the gate on River Rd downstream to the main camp

The gate is at 37-09-04.2/141-51-46.4. The treated area includes the area south of the River Tk that contains Nodding Greenhoods, amongst SB, that was rutted by off-road vehicles and has received previous treatment. The area was treated again to mop up SB, many dozens of plants being treated. The treated area now contain many Greenhoods.

(5) River area from main camp on river downstream to second bend camp area – this is the most southerly bend. Bridal Creeper was treated in the “peninsula”, several plants being found. CT was found on both sides of the track approaching the camp area at the second bend. Prolific Wild Gladiolus and a few SB were found at the bend.

(6) From second bend camp to second watercourse crossing downstream – we concentrated on the area between the river, the first watercourse and the E-W Track to the old railway bridge crossing. Few SB were seen in the northern half (one spot near the creek) but there was a moderate infestation of CT throughout the area. We also herbicide-wiped many live CT on both side of the track leading from the first watercourse to the second (and major) watercourse crossing.

Contractors had apparently sprayed some CT there (and on the east side of the first watercourse) but with poor success, as many were still green and in flower. We had no time to treat the remainder of this area between the two watercourses. While most of it has been degraded by past spraying, now carrying mostly exotic grasses, it remains a potent source of CT infection for the heathland to the south. We would hope to treat the area in 2011.

(7) From junction of E-W Track and Entry Track (37-09-13.8/141-51-34.0, 1.45 km from Edgewood Rd) the area adjacent on both sides west to the old Railway Bridge crossing – CT was distributed in large numbers randomly throughout the area but the major sites of SB infestation were found in the areas listed below:

- a) North side of the E-W Bridge Track, wet area about half way to the cleared “parking place” (37-09-15.4/141-51-17.5) that lies about 100 m east of the embankment. Of the 10 patches of SB sprayed in October the most westerly patch is at 37-09-15/141-51-22. The patches vary in area from 2 to 50 m². These patches were very heavily infested with SB and only outlier plants could be herbicide-wiped. The aim is to eliminate SB from this site, to prevent it invading the pristine damp heathland to the south and west. Some short-medium term loss of other vegetation will result but the alternative (do nothing) will see the entire area dominated by SB with loss of most of the native ground flora. Remnant SB will be herbicide-wiped in future years, allowing the native flora to re-colonise the sites.
- b) South side of the E-W Bridge Track, opposite the western end of (a), beginning near the track-side post in the boggy section (27-09-15.1/141-51-24.9). The partly flooded areas here were spot-sprayed in September (where not flooded) or in October. There are about a dozen patches of serious infestation (from 2 m² to 20 m²) in this area of about 100 m x 100 m. These were treated as in (a).
- c) North of (a) by about 100 m, near a large River Red Gum (RRG) – a patch 4 m x 3 m (37-09-15.1/141-51-24.9).
- d) South of (a) by about 100 m, around the base of a large RRG – a patch 4 m x 2 m (37-09-18.5/141-51-26.3). This appears to be the only isolated infestation not associated with an old track (or current track) or not in a wet area. Its presence was revealed by white flowers on several plants.

(8) Central area west of the entry Track and south of the track to the Bridge

- e) South of (b) by about 200 m, with RRG and a dead Buloke around the small patch on an old track (37-09-21.1/141-51-23.3).
- f) SW central area on an old track about 100 m south of a large log and stump (37-09-24.2/141-51-23.1) – a patch of about 4 m².
- g) A small patch 40 m due west of (f) on an old track, about 70 m south of the large log and stump.
- h) Same area, south of the bend on E-W Bridge Track (37-09-16.7/141-51-24.6) – several small areas of heavy infestation of SB. These were either herbicide-wiped or spot-sprayed. CT also adjacent.

(9) East of the watercourse that is adjacent to the railway embankment

- i) On an old track near the watercourse that runs close to the railway line – this site (37-09-19.5/141-51-17.5) contained a few dozen SB and many CT nearby, all of which were herbicide-wiped.
- j) Near the largest River Red Gum in the area near (i) – this site (5 m x 3m) required spraying, because of the density of SB. CT also occurred nearby in numbers.
- k) 70 m south of area (j) at 37-09-17.4/141-51-21.2 – a small area (3 m x 2 m) of dense SB that required spraying. CT also nearby.

(10) Watercourse adjacent to the east side of the railway embankment

The area in the watercourse (on the margins of the pools) was lightly infested with SB and moderately infested with CT. Several dozen very small SB were found on the west side of the drainage line adjacent to the *Melaleuca decussata* that lines the drainage line. A few SB (and many CT) were found on the heathland margin at the top end of the pool, in the same spot as in previous years (37-09-26.0/141-51-18).

(11) Area between the railway embankment and the adjoining freehold, SW end

Parts are heavily infested with CT and SB (particularly dense under *A. paradoxa*). The CT were treated but SB was so dense as to require spraying, which time did not permit. The SB on section of about 250 m above the Bridge is heavily infested with SB and this has not been treated this year or previously. That situation should be reviewed, since it is a potent potential source of reinfection of the block across the embankment to the east. Action may, however, result in the loss of some of the Melaleuca. About 10 AWO plants were also found and pulled. Unless action is taken on the freehold land then re-infestation is certain. If no action is forthcoming there then it may be pointless trying to control these weeds on this strip.

Works

Friday 17 Sept. – RB & DL each 4 hr;
Saturday 18 Sept. – RB 8 hr, DL 7 hr
Sunday 20 Sept. – RB 4 hr, DL 3 hr, DM & LM each 1.5 hr
Monday 11 Oct. – RB & DL each 7.5 hr
Tuesday 19 Oct – RB 8.5 hr
Wednesday 20 Oct – RB 9.5 hr
Total = 66 hrs



Herbicide-wiping tool

The tool that we adapted (by stitching small pads cut from kitchen sponges to the rubber cups, using wool yarn) is a “**Pick up – Reaching Tool**” obtained from *The Reject Shop* (imported by TRS Trading Group, 245 Racecourse Rd, Kensington, Vic 3031).

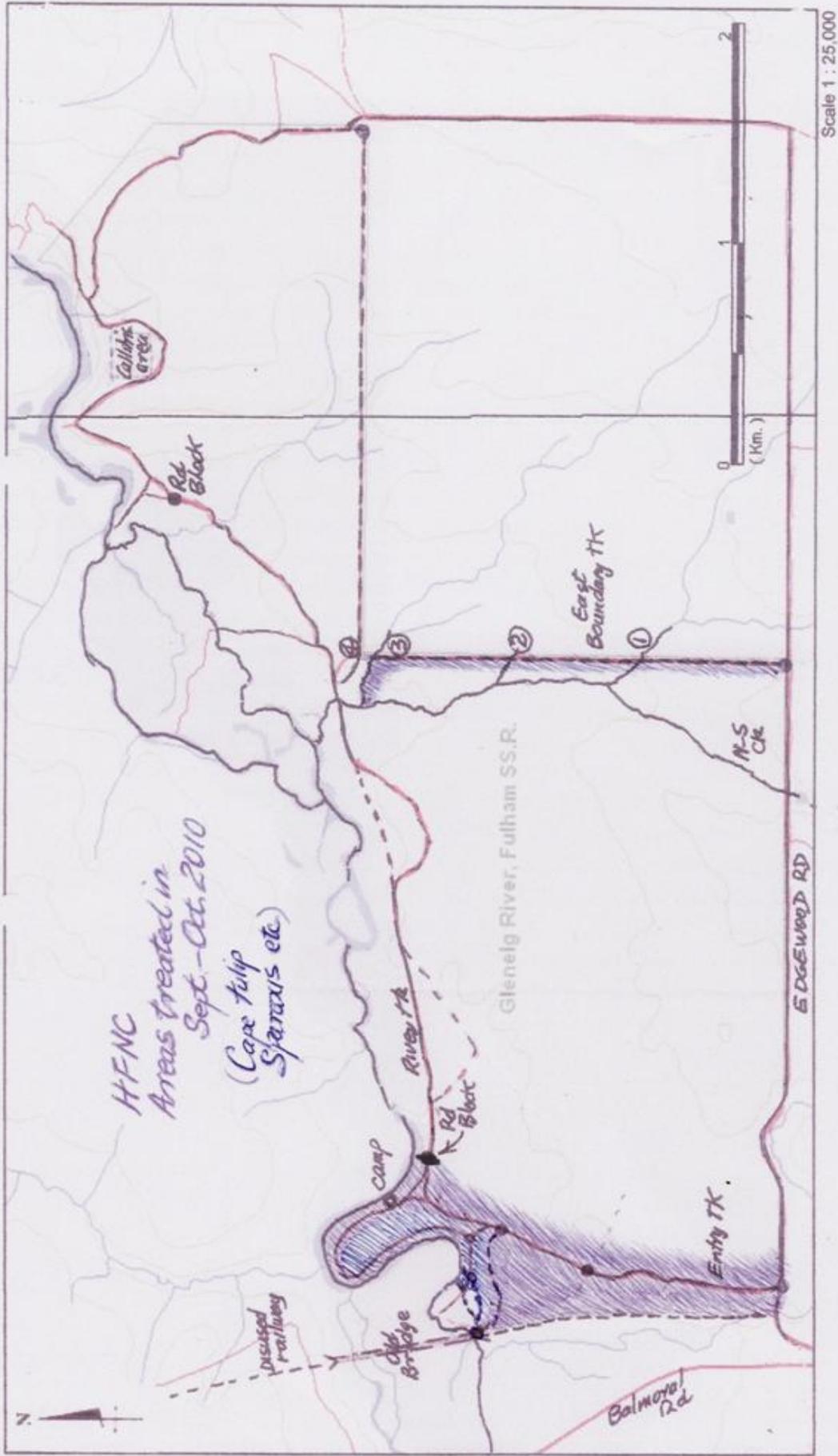
The tool has a pistol grip and trigger to operate the jaws. It is cheap (\$3), lightweight, strong, easy to use and very effective since both sides of the leaf or stem are contacted. No bending is required and many thousand plants can be treated quickly without strain to the back or hands.

