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The Editorial Committee, PO Box 210 Panania NSW 2213 l *Telephone: 9785 2374*

SPECIAL BUSH REGENERATION ISSUE
Featuring Norfolk Reserve, The Crest and Lansdowne Reserve updates prepared by C P Gibson

TYLOPHORA WOOLLSII ENVIROFUND GRANT 2005-2007

Tylophora woollsii was first collected by the Reverend William Woolls at Parramatta in the mid 19th century. A second collection was not made until J B Williams found it in rainforest north of Dorrigo in 1964. Several other collections have since been made in northern New South Wales and in south-eastern Queensland. *Tylophora woollsii* was found for only the second time in the Sydney region at Norfolk Reserve, Chullora, where it was collected by C P Gibson in March 1999.

Four plants currently survive at Norfolk Reserve, in Ironbark-Woollybutt Forrest with understorey comprised of Shrubby species such as *Melaleuca nodosa, M. decora, Bursaria spinosa, Acacia pubescens* and *Pittosporum revolutum.* Since it was observed at Chullora, the species has never managed to successfully flower and produce seed. The species is regarded as a plant of rainforest margins, therefore its occurrence at Chullora is likely to be in habitat marginal to its original occurrence. Around Chullora and Bankstown it probably occurred as a mesic-leaved component of the Turpentine Forest understorey, small pockets of which still survive as isolated remnants on the shale rises from Lansdowne to Yagoona and eastwards to Chullora.

The chief objective of this project was to eradicate invasive weed species spreading to proximity to the Tylophora plants, particularly along the northern and western bushland margins, but also in intrusive situations within the core area bushland, the main weed species targeted were Bridal-veil Creeper, Veldt Grass, Paddy's Lucerne, Lamb's Tongue, Fleabane and Fireweed. To accomplish this a small team of qualified bush regenerators was engaged, supported by Bushland Society volunteers working within the Society's volunteer bush regeneration program as well as with the recently established Norfolk Reserve Bushcare group, sponsored by Bankstown City Council. The Environmental Trust funded bush regeneration team spent 581.5 person hours in

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the field. The Bankstown Bushland Society has been undertaking volunteer bush regeneration work at Norfolk Reserve since 1991, the recent Envirofund grant is the third grant to be awarded to the Society in support of its work at Norfolk Reserve. Bankstown City Council made a number of significant contributions to the grant, including fencing of the entire bushland remnant.

By systematically sweeping along the bushland margins as well as through the core area, we have progressively brought a range of weed situations under control. Basic hand-weeding methods have proven very successful in the core area bushland where Tylophora plants are located. Spraying of targeted annual weeds. Particularly Veldt Grass (*Ehrharta erecta*) at the southern end of the reserve, with Glyphosate 1:100 Biactive, with timed repeat sprays and follow-up hand-weeding has also achieved good results. Similarly, Couch Grass and a variety of herbaceous weeds were knocked down with Glyphosate Biactive along bushland perimeters; Couch being most prevalent on the western margin, with herbaceous weeds such as Cobblers Peg, Pigeon Grass, Vetch and Lamb's Tongue common in disturbed ground at the northern end of the reserve. In all cases, follow-up by hand has followed knock-down spraying.

Another aim of the project was to promote successful flowering and seed production of the Tylophora vines. An autumn flowerer, *Tylophora woollsii* appears to either not produced or to have aborted its flowers every season since observed in 1999 due to prolonged warm-dry conditions from summer extending into autumn. The species appears to need a wet summer continuing into autumn to have any chance of flowering and fruiting at Chullora.

The spring/summer of 2005-2006 continued dry, so water was regularly applied to a shallow sump where the vines emerged from the ground. The plants were producing leaves and appeared to be in good condition when, on the 1st January 2006, Sydney

temperatures rose to 45° C. Despite having been watered only a few days before, this extreme heat killed the above-ground vegetative stems of all four plants. It was in fact feared that the plants had been killed outright; a drip-feed system was subsequently set up, but it was several months before the underground tubers were able to send green stems above the surface of the soil. For the whole of 2006 and for most of 2007 no more than six leaves were produced by the most vigorous plant, the other three not producing any green stems until the wet summer of 2007/2008.

This further leads us to suspect that *Tylophora woollsii* not only occurs in a marginal situation at Chullora, but also that the species is very durable to survive such prolonged adverse conditions. The plants can only produce seed in the most optimum conditions to which have not been noted in the area for many years. The tubers must store and conserve energy effectively to make up for lost flowering opportunities; successful fruiting and seed-setting appear to be of an intermittent nature.