The pads are dipped into a container that holds the herbicide-wetter-dye mixture. We use plastic containers that originally held produce (honey or rice), obtained from supermarkets. The opening of the container need not be great but must allow the pads to be inserted (use the trigger to press the pads together to allow this, then releasing the trigger to allow the springs to enter). We attach the lid to the container by a cord so that it can be closed for transport.

Sparaxis and Cape Tulip plants are individually wiped with a concentrated herbicide solution (*Metsulfuron methyl*, 1g/ L, *Glyphosate* 5 mL/L, surfactant 5 mL/L, dye 5 mL/L) using this tool to deliver herbicide to the pest plant without contacting other vegetation. Glyphosate may be left out if the situation is such that the chemical cannot be used (no Chemical Users Permit is needed for *Metsulfuron Methyl*) or there are certain species (e.g. most native grasses) that would be affected. There is some concern that Glyphosate may kill the tops of the Cape Tulip before the tubers are affected, particularly when flowering has occurred, therefore it may be best to omit this component from the spray mix.

Fresh solutions of *Metsulfuron Methyl* must be prepared each day. Note that this chemical will affect most woody plants and also plants with bulbs/corms (e.g. native lilies and orchids) but appears to be relatively safe for grasses.

The objective of herbicide-wiping is to kill all of the pest plants without killing adjacent native species. Broad-scale spraying of Cape Tulip cannot do that. Nor does it always kill all of the Cape Tulip plants in the spray area because these plants are difficult to hit with spray and the stem/leaf surface does not wet easily. However, all of the native species are killed, thus creating a vast amount of bare ground that grows only Cape Tulip and other weeds in the following year.



Glenelg River, Fulham SS.R.

HAMILTON FIELD NATURALISTS CLUB



PO Box 591
Hamilton, Victoria 3300

22 October 2011

Report on Weed Control Work at the Fulham Streamside Reserve in Sept.-Oct. 2011

SUMMARY

Activities – 10, 14, 21, 23-25 September and 19 October members of HFNC spent 111 hours treating Cape Tulip (CT), *Sparaxis bulbifera* (SB), Bridal Creeper (BC), Wild Gladiolus (WG) and some other environmental weeds (Phalaris, Briar Rose, Cocksfoot, Thistle & African Weed Orchid), on the western part of the floristically-rich part of the western block of the Fulham Streamside Reserve. [PV had sprayed patches of CT in the eastern part of this western block].

The general area worked is shown on the attached map. The defined areas were as follows:

1. **Along the Entry Track to the river**, particularly the former hotspot of SB midway along the track on the western side.
2. **On the east side of the entry track near the river** – a former hotspot of SB & WG along off-road vehicle tracks through the *Pterostylis nutans* site.
3. **The “peninsula”** where BC is a threat.
4. **West to the railway line and old bridge from the Second Creek** (downstream from the bend) on the river – this area is badly infested with pasture grass and isolated CT. The Cocksfoot and Phalaris hotspots near the bridge were treated with Glyphosate.
5. **The western boundary strip outside the channel** running south along the railway embankment – CT has badly affected the northern half as a consequence of massive infestation from the adjacent freehold land. Part of this first section was treated but more work needed next year. CT, SB and AWO (3 plants) were treated on the southern half.
6. **The western boundary channel** running south adjacent to the railway embankment to about mid-way – the southerly half of this section was densely infested with SB and was sprayed (it had not been treated in previous years); CT also treated on this strip. The south end (from Red Gums on the embankment), and a small site in trees on the fence, was treated on 19 October, to complete work begun in September.
7. **Area between the Entry Tk and the Railway Embankment** – SB & CT were treated in this area. Odd plants of SB continue in the channel that was once heavily infested. CT is still a major problem and the source appears to be untreated adjacent freehold land to the west.
8. **From the Seasonal Road Closure on River Tk, north to the river**, extending ~ 300 m east – clumps of Phalaris and Cocksfoot were sprayed, to prevent future movement of seed across the track to the heathland. CT and SB also treated on the river-side margin of this track.
9. **River Tk east to the eastern side of the first major watercourse (Melaleuca swamp)** – this area has been badly infested with SB & CT. A big effort was made this year to treat all plants in and around the *Melaleuca neglecta* ground. Weeds near the former off-road tracks through the swamp and around to the south were treated. (These old tracks are eroding and are a major source of re-infestation of SB). The area west from this point to the Entry Tk was also checked for CT.
10. **The old “diagonal track” from the top of the Melaleuca Swamp to the entrance** of the reserve – this track was severely infested along most of its length with (mostly) very small SB (many were in flower) and 5 hotspots of CT, mostly on and near the track. These were all sprayed with Ally on 19 October.

Application of herbicides – Sparaxis in the dense areas of infestation were spot-sprayed with *Metsulfuron methyl* (3 g/10 L), surfactant (50 mL/10 L) and a red vegetable dye (40 mL/10 L). *Glyphosate* (150 mL/10 L) replaced Ally when grass species were treated. In all other cases SB and CT plants were wiped with a concentrated herbicide solution (*Metsulfuron methyl*, 1 g/L, surfactant 5 mL/L, dye 5 mL/L) using a tool (previously described).

Birds – 65 species seen, with a ‘new’ bird (Straw-necked Ibis) – total now 118 species (see Table).

Mammals – Grey Kangaroos, Red-necked Wallaby, Black Wallaby and one Red Fox were seen. A Platypus was seen in the river and a Sugar Glider was seen in a Black Wattle near the river on 23 Sep.

Flora – *Pterostylis nutans* was conspicuous in the treated area near the river and Sun-orchids, Spider orchids, *Glossodia* and others were prominent. Common Spider-orchid (*Caladenia patersonii*) was discovered near the N end (west side) of the entry Tk. Another ‘new’ species, a single plant of Kangaroo Apple (*Solanum laciniatum*), was seen towards the old bridge. ACB recorded *S. simile* but this plant had divided leaves. The indigenous native flora list now comprises 330 species.

DETAIL OF WORKS UNDERTAKEN IN 2011

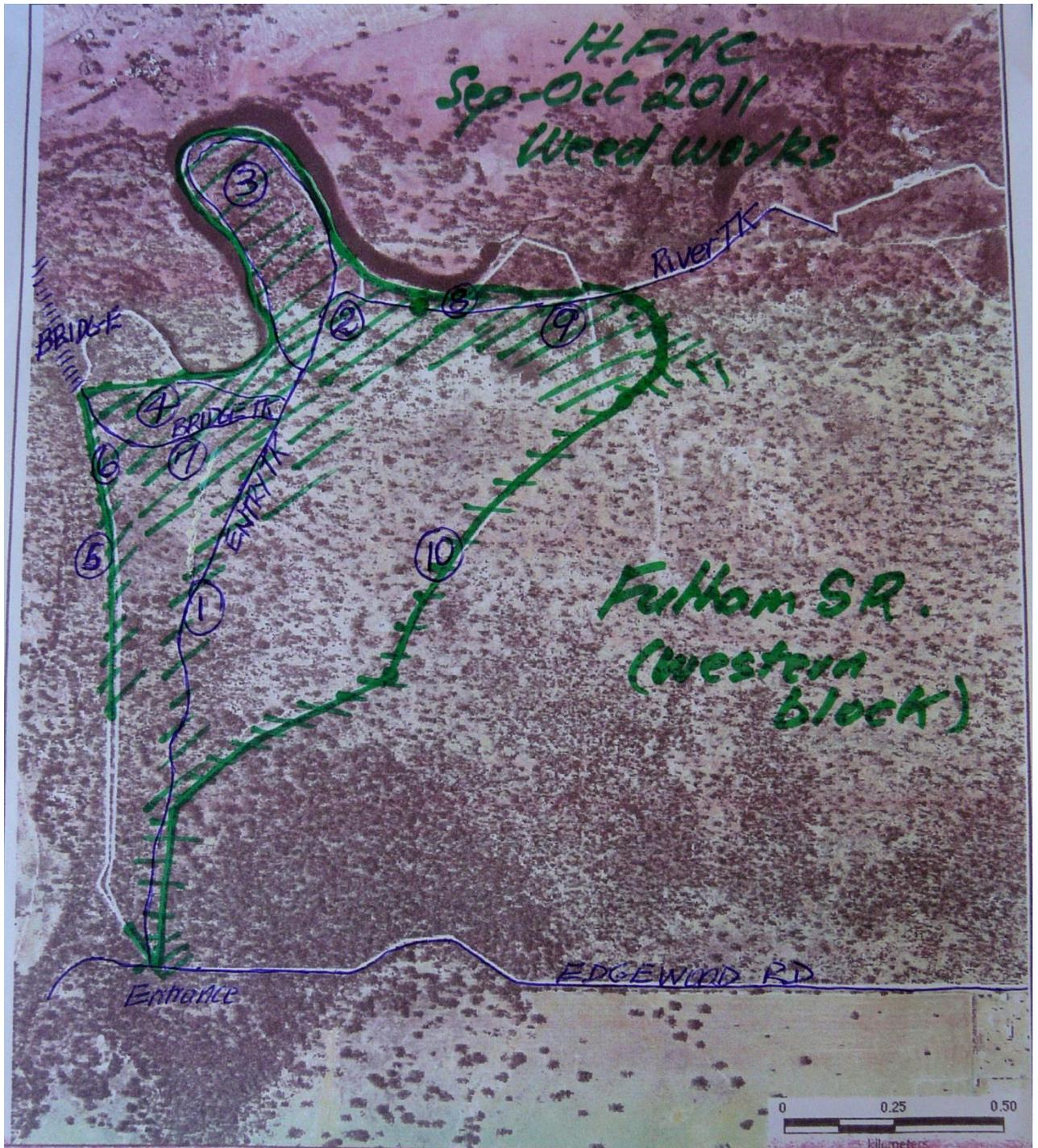
Areas treated

1. **Along the Entry Track to the river** – About 12 SB plants found at entrance. Only ~ 50 small plants found on the former hotspot midway along the track on the western side. A few CT found along the way.
2. **On the east side of the entry track near the river** – a former hotspot of SB & WG along off-road vehicle tracks through the *Pterostylis* orchid site. A few dozen SB still present and treated but the orchid colony is expanding now.
3. **The “peninsula”** – BC still present and treated. Some CT & SB occur along the river, especially near the most southerly bend (camp site). Some isolated CT also in central area.
4. **West to the railway line and old bridge from the Second Creek (the major creek downstream from the bend) on the river.** This area is badly infested with pasture grass and hundreds of isolated CT were wiped with Ally herbicide. The Cocksfoot and Phalaris hotspots (and many thistles) near the bridge were treated with Glyphosate (25 L spray mix). The infestation of SB adjacent to Bridge Tk sprayed last year had about 100 plants requiring attention.
5. **The western boundary strip outside the channel running south along the railway embankment** – CT has badly affected the northern half as a consequence of massive infestation from the adjacent freehold land. The first 150 m of this first section was sprayed with Ally (5 L) but more work needed next year for that and the extension south. CT, SB and AWO (3 plants) were treated on the southern half. One hot-spot of SB was found and sprayed on the fenceline about mid-way, approx. opposite a group of 3 Red Gums on the embankment.
6. **The western boundary channel running south adjacent to the railway embankment to about mid-way.** This section was heavily infested with many thousands of SB (in some places a carpet) and was sprayed with Ally mix; CT was also treated on this strip. About 15 L of spray was applied in the channel area (14 Sep), 12 L near the fence and in the channel (23 Sep) and 9 L in the channel at the south end of the infestation (19 Oct).
7. **Area between the Entry Tk and the Railway Embankment** – Odd plants of SB continue to be found in the channel, and a more extensive infestation on the west side of the channel towards the bridge. The latter was sprayed (2 L) rather than being wiped. CT is still a major problem in the central area south of the Bridge Tk and east of the channel and the source appears to be untreated adjacent freehold land to the west.
8. **From the Seasonal Road Closure on River Tk, north to the river, extending ~ 300 m east** – clumps of Phalaris and Cocksfoot were sprayed (10 L), to prevent future movement of seed across the track to the heathland. CT and SB were also treated on the river-side margin of this track.
9. **River Tk east to the eastern side of the first major watercourse/Melaleuca swamp** – this area has been badly infested with SB & CT. A significant effort was expended this year to treat all plants in and around the *Melaleuca neglecta* ground. Weeds near the former off-road tracks through the swamp and around to the south (including bulldozed trails) were also treated. Most plants were wiped but severe infestations were sprayed (5 L). The area west from this point to the Entry Tk (in line with the southerly bend in the river) was also checked for CT.
10. **The old “diagonal track” running from the top of the Melaleuca Swamp to near the entrance of the reserve** – this track was severely infested along much of its length with small SB and 5 dense hotspots of CT, mostly on and near the track. These were sprayed on 19 Oct. (10 L).

Works

- Sat 10 Sep., 10.30 am-12.30 pm – 13 present (RB&DL, RZ&YI, JC&GC, RA&JS, DM&LM, JH, JS, HT) = 22 hr
- Wed 14 Sep. – RB, 9.30 am-6.15 pm (7.5 hr)
- Wed 21 Sep. – RB, 9.0 am- 5.30pm (8 hr)
- Fri 23 Sep. – RB, 10.30 am-7.0 pm (8 hr)
- Sat 24 Sep. 1 pm- 4.30 pm – 9 present (RB&DL, RZ&YI, JC&GC, DM&LM, HT) = 32 hr
- Sun 25 Sep. – 7 present: from 10 am, RB (7 hr), DL (6 hr), RZ&YI (each 4 hr), JC&GC (each 2 hr), MM (2 hr) = 27 hr
- Wed 19 Oct. – RB, 9.15 am- 3.30 pm (6 hr)

Total = 111 hrs





HAMILTON FIELD NATURALISTS CLUB

PO Box 591
Hamilton, Victoria 3300

30 October 2012

Report on Weed Control Work at the Fulham Streamside Reserve in Sept.-Oct. 2012

SUMMARY

Activities – 08, 19, 22-23 Sept. and 19, 20, & 23 October members of HFNC spent 100 hours treating Cape Tulip (CT), *Sparaxis bulbifera* (SB), Bridal Creeper (BC), Wild Gladiolus (WG) and some other environmental weeds (Phalaris, Briar Rose, Thistle & African Weed Orchid), on the western part of the floristically-rich part of the western half of the Fulham Streamside Reserve. We estimate that tens of thousands of CT plants were found and treated again this year by walking the entire project area. CT remains a problem and it is evident that continued efforts are needed to control the pest. Since individual plants are easily missed, and seed from previous years lies in the ground, eradication will be difficult. We believe that herbicide-wiping is the only acceptable control method of CT control here since spraying would further degrade the heathland. The patches sprayed more than 7 years ago have not recovered the diversity or density of plants that exist in adjacent areas.

We were encouraged by our success in drastically reducing the population of SB, with only hundreds now found, compared with tens of thousands in 2006 when we began this project. The orchids in the previously affected area among the trees some 60 m from the seasonal closure post on the River Tk have responded to the removal of SB and the population has expanded about 4-fold.

WORKS

The area worked is shown on the attached map.

Defined areas of work

11. **Along the Entry Track to the river**, particularly the former hotspot of SB midway along the track on the western side. Only 20-30 SB plants were found. CT were herbicide-wiped on both sides of the track.
12. **Area between the Entry Tk and the Railway Embankment and north to the Old Bridge Tk** – many thousands of CT & a few SB were herbicide-wiped in this area, with the greatest density near the embankment channel and The Old Bridge Tk. Odd plants of SB continue in the channel that was once heavily infested.
13. **Between the Old Bridge Tk and the river at the Second Creek (downstream from the river bend) to the Old Bridge** – much of the creek area is infested with pasture grass and isolated CT. Phalaris, Thistle and Briar found towards the old bridge were spot-sprayed with Glyphosate - this area will become a good buffer from CT & SB spread to the south and east. Fewer weeds were found this year than last year.
14. **The western boundary strip outside the channel along the railway embankment to the Old Bridge** – the massive infestation of many thousands of CT on the 200 m nearest the bridge was sprayed with Ally solution on 20 Oct (27 L of spray). Oddly, about 30% of the CT (in patches) appeared to have been already sprayed, with the top 1/3 of the plant looking dead. More work is needed next year when herbicide-wiping may be practicable. Adjacent private land appears to also have been treated for CT, the first time for many years. That should reduce the re-infestation along the reserve. We had approached DPI earlier to see if the landholder could be persuaded to control the pest plant. CT further south along the fenceline were herbicide-wiped.
15. **The western boundary channel** – this section was badly infested with SB last year when treated then. A few small patches were found and treated this year, along with CT.
16. **The “peninsula”** – BC was spot-sprayed and CT and SB were herbicide-wiped. There were dozens of BC plants and CT to treat.
17. **East side of the entry track near the river and River Tk** – a former hotspot of SB & WG along off-road vehicle tracks through the *Pterostylis nutans* site. We herbicide-wiped a few dozen CT and SB and hundreds of WG among the orchids. Phalaris plants nearer the river were spot-sprayed with Glyphosate to prevent it from invading the orchids. Recent damage from hoon vehicles was apparent, luckily missing the best orchid areas. As well as Nodding Greenhoods, Pink Fingers and Leopard Orchid, one small patch of more than 100 Greencomb Spider Orchids (*Caladenia tentaculata*) was found on 23 Oct. (Photo 1), with some CT in the patch. Broadscale-spray practice would have obliterated these orchids. This spectacular area for orchids needs better protection, perhaps with bollards along the River Track from the track closure point to the Entry Tk at the point where another track goes west to the river. This area has become more popular in recent years, with

horses tied up in the trees and vehicles driving off road, some intent on churning up the ground (Photo 2). This also occurred at other places.

18. **From the Seasonal Road Closure on River Tk, north to the river, extending ~ 300 m east** – following works last year, remaining clumps of Phalaris and Cocksfoot (and new thistles) were spot-sprayed, to prevent future movement of seed across to the heathland. CT and SB were also treated on the river-side margin of this track.
19. **River Tk east to the eastern side of the first major swampy watercourse, south to the old Diagonal Tk and back to the Entry Tk** – the swamp area has been badly infested with SB & CT. A big effort was made again this year to treat all CT in and around this *Melaleuca neglecta* ground. A few SB were found along the eastern margin and many hundreds adjacent to the River Tk, but far fewer than in past years. A spot-spray with Ally was used on SB in parts of the area near the River Tk. Between our first visits this September, hoons had driven vehicles into the swamp creating quite a mess. Another had driven from the River Tk blockade across the reserve to the SE, knocking down trees 10-15 cm in diameter. Off-road activity seems responsible for the dispersal of most of the SB.