Tylophora woollsii is perhaps Sydney's rarest plant. This grant has provided a great opportunity to eliminate all weed infestations threatening the plant, thereby securing its longer term viability at the site. There is still a long way to go to bring the weed situation at Norfolk properly under control, work continues by the Society's volunteers, Council contractors and the Bushcare Group. Primary weed infestations remain along the eastern and northern perimeters. Volunteer work is being concentrated in these areas at time of writing. Though its recovery is very slow, wetter summer and early autumn conditions give us hope that we may yet see the Tylophora flower and produce seed; similar conditions will probably need to prevail through to next summer to enhance the prospects of this.

BBS volunteers at Norfolk Reserve 2005-2008. Patricia Bell, Jean Brian, Dora Bustamante, Colin Gibson, Shafart Hussain, Irene Jones, John Kyriazis, Maree Ledson, David Ledson, Darryl McKay, Tanvir Uddin, David West

RECENT OBJECTIVES AT THE CREST

Part of the level rim of the Lansdowne Scarp on the western side of The Crest Passive Reserve is right at the interface between vegetation of the Turpentine brushforest and Cumberland Plain Grey Box Woodland associations. This area has been worked by the Society in the past, wit some support from Bankstown City Council contractors. The chief weed problems here have been *Ehrharta erecta, Asparagus densiflorus* and *Asparagus asparagoides*. A steady effort has been continued with the current Environmental Trust grant, supported by BBS volunteers, to progressively eliminate the Asparagus spp., and to check and reverse the spread of *Ehrharta erecta* and other herbaceous weeds.

Cumberland
Flora And Fauna
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Having achieved the upper hand against *Ehrharta erecta* in the nearby core Turpentine habitat, we have been able to concentrate more on the situation in the transitional habitat on the side closer to Rex Road. The seed cycle of Ehrharta is closely linked to moisture availability through rain events, of which, during 2007/2008, unlike in recent years, there have been a number. In order to get ahead (and stay ahead) of seed set, we have, on a regular basis over recent months, maintained a presence here of a few hours weekly. Ehrharta soil seedbank in this area is not yet exhausted, but continuation of this policy of periodic follow-up attention will guarantee that it eventually will be.

***Typhonium brownii* at The Crest**

Another recent objective has been the sandstone spur, which occupies the south side (north-westerly aspect) of Typhonium Gully, the gully that drains the level rim of that part of the Lansdowne Scarp at The Crest. The sandstone spur is at or near the boundary between the Bringelly and Ashfield Shale sub-units of the Wianamatta Shale grouping. The sandstone spur is so named because of the very fragmented outcropping of rubble-like sandstone at the shale interface. The level rim of the scarp is occupied by Turpentine forest with mesic-leaved understorey, and is transitional with Cumberland Plain Grey Box Woodland that predominates over much of The Crest Passive Reserve, including the sandstone spur.

The work undertaken on the sandstone spur is an expansion of the ongoing work of many years in the nearby Turpentine (brushforest) area which includes the habitat of *Typhonium brownii*, this species being locally restricted to the upper part (above the main east-west bitumen path) of Typhonium gully.

After many years, the work in the brushforest (including uppermost Typhonium gully) is nearing completion. The logical progression is to continue across the main east-west path and further down the degraded gully (Typhonium gully) that drains the sandstone spur. Therefore the area referred to as the sandstone spur, generally, is bounded by the main east-west bitumen path to the north, the bed of the gully on the west side, and the two

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roughly north-south running bitumen paths, both of which connect with the main east-west path.

No bush regeneration work has previously been undertaken on the sandstone spur. 49 person hours have been spent opening the account here by the Environmental Trust funded team in 2007. the main effort has been aimed at eradicating dense *Asparagus asparagoides* and *Asparagus densiflorus* infestations under two large Native Cherries (*Exocarpos cupressiformis*) trees. This part of the reserve is rich in locally rare and significant species, among them *Pimelea spicata, Senna odorata and Hybanthus stellarioides.* Smothering weeds have been rapidly spreading here in recent years, presenting serious threats to the native flora.

The margin of the east-west bitumen path has also been swept a couple of times for herbaceous weeds such as *Ehrharta erecta*, Fleabane, paddy's Lucerne, Purple Top, Lamb's Tongue, Burr Medic, Moth Vine, African Love Grass, Pigeon Grass and Fireweed. Spot-spraying of both sides of the bitumen path has also been done.

The sandstone spur is a sizable area that becomes progressively more degraded the closer one approaches the bed of Typhonium Gully. The opposite side of the gully (west side) is even more degraded, but both sides have great potential for natural regeneration. The upper slope of the sandstone spur is expected to respond well to the ongoing work that is intended here. Encouragingly, the Bankstown City Council bush regen team in recent months has been sweeping the upper level of the sandstone spur for Asparagus spp., Lamb's Tongue and Fireweed etc. Hopefully more effort can be directed here in the near future.