As mentioned in previous reports, we wonder whether blocking the River Tk in winter is effective – it is not practicable to supervise the closure and the 4WD vehicles simply drive around the end barriers, creating more damage there. If the boggy spots could be mounded there would be less off-track driving by most people. Signs are also needed asking drivers to keep their vehicles on the formed tracks. If some reasons are given that would help, too (e.g. preventing disturbance to the native vegetation; reducing the spread of weeds in the mud from tyres; reducing the likelihood of the dieback disease of *Phytophthora* entering the reserve).

A few SB and CT near the former eroded off-road tracks through the swamp and around to the south were herbicide-wiped; the infestation here was a trifle compared with the situation before our annual works began. CT in the area west from this point to the Entry Tk were also herbicide-wiped. No SB were found there but one area about 150 m south of the River Tk closure point had an infestation of AWO (about 40 plants) that we herbicide-wiped. A few AWO were also seen in the area nearer the Entry Tk. This year was the first time we walked over the entire area bounded by the River Tk, Old Diagonal Tk and Entry Tk. We found many small ‘hot-spots of CT (some with 50-100 plants) and many isolated plants. Some of the dense areas were found on denuded places, obviously created by past broad-scale spraying that killed everything; the CT either survived or found this ‘new’ site receptive for colonizing.

20. **The old “diagonal track” from the top of the Melaleuca Swamp to the old junction with the Entry Tk** – this track was severely infested with patches of very small SB along some of its length and these were laboriously herbicide-wiped on 23 Oct. Many hundreds were treated. Even some tiny plants had flowers and it is certain that traffic along this old track would cart seed into other parts of the reserve. A few CT, mostly on and near the track were also herbicide-wiped. A large patch of WG was also wiped in the area south of the old diagonal track above the swamp.

Work calendar and volunteers present

- Sat 08 Sep.: 9 present (RB&DL, JC&GC, DM&LM, S&M, RT), 11.00 am-4.15 pm = 24.5 hr: 11 am-12.30 pm – 9 people; 1.15-3.15 pm – 4 people; 1.15-3.30 pm – 1 person; 1.15-4.15 pm – 1 person
- Wed 19 Sep.: 2 people (RB & DL), 10.30 am-4.30 pm = 11 hr
- Sat 22 Sep. 5 present (RB&DL, DM&LM, HT), 10.30 am-5.30 = 21 hr. 10.30 am-1 pm & 2-5.30 pm- 2 people; 11 am-2 pm & 2-4 pm – 2 people; 1.30-2.30 pm (1 person)
- Sun 23 Sep., 2 present (RB, DL), 10.15 am-1.15pm & 2.15-5.15 pm: = 12 hr. A couple of very light showers occurred, the last at 5.15 pm but these were not considered to be enough to wash the herbicide off the plants.
- Fri 19 Oct. – 1 present (RB), 10.30 am-7.0 pm = 8 hr
- Sat 20 Oct – 2 present (RB & DL), 10.30 am-6.30 pm = 15 hr
- Tues 23 Oct. – 1 present (RB), 9.30 am-7 pm = 9 hr

Total = 100.5 hrs

Application of herbicides – Sparaxis and Cape Tulip in the dense areas of infestation were spot-sprayed with *Metsulfuron methyl* (3 g/10 L), surfactant (50 mL/10 L) and a red vegetable dye (40 mL/10 L). *Glyphosate* (150 mL/10 L) replaced Ally when Phalaris was treated. In all other cases SB and CT plants were wiped with a concentrated herbicide solution (*Metsulfuron methyl*, 1 g/L, *Glyphosate* 30 mL/L, surfactant 5 mL/L, dye 5 mL/L) using a tool (previously described).

Environmental notes

Birds – 52 species were seen (see Table), including Australasian reed-warbler, Yellow-tailed black-cockatoo & Rainbow bee-eater, species not seen in the previous 7 years.

Mammals – Grey Kangaroos, 1 Red-necked Wallaby and 1 Black Wallaby were seen.

Flora – this was a very good year for orchids. Large clumps of Nodding Greenhoods (*P. nutans*) were seen in several areas. The large clump of Greencomb Spider Orchids (*Caladenia tentaculata*) was mentioned above. Other smaller clumps were noted along the River Tk, past the Melaleuca Swamp. Pink Fingers, Wax-lips and several species of Sun-orchid were abundant. One Leopard Orchid (*D. pardina*) was seen and a few Wall-flower Orchids.

The indigenous native flora list remains at 330 species.

Fulham Streamside Reserve – HFNC volunteer work areas in September-October 2012

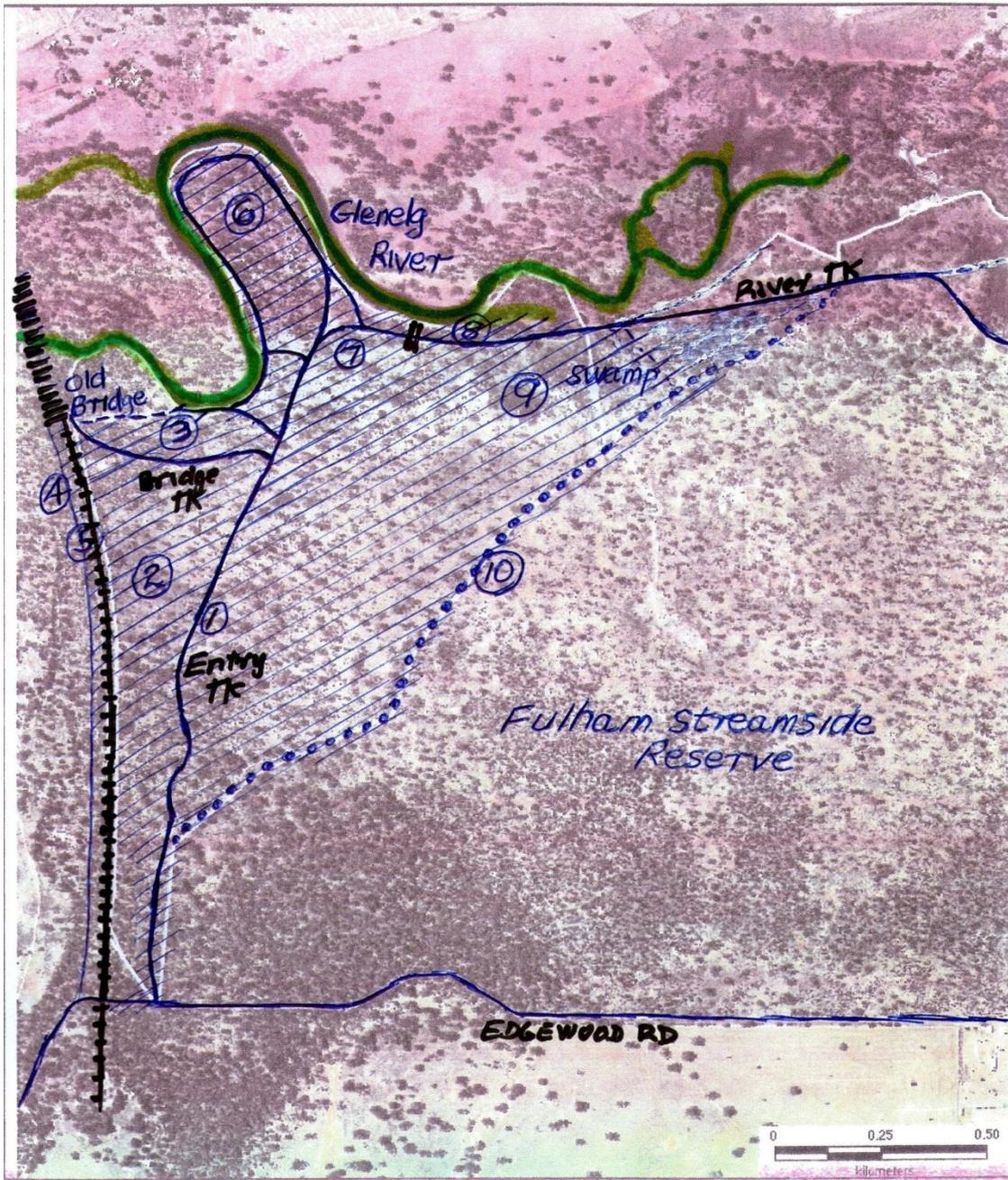


Photo 1. *Caladenia tentaculata* at Fulham Streamside Reserve (23 Oct 2012)



Photo 2. Hoon damage south of the River Track closure point – ‘circle work’ in a wet area in winter 2012





HAMILTON FIELD NATURALISTS CLUB

PO Box 591
Hamilton, Victoria 3300

Report on Weed Control Work at the Fulham Streamside Reserve in Sept.-Nov. 2013

SUMMARY

On 21&22 Sept., 19 Oct., 29 & 30 Oct and 5 Nov 2013 members of HFNC spent 101 hours on-site treating *Moraea flaccida* Cape Tulip (CT), *Sparaxis bulbifera* Harlequin Flower (SB), *Gladiolus undulatus* Wild Gladiolus (WG), Bridal Creeper (BC) and some other environmental weeds – Phalaris, Briar Rose, Thistle & African Weed Orchid (AWO), on the western part of the floristically-rich part of the western half of the Fulham SR. The attached map shows the areas treated.

As in 2012, we estimate that many thousands of CT plants were found and treated again this year, predominantly by herbicide-wiping, walking most of the project area. It is evident that continued efforts are needed to control the pest. Eradication of CT is difficult since plants are easily missed and seed from previous years lies in the ground or is carried in on vehicles and the wind. Another problem is that some treated plants that are in flower may still produce viable seed, or their corms may not die.

It is clear now, after 8 years at this site, that WG is a major threat to the reserve. It has advanced in great numbers adjacent to the river and River Tk and along the track to the Old Bridge, extending steadily into the heathland. This weed has the potential to drastically affect the floristic value of the reserve and we devoted some time in late spring this year in an effort to impede its progress.

As found last year, we found only hundreds of SB, so our efforts over the years have been rewarded. However, the plant is persistent and eradication will be hard to achieve. We found and treated hundreds of tiny plants along the old transverse track (10 on the map) and many of these carried flowers or seed capsules. Clearly earlier action is needed to prevent these plants from seeding.

We found many more AWO this year (hundreds of plants), spread widely around the reserve although still only in small numbers at each spot. While we treated all plants seen, the weed has not been treated on areas that HFNC does not work in. It seems that the AWO problem may be intractable.

Off-track driving continues to be a major concern, with drivers creating the usual mess on the areas adjacent to the tracks (see Photo 3 of one area). Some of the damage results from drivers avoiding boggy spots or driving around the barriers on the River Track. Other damage results from hoon's 'circle' work' on the open sites. We are convinced that this problem can only be reduced by:

1. Erecting prominent signs directing drivers to stay on the roads to prevent spread of weeds, disease and destruction of native vegetation.
2. Fixing up the few boggy spots on the designated tracks so that vehicles need not go off road.
3. Leaving the River Track open – determined drivers are not deterred by the barriers.
4. Requesting local police to pay occasional visits to the reserve to keep an eye on motorist behaviour (this happens elsewhere and we believe the officers welcome such breaks).

Two 'new' flora species were found: *Caladenia formosa* Crimson Spider-orchid (see Photo 1) and *Ptilotus macrocephalus* Featherheads); native species number 331. As usual, Chocolate Lilies, Tiger Orchids (Photo 2), Podolepis, Buttercups and other wildflowers were at their best in late October.

We added 3 species (Chestnut Teal, Australian Pelican and Great Cormorant) to the birdlist, total now 121 species. A Platypus, Eastern Grey Kangaroos and Black & Red-necked Wallabies were seen.

WORKS

A total of 101 hours of voluntary work was done. The days when work was carried out, the volunteers and hours of worked performed on each occasion, were as follows:

- Sat 21 Sept. – RB & DL, KG & JS, HC & GC, RZ & YI = 23 hrs
- Sun 22 Sept. – RB & DL, JC & GC, RZ & YI = 29 hrs
- Sat 19 Oct. – RB & DL, JC, RT = 25 hrs
- Tues 29 Oct. – RB = 8 hrs
- Wed 30 Oct. – RB = 9 hrs
- Tues 5 Nov. – RB = 7 hrs

The area worked is shown on the attached map. As in previous years, we concentrated first on CT, but also treating any SB, AWO or BC found. On subsequent days attention was also paid to WG, none of which was in flower, and to SB on the old transverse woodland track (10 on the map).

The herbicide wipe mixture used to wipe SB and CT plants was a solution (*Metsulfuron methyl*, 1 g/L, *Glyphosate* 20 mL/L, surfactant 5 mL/L, dye 5 mL/L) using a tool (previously described).

The spray used on isolated patches of WG at Area 13 contained *Metsulfuron methyl* 3 g/10 L, surfactant 50 mL/10 L and a red vegetable dye 40 mL/10 L). *Glyphosate* (150 mL/10 L) was added when *Phalaris* was treated, or where the patches of WG were isolated.

Defined areas of work

1. **Along the Entry Track to the river** – this strip was covered well, plants missed early were detected and treated on subsequent visits. The strip approx. 100 m wide east of the Entry Tk near the Edgewood Rd was also treated for CT.
2. **Area between the Entry Tk and the Railway Embankment and north to the Old Bridge Tk** – a small portion of the central western part of this area across to the railway ditch may have been missed but the remainder was well covered. CT was the major weed and many dense spots were found, especially adjacent to the dwelling to the west. About 25 SB were along the old track midway along but west of the Entry Tk. This was once a major problem area. A few dozen AWO were found throughout the area.
3. **Between the Old Bridge Tk and the river at the Main (second) Creek (downstream from the river bend) to the Old Bridge** – CT and a few SB were treated over this area on 21 September. On 5 November a great many patches of WG (and 50 SB) on both sides of the track near the boggy section were spot-sprayed with glyphosate and metsulfuron methyl. WG there is a threat to the floristically rich wet heath to the south.
4. **The western boundary strip outside the channel along the railway embankment to the Old Bridge** – there was no time to treat this strip this year.
5. **The western boundary channel** – there was no time to treat this strip this year
6. **The ‘peninsula’** – CT (many clumps), BC (a few plants), AWO (a clump of about 200 plants), SB and WG (both along the margin) were treated.
7. **East side of the entry track near the river and River Tk** – this is a former hotspot of SB & WG along off-road vehicle tracks through the *Pterostylis nutans* site. We herbicide-wiped a few CT, several dozen small SB among the orchids along and adjacent to that line. We also wiped or spot-sprayed hundreds of small clumps of WG between that line and the River Tk.
8. **From the Seasonal River Road Closure extending ~ 300 m east** – on 19 Oct dense clumps of WG were spot-sprayed (10 L) in this section north to the river, plus a few SB and CT. The river frontage further east was not walked and has not been in previous years – that will be a priority for 2014. A strip approx. 20 m wide was treated south of the track where masses of WG and several hundred SB were spot-sprayed (10 L). On 29 Oct a further 20 L of spray containing metsulfuron methyl and glyphosate was used to treat WG & SB further east (on the northern edge of the Buttercup Field) to the western edge of the Melaleuca Swamp.
9. **River Tk east past the Melaleuca Swamp to the old Diagonal Tk** – this section includes a strip ~250 m wide through the Field of Buttercups and the Melaleuca Swamp, then the triangle east of the swamp. Dozens of clumps of CT and individual CT were found and wiped. A few SB were found on the edge of the swamp.
10. **The old ‘diagonal track’ from the River Tk to the old junction with the Entry Tk** – only the western and eastern ends were done, treating CT and SB. There were only a few dozen SB on the eastern part but hundreds of tiny plants on the track (and some just off the track) on the western half. A small section nearer the Melaleuca Swamp was not visited.
11. **The area west from the entrance on Edgewood Rd across the creek to the railway bank** – this section has not been treated in past years. We found many patches of CT throughout and severe

infestation of the scrambling garden weed ('Carrot Weed') along the creek, beginning near the road bridge. The source is in the creek over the road (upstream from the bridge) where rubbish has been dumped in years past. That source needs to be removed. SB was also found at intervals along the creek, down to the Little Old Bridge. 'Carrot Weed' and CT was also rampant in the approach. Some 20 L of spray were applied to the task. CT and some SB were treated in the gutter along the railway embankment. Without that control it would be impractical to continue to control CT in the reserve.

12. **The large central area of heath and woodland east of the Entry Tk** – the major part of this large area was treated, with many large patches of CT found. A couple of large patches of 100-200 AWO were treated. The section from the centre to old Diagonal Tk was not walked.
13. **NE edge of Melaleuca Swamp** – on 5 Nov, an area of about 500 m² containing WG on the eastern edge of the Melaleuca Swamp and the River Tk was spot-sprayed with metsulfuron methyl (30 L of spray). The WG (and some SB) in that area is now dense, intimately associated with native rushes, grass, lilies and orchids, and imposes a serious threat to the vegetation in the swamp. If the chemical does not have an impact on the WG then glyphosate will have to be considered in 2014, in order to protect the bulk of the swamp vegetation.
14. **Edgewood Rd** – several patches of CT were seen on driving along this road where it indents into the reserve. CT on both sides of the road were wiped. A couple of other patches were treated nearer the entrance to the reserve.

Fulham Streamside Reserve – HFNC volunteer work areas in September-November 2013

The green-shaded part of the map indicate areas that were treated in 2013.