BBS volunteers at The Crest 2005-2008 Patricia Bell, Harry Brian, Jean Brian, Colin Gibson, Harry Gibson, Irene Jones, Jean

Typhonium Flowering at The Crest

This year Darryl McKay was lucky enough to photograph the flower of *Typhonium brownii* at The Crest. Since it was first observed there in 1990, flowering plants have been rare, and the flowers have never been seen at peak opening, which only lasts one day. So you literally have to be there on the day as was Darryl. During recent dry summers we have not seen so much as a single flower, as wet summer conditions with fast vegetative growth seem to be eventual. A single flower was observed on 20-02-2005, but none at all were observed during 2006-2007.

***Typhonium brownii* flowering at The Crest 29-01-2008**

Typhonium are pollinated by dung beetles. The aroma of the flower is 'dung scented' in order to attract the dung beetles. The beetle crawls inside the centre of the flower, or 'trap chamber' where it is trapped overnight. The flower collapses horizontally overnight, and the next morning the beetle is able to crawl out, to go off to pollinate another flower. The flower then dies.

Unfortunately the flower photographed by Darryl was not fertilised (where are the dung beetles when you need them?) and no fruit or seed was produced. Only this one plant out of a known population of 100+ at The Crest produced a flower.

Next year if we can find at least one flower on the one and only day it opens, and a dung beetle to go with it, by slotting the beetle in the trap chamber at the base of the flower, we might yet see a fruiting and seeding plant at The Crest.

LANSDOWNE TURPENTINE FOREST BUSH REGENERATION

The occurrence of Turpentine (*Syncarpia glomulifera*) at the northern end of Lansdowne Reserve adjoining the Hume Highway is at the western limit of its coastal distribution. Turpentine does not occur further west until the foothills of the Blue Mountains. At Lansdowne, Turpentine occurs in association with *Eucalyptus fibrosa*, an ironbark that occupies drier habitats than those that more frequently associate with Turpentine such as *E. paniculata* and *E. siderophloia.*

Recent work here has concentrated on the peripheral boundaries of the core Turpentine habitat, targeting a variety of weed problems, especially African Love Grass, Paspalum, Paddy's Lucerne, Cobbler's Peg, Wandering Jew, Fireweed and Pigeon Grass. A total of 118.5 person hours were spent here by the contract team to the end of 2006, with 103 person hours in support by the Society's volunteers since the completion of work at this site at the end of the earlier grant in August 2005, up until the end of 2006.

African Love Grass has been grubbed out with mattocks, with repeat spraying of herbaceous weed perimeters. Two patches of Wandering Jew in the core area were raked, with subsequent follow-up hand-picking. A burnt-out native grass perimeter was hand-weeded for Fireweed, Fleabane, Freesia and African Love Grass. This burnt area had not previously been worked before and was found to contain the rare plants *Pimelia spicata, Acacia pubescens* and *Marsdenia viridiflora*.

In 2007, our chief aim at Lansdowne has been to bring a wide range of weed greases under control, particularly along the very degraded western, northern and eastern margins of the site. These grasses include African Love Grass, Couch, Kikuyu, Carpet Grass, Pigeon Grass, *Paspalum dilatatum, Briza subaristata, Briza minor, Briza maxima, Panicum maximum, Ehrharta erecta, Lolium perenne* and *Bromus unioloides*. This has required a lot of well-timed, meticulous hand-weeding and spot spraying. 414.5 person hours have been directed at Lansdowne during 2007, with 86 hours in addition by BBS volunteers.

One area intensively treated has been the mass of introduced Couch and other weeds (including Purple Top, Vetch, Fireweed, Pigeon Grass, Umbrella Sedge, Paddy's Lucerne, etc) occupying the broad margin fronting Lansdowne Parade. Subsequently to heavy rains earlier in the year, this area flooded, taking a couple of months to drain. The flooding triggered the germination of a range of wetland margin species in one localised part of the frontage; species such as *Juncus polyanthemus, Juncus usitatus, Juncus subsecundus, Schoenus apogon* and *Fimbristylis dichotoma*. *Juncus polyanthemus*, though previously recorded in Bankstown, had not been seen for more than 15 years, whilst another sedge that surfaced here, *Cyperus flaccidus*, had not been recorded before.

Periodically inundated wetland fronting Lansdowne Parade in process of rehabilitation. 16/02/2008

Subsequently, seed heads were collected with the aid of scissors, and we now have a quantity to broadcast once we have sufficiently swept the area free of Couch, Pigeon Grass and resurgent herbaceous weeds. The hard bed of Lansdowne Parade serves as the dam for this potential wetland, as well as providing a weed-free, low maintenance edge to work to. This unexpected opportunity to rehabilitate a degraded ephemeral wetland adds an interesting new aspect to the work here.