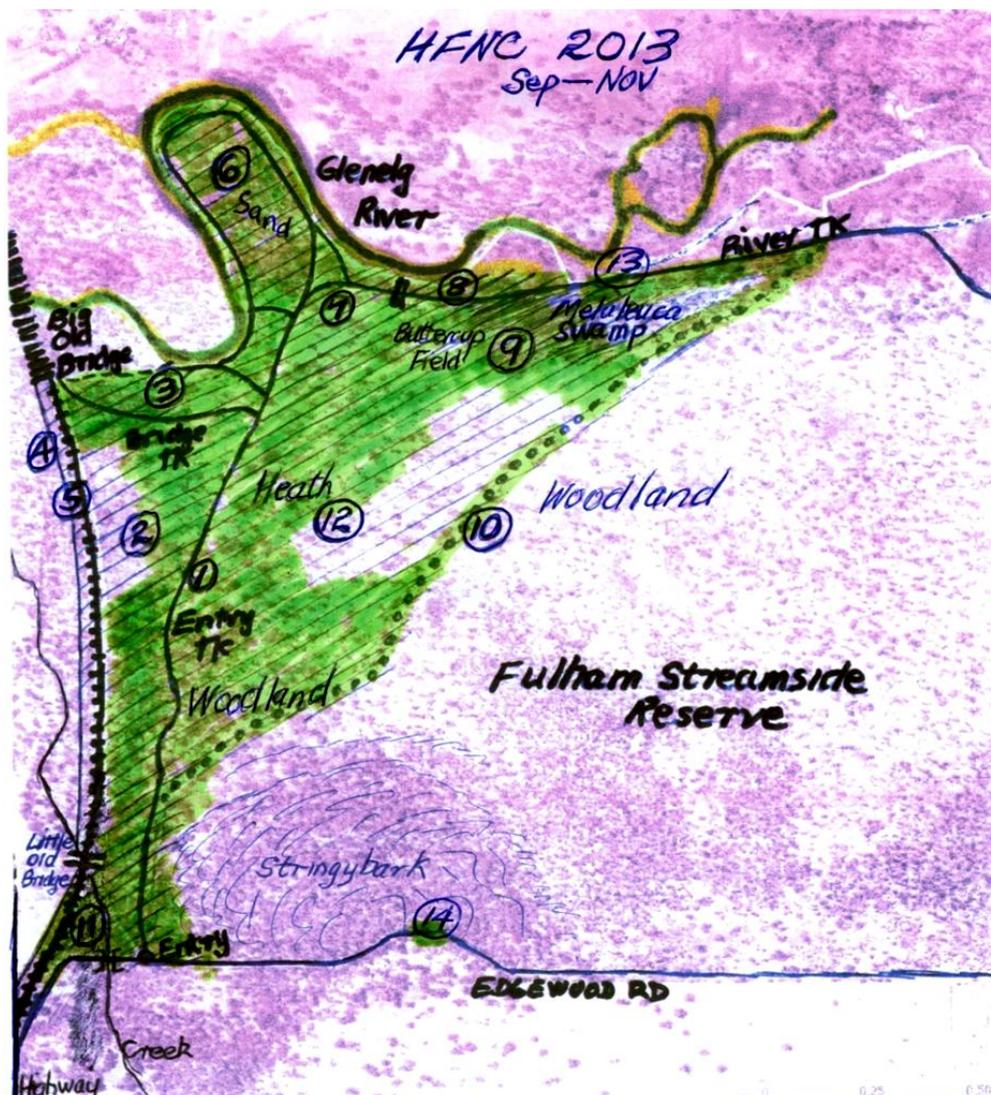


Photo 1. *Caladenia formosa* (Crimson Spider-orchid) at Fulham Streamside Reserve (22 Sept. 2013) – photo by Reto Zollinger)



Photo 2. *Diuris sulphuria* (Tiger orchid) at Fulham (22 Sept. 2013) – there were thousands flowering in the SW corner in late October 2013



Photo 3.

Part of the off-road damage along the Old Railway Bridge track in October 2013. The driver was avoiding the muddy spot on the track (shown at the bend on the right hand side of this picture).

This is one of the off-road ventures found at this site where weed control has been difficult – the actions increase weed invasion, destroy the native vegetation and may allow *Phytophthora* to gain access.





HAMILTON FIELD NATURALISTS CLUB

PO Box 591
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Report on Weed Control Work at the Fulham Streamside Reserve in Sept.-Nov. 2014

SUMMARY

On 14 & 15 Sep., 20 Sep., 4 Oct, 17 Oct., 20 Oct, 22 Oct & 1 Nov 2014 at various times six members of HFNC spent 92 hours treating *Moraea flaccida* Cape Tulip (CT), *Sparaxis bulbifera* Harlequin Flower (SB), *Gladiolus undulatus* Wild Gladiolus (WG), Bridal Creeper (BC), African Weed Orchid (AWO) and Fumitory on the western part of the floristically-rich part of the western half of the Fulham SR. The attached map shows the areas treated (marked in green).

Overall, about 73 hours were spent wiping CT, 13 hours pulling CT and removing from the site, and 6 hours treating other weeds. From a sample count of 3,600 plants wiped with 3.8 L of herbicide in 5 hours, about 700 CT were wiped per hour or 950 CT/L herbicide. On that estimate, with about 73 h devoted to CT wiping, about 50,000 plants were wiped.

The dry spring appears to have resulted in a wide spread of germination, with many tiny plants and others still not flowering by November but others had set seen in the capsules weeks ago. For the plants pulled on 1 Nov, 17 kg were removed, comprising about 70% of the total pulled (about 30% were small plants with no flowers, seed capsules or attached bulbs and these were left on site). We estimated from a sample that the average plant weighed 3g and therefore a total of about 8,000 plants were pulled. Eradication of CT is difficult since plants are easily missed and seed from previous years lies in the ground or is carried in on vehicles, birds, macropods and the wind. Another problem is that some treated plants that are in flower may still produce viable seed, or their corms may not die.

It is clear, after 9 years at this site, that WG is also a major threat to the reserve. It has advanced in great numbers from the River Track and along the track to the Old Bridge, extending steadily into the heathland. This weed has the potential to drastically affect the floristic value of the reserve.

We found only tens of SB this year, compared with tens of thousands 9 years ago, so our efforts over the years have been rewarded. However, the plant is persistent and eradication will be hard to achieve because it is entrenched along the river east from 'our' area where we have not been operating.

AWO is spread widely around the reserve although still only in small numbers at each spot. We treated all plants seen on areas that we work in. The AWO problem may be intractable.

Off-track driving for 'pleasure' (including hoon's 'circle' work' on the open sites) or collecting wood for camp fires is a major problem. Some of the damage in past years results from drivers avoiding a boggy spot (as on the Old Bridge Track) or driving around the barriers on the River Track.

The spreading of weed seeds is a major problem, from mud carried off the roads and from seeds dropping off vehicles that are driven off-road in summer and autumn. For example, CT is rampant in the adjacent State Forest area where most drivers visit and then some will proceed to drive off-track in the Streamside Reserve. We are convinced that this problem can only be reduced by:

5. Erecting prominent signs directing drivers to stay on the roads to prevent the spread of Cape Tulip, Phytophthora and the destruction of native vegetation. Such signs are present in State Forests, such as Bear, so why not here?
6. Fixing up the few boggy spots on designated tracks so that vehicles need not go off road.

We added 4 species (Intermediate Egret, Royal Spoonbill, Yellow-billed Spoonbill and Australian White Ibis) to the bird list, total now 124 species. Eastern & Western Grey Kangaroos and Black & Red-necked Wallabies were seen. Shingle-back Lizards were frequently seen.

WORKS

A total of 92 hours of voluntary work was done:

- Sat 13 Sep. – RB & DL = 14 hrs
- Sun 14 Sep. – RB & DL, RZ & YI = 18.5 hrs
- Sat 20 Sep. – RB & PH = 10 hrs
- Sat 4 Oct. – DL = 6.5 hrs

Fri 17 Oct. – RB = 7.5 hrs
Mon 20 Oct. – RB & DL = 16 hrs (incl. spraying Fumitory & Phalaris)
Wed 22 Oct – RB = 6 hrs (incl. Spraying Fumitory & Phalaris)
Sat 1 Nov. – RB & DL = 13 hrs (pulling CT rather than herbicide-wiping)

The area worked is shown on the attached map. As in previous years, we concentrated first on CT, but also treating any SB, AWO, WG or BC found. .

The herbicide wipe mixture used to wipe SB and CT plants was a solution (*Metsulfuron methyl*, 1 g/L, *Glyphosate* 30 mL/L, surfactant 5 mL/L, dye 5 mL/L) using a tool (previously described).

The spray used on Phalaris and Fumitory contained *Metsulfuron methyl* 3 g/10 L, *Glyphosate* (200 mL/10 L), surfactant 30 mL/10 L and a red vegetable dye 30 mL/10 L).

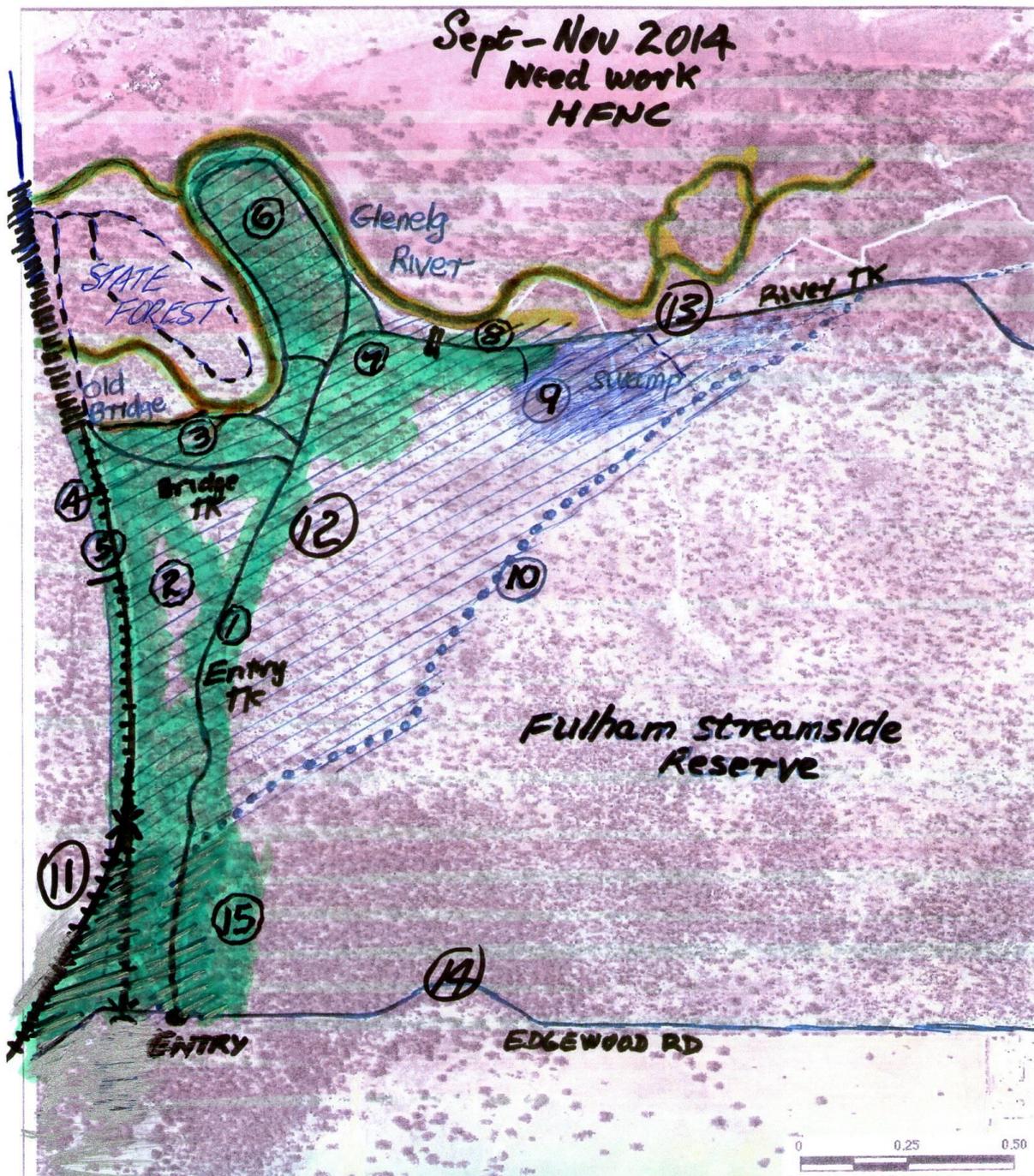
Defined areas of work

1. **Along the Entry Track to the Glenelg River** – plants missed on the first treatment on this strip (approx. 50-100 m either side of the track) were treated on subsequent visits.
2. **Area between the Entry Tk and the Railway Embankment and north to the Old Bridge Tk** – a small portion of the central western part of this area across to the railway ditch may have been missed. CT was the major weed and many dense spots were found. A section south of the Old Bridge Tk, from Entry Tk to the embankment channel was treated on 13 Sep.
 - a. On the 20 & 22 Oct CT was wiped (4 L) on the eastern 200 m strip from the Bridge Tk south about 600 m. The remaining portion south was wiped on 17 Oct.
3. **Between the Old Bridge Tk and the river at the Main (second) Creek (downstream from the river bend) to the Old Bridge** – CT and a few SB were treated over this area on 13 September. Clumps of Phalaris towards the Old Bridge were sprayed(3 L) on 22 Oct.
4. **The western boundary strip outside the channel along the railway embankment to the Old Bridge** – CT on the southern half were wiped on 4 Oct. CT on the northern half (from the Bridge to the first Red Gum growing on the embankment) were pulled on 1Nov and removed from the site. About 3,000 plants were removed, many bearing capsules.
5. **The western boundary channel** – CT (1.8 L wipe solution and about 1700 plants) and a couple of SB were wiped on the northern half of the channel area on 22 Oct. A few dozen CT were treated on the southern half to the defunct little bridge on the channel on 17 Oct.
6. **The ‘peninsula’** – CT (many clumps), BC (a few plants), AWO (a few plants), SB (a few on the river margin near the southern bend) and WG were treated on 20 Sep (10 hrs).
7. **East side of the entry track near the junction with the River Tk** – this is a former hotspot of SB & WG along off-road vehicle tracks through the *Pterostylis nutans* site and *Caladenia tentaculata* site nearby. This area was treated on 13 & 20 Sep. for CT, SB and WG.
8. **From the Seasonal River Road Closure extending ~ 300 m east** – CT was pulled on a strip 150-200 m wide to the western edge of the Melaleuca Swamp. Also a 50 m strip extending about 50 m east from the junction of the disused track and the River Tk. About 5,000plants were removed, many bearing seed capsules. It was deemed too late to apply herbicide.
9. **River Tk east from the Melaleuca Swamp to the old Diagonal Tk** – this was NOT visited.
10. **The old ‘diagonal track’ from the River Tk to the old junction with the Entry Tk** – this area was NOT visited.
11. **The area west from the entrance on Edgewood Rd across the creek to the railway bank** – this section runs down to the defunct little channel bridge. Fumitory and clumps of Phalaris were treated (10 L spray) along the channel just upstream from the little bridge on 20 Oct. CT and a couple of SB were wiped (1.5 L wipe solution) along the embankment, extending 50 m south of the road sign on Edgewood Rd, and east to the creek. Fumitory, Phalaris and a small patch of BC was sprayed (7 L) on the channel near the Edgewood Rd on 22 Oct.

12. **The large central area of heath and woodland east of the Entry Tk** – the major part was NOT treated this year, due to a shortage of volunteers.
13. **NE edge of Melaleuca Swamp** – unfortunately, again, we did not have time to check this area where WG and SB was seen in 2013 as a serious threat to the swamp vegetation.
14. **Edgewood Rd** – we did not see any CT or SB there.
15. **Eastern corner, Edgewood Rd and Entry Track junction** – a block approx. 250 m wide east of the Entry Tk at Edgewood Rd and extending about 400 m north from there was also treated for abundant clumps of CT on 4 Oct & 20 Oct.

Fulham Streamside Reserve – HFNC volunteer work areas in September-November 2013

The green-shaded part of the map indicates areas that were treated in 2014.





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On 12 Sept. 2015, 7 members of HFNC (RB & DL, JC & GC, KG & JS, RT) collectively spent 29.5 hours herbicide-wiping *Moraea flaccida* Cape Tulip (CT), *Sparaxis bulbifera* Harlequin Flower (SB), *Gladiolus undulatus* Wild Gladiolus (WG) and a few African Weed Orchid (AWO) on the western half of the Fulham SR. Bridal Creeper (BC) was spot-sprayed. The weather was fine. Despite 30 mm of rain at the previous weekend the area was generally dry and only a few of the native flora in flower.

The area treated on 12 Sept. was a strip 50-100 m wide south of the Glenelg River, from the western peninsula to the old track on the western side of the Melaleuca swamp, some 300 m east of the seasonal "road block" on the River Track. The area towards the Melaleuca Swamp was a priority because there were too few helpers to apply herbicide to the CT there in 2014, instead DL & RB pulled up plants in November, a process that removed the seeds but left most of the corms in the ground. Small SB were much in evidence along the margin of the River Track and near the Melaleuca Swamp. CT was prolific in patches, as was WG, a serious future threat to the heathland flora.

On 23 Sept., RB spent 7.5 hrs treating CT and some SB and AWO in the area up to 200 m south of the River Track, as far as the Melaleuca Swamp. Isolated plants and patches of heavy infestation were found. Only a few CT had flowers but there were many tiny plants present with the larger plants. A sample count of wiped plants indicated that approx. 2000 plants were wiped per L of fluid. The volume of fluid used was 3.2 L, therefore about 6,000 CT and 500 SB were herbicide-wiped.

On 26 Sept. 2015, only 2 members (RB & DL) attended the HFNC working bee and 15 hrs were employed in wiping CT and some SB and AWO in the following areas:

- About 20-40 m either side of the entry track from the entrance to the river.
- East of the southern river bend, as far as the top of the Melaleuca Swamp. This area extended about 300 m south from the river track. There were several dense patches of CT to wipe.

We used 6 L of wipe herbicide (glyphosate + metsulphuron methyl + wetter + red dye), therefore about 12,000 CT were herbicide-wiped on 26 Sept. (800 CT per hour).

On 19 Oct. 2015, RB & PH spent a total of 11 hrs (using 3.8 L of wipe mix) to wipe Bridal Creeper (on the Peninsula) and CT (areas south on both sides of Entry Tk and along Old Bridge Tk.). Most of the small CT had not flowered but the large plants had finished flowering. It was estimated that about 7,600 CT were treated. No SB were found in the areas treated.

On 23 Oct. RB & PH spent 10 hrs wiping CT off the Old Bridge Tk and east of the old railway line, and further south well away from the Entry Tk on both sides (large patches of CT found on the east side. About 3 L of herbicide solution was used to wipe about 6,000 CT and a dozen AWO. The small CT were alive but some of the larger plants had begun to dry off as a result of the lack of spring rain.

Allowing for a 50% lesser efficiency by volunteers on 12 Sep. (who spend less time on this task), and 30% of time spent on WG, SB & Bridal Creeper, we estimate that the total number of CT wiped on 12 Sept. was about 8,000 plants. For the 5 periods, the total CT wiped was about 39,000 plants.

The total hours of work done this year is 73 hrs, mostly by 3 people. That is not sufficient to achieve satisfactory control of CT, WG or AWO in the western area we have worked on in the last 10 years (the hatched area in the Work Map). We have too few members willing or able to take part. There is no offer from other organisations to assist, and morale is low when members see the result of PV's apparent inability to control off-road activities that spread weed into areas that we have treated.

The most recent cases illustrate the problem:

- Horses camped on native vegetation – on the Friday and weekend of 23-25 Oct. a Warrnambool club put their horses on native vegetation south of the River Tk, rather than on the degraded area adjacent to the river. There is adequate space east of the current camp and boat launch area. They claim that no restrictions were placed on them. If that is so then it suggests that PV has not placed any

significance on the native flora. It happens that the horses were on or near to the best stands of *Caladenia tentaculata* and *Pterostylis nutans* that exist in the reserve and we have been controlling weeds there for 10 years. Members now think we have wasted our time working on the reserve. Another horse group plans to jump logs and roam the reserve in Nov.

- **Hoons with 4WDs** – some time between 12 and 23 Sept., hoons had engaged in burnouts with their vehicles to tear up the heathland, particularly near the Melaleuca Swamp, and created deep ruts alongside the River Track. Our call for signs asking visitors to keep to the formed tracks has been ignored, yet that seems to us to be the only way this unsupervised area will get any protection. Weeds that we try and control are being distributed into the heathland by these vehicles. On 23 Sept. a small 4WD was seen driving across from the south across the heathland adjacent to the Melaleuca Swamp, a practice that has become all too common here.

There are 2 major issues that have prompted us to reconsider any further weed work at Fulham:

- An ageing membership and thus our future inability to do as much work on the project
- The perception that PV has little interest in the flora on the reserve, maybe because it is labelled as a Streamside Reserve, with a reluctance to control horses and vehicles on the reserve. Seeing our efforts to control weeds being offset by actions of others is most disheartening.

Another option for HFNC is to cover a smaller area (e.g. west of the Entry Tk from Old Bridge Tk to Edgewood Rd) that is less likely to be ruined by hoons and horses. Our work has been a holding strategy, hoping that work in WA on biological control of CT might provide a better means of control of CT here.

If CT engulfs the heathland, and broad-scale spraying is again employed by PV, that will eventually obliterate most of the native flora without removing the CT, as happened in the past. Preventing that outcome has been our motivation to find a better way of controlling CT.

WORKS

The herbicide wipe mixture used to wipe SB and CT plants was a solution (*Metsulfuron methyl*, 1 g/L, *Glyphosate* 30 mL/L, surfactant 5 mL/L, dye 5 mL/L) using a tool (previously described).

The spray used on BC and Phalaris contained *Metsulfuron methyl* 3 g/10 L, *Glyphosate* (200 mL/10 L), surfactant 30 mL/10 L and a red vegetable dye 30 mL/10 L).

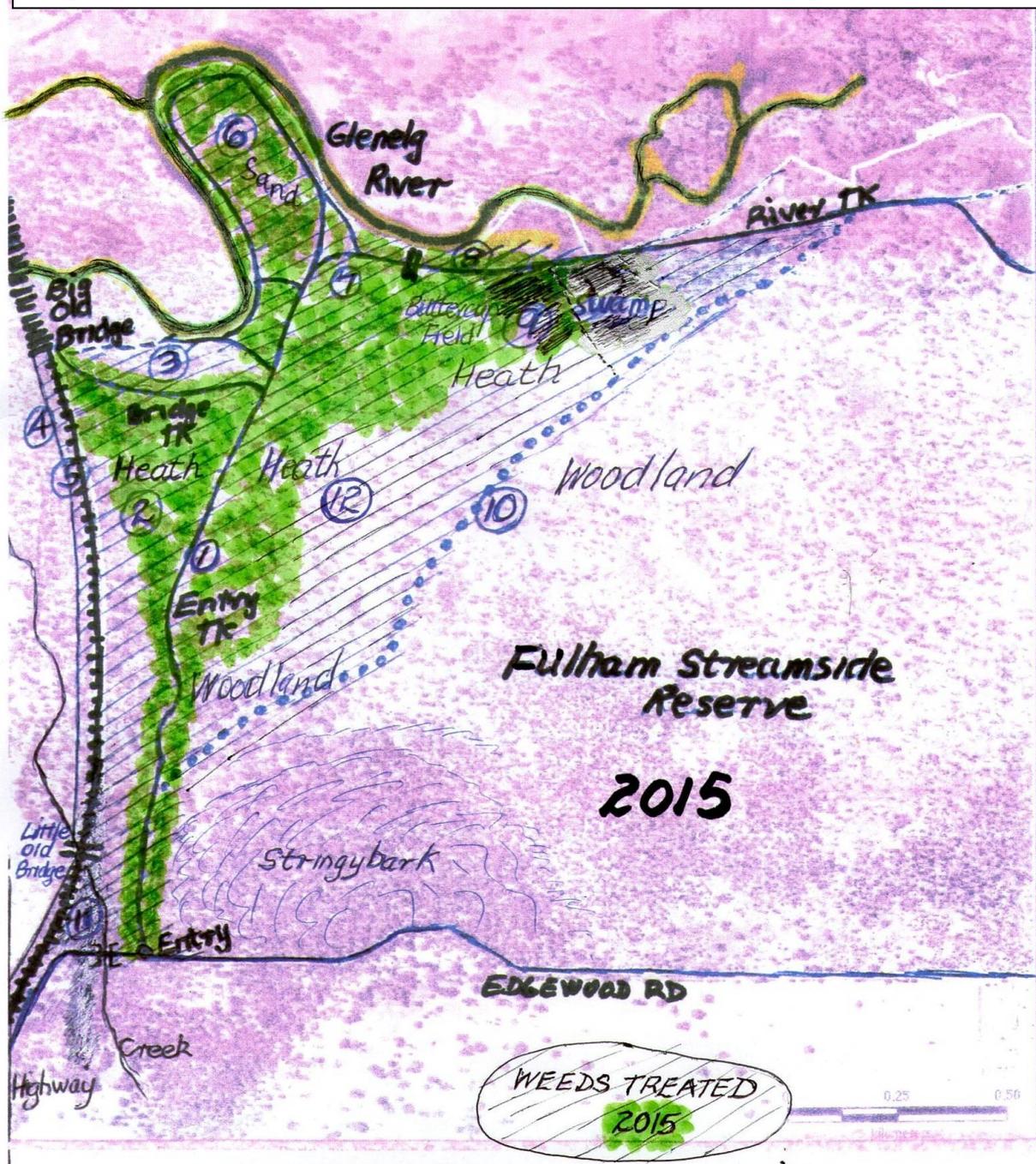
Defined areas of work (see Map)

- (1) **Along the Entry Track to the Glenelg River** – 20-70 m either side from entrance to the river.
- (2) **A wedge south of Old Bridge Tk** – to the creek and bridge; also a 20 m strip north of that track.
- (6) **The ‘peninsula’** – BC was sprayed on the strip adjacent to the river; the few CT found were wiped
- (7) **East side of the entry track near the junction with the River Tk** – this is a former hotspot of SB & WG along off-road vehicle tracks through the *Pterostylis nutans* site and *Caladenia tentaculata* site nearby. This area was treated for CT, SB, WG & AWO.
- (9) **River Track to Melaleuca Swamp** – east from the ‘Seasonal Closure sign’ to the disused track on the west side of Melaleuca Swamp and 10-20 m on the east side (8). The work extended about 300 m south of the River Track, from the top of the Melaleuca Swamp across to the Entry Track.
- (12) **Heath area east from Entry Tk** – middle section, extending about 300 m east

FLORA & FAUNA

Only 44 species of birds were noted but one ‘new’ bird was a Nankeen Night-heron. The total for Fulham is now 126 species. Eastern & Western Grey Kangaroos and Black & Red-necked Wallabies were seen. Shingle-back Lizards were also frequently seen, and one Common Bearded Dragon.

Orchids seen in flower were *Thelymitra rubra*, *T. antennifera*, *Caladenia tentaculata*, *C. carnea*, *Glossodia major*, *Microtis* sp., *Pterostylis nutans* and a few *Diuris pardina*. The land was quite dry and there were not many individuals of any species except *C. carnea*. There was, however, a good flowering of native Flax (*Linum marginale*) and Showy Podolepis (*Podolepis jaceoides*). The number of native species recorded for the reserve remains at 330.



Suggestions for an improved natural environment at Fulham

1. **Tracks and signs** – closing tracks does not work. The 4WD fraternity drive around the closure site, creating more mess. The official tracks should be made weather-proof (we note the good work done on the Old Bridge Tk) and signs installed asking drivers to remain on the tracks, to prevent damage to the flora and passage of weeds and disease into the heathland. There are no signs now to suggest that drivers should take care of that environment, or that it has any value! Old, disused tracks should be adequately blocked by logs, which may have to be carted in from other parts of the reserve. DELWYP has marked the old closed track (see 10 on map) as a fire unit boundary – hoons and other visitors would use it, with vandalism and weed incursions anew.
2. **Toilets** – there are none and the riverside area shows up that deficiency. This is a very popular camping place and the lack of a pit-toilet is a disgrace. It does not encourage a visitor to value the place. There are many reserves with smaller visitor presence that do have a toilet installed.
3. **Supervision of vehicle activities**– due to its relative isolation and staffing shortages we acknowledge that it is difficult to have any supervision by a ranger on weekends when most of the damage is done. Is it possible for the police from Balmoral to call occasionally to check the motoring activities in the area?
4. **Status** – ideally the creation of a **Flora Reserve** on areas south of the River Track is needed to change the perception of the reserve as just a place of little importance that can be trashed.

Horses camped on the native vegetation south of the River track, near the road closure point.
(Fri 23 Oct 2015 – other horses were due to arrive there later for the weekend.)



Deep ruts created by hoon drivers in Sept. 2015



The lack of good spring rain has limited the show of wildflowers a Fulham in 2015. However, species such as **Showy Podolepis** were still prominent in the heathland and there were several orchids flowering in early September.