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At Lansdowne, we are also working to stabilise the high maintenance western margin, where we are up against a large area completely dominated by weeds that is protected from mowing. We have drawn this fact to Council's attention, and we have recommended that this area be mown, as the difference between low maintenance and high maintenance edges is often that the former are up against a zone of mowing, and the latter up against zones of no mowing. Low maintenance mown edges of Lansdowne provide opportunities for native grasses and forbs to migrate out into mown areas, whereas high maintenance no mown margins threaten to swamp adjoining native vegetation with the great quantities of seed they are allowed to produce.

The southern perimeter of our site has for many years been an old, asphalted road that was deep-ripped in about 1991 and subsequently left to regenerate with a mixture of weeds and native species. This we sometimes refer to as 'Ditch Road'. A lot of meticulous hand-work and spot-spraying has been concentrated here in 2007. Having a long time ago had the topsoil ripped from it, it has been slow to regenerate, but recently tussock native grasses such as Austrodanthonia and Lachnagrostis spp. have become more apparent here, replacing the mostly weed biomass of species such as *Briza subaristata*, Lamb's Tongue, Burr Medic and *Linum trigynum*. We have also collected and broadcast Austrodanthonia seed here to encourage things along.

Ditch Road runs along the rim of the Lansdowne Scarp, and, as we have gained ground here, we have been able to turn our attention to the habitat on the southern slope that is transitional between the Turpentine-Ironbark Forest and Cumberland Plain Grey Box Woodland. Beginning with primary spot-spraying forays against African Love Grass, Fleabane, Fireweed, Paspalum, *Ehrharta erecta* and Blackberry, we are now able to devote a fair effort by hand to enlargement of the overall core area of regenerated habitat.

This southern slope contains the beginning of one of the main drainage lines passing through Lansdowne Reserve. The further along one proceeds the more degraded it becomes, but at least now we can claim to have begun the restoration effort from its very point of origin—the rim of the Scarp itself.

BBS volunteers at Lansdowne 2005-2008. Patricia Bell, Harry Brian, Jean Brian, Colin Gibson, Nerida Hrazdil, Irene Jones, Jean Klovdahl, Maree Ledson, David Ledson, Darryl McKay, Simon Rowe.

ATTENTION

If anyone has interesting sightings of birds, frogs, reptiles or mammals in the Bankstown district or needs identification assistance, I would be happy to hear from you.

Please call Darryl on 9708-5283

e-mail: sternaalbifrons@unwired.com.au

Lansdowne Scar Tree

This scar on an old Grey Box at Lansdowne may be of aboriginal origin. Nearly 2.5 metres in length, it would be too long for a shield. Another possibility is that the sheet of bark was made into a small nowey (a type of bark canoe) for use on nearby Prospect Creek.

BANKSTOWN BUSHLAND SOCIETY MEETINGS AND ACTIVITIES

Bankstown Bushland Society meetings are held at Padstow Progress Hall (annex), Ryan Road, Padstow.
3rd Wednesday of every month. In annex at the rear. Time: 7.00 pm
Tea and biscuits provided. All welcome.
Further inquiries please ring : 9785 2374

BANKSTOWN BUSHLAND SOCIETY VOLUNTEER BUSH REGENERATION PROGRAM
June to December 2008
9.30am To 12.00pm
Telephone contacts: Pat 9785 2374, Colin 9788 6232

MONTH:	2nd MONDAY (Except December)		3rd SUNDAY (Except December)
JUNE	**9th: Norfolk Reserve:** Tylophora woollsii habitat. Meet on Norfolk Road at Chullora.		**15th: Lambeth Park:** The Steps. Meet in carpark at Lambeth Park off Henry Lawson Drive, Picnic Point.
JULY	**14th: Padstow Park:** Ironbark Forest. Meet at Padstow Park, Banks Street, Padstow.		**20th: Lansdowne Reserve:** Cumberland Plain Woodland. Meet in carpark on Lansdowne Parade, off Hume Highway, Lansdowne.
AUGUST	**11th: Smith Park:** Transition Forest. Meet in tennis courts carpark, Lehn Road, East Hills		**17th: Lambeth Park:** The Steps. Meet in carpark at Lambeth Park off Henry Lawson Drive, Picnic Point.
SEPTEMBER	**8th: The Crest:** Turpentine Brushforest. Meet in the Athletics Complex carpark via McLean Street, Bass Hill.		**21st: Lansdowne Reserve:** Cumberland Plain Woodland. Meet in carpark on Lansdowne Parade, off Hume Highway, Lansdowne.
OCTOBER	**13th: Padstow Park:** Ironbark Forest. Meet at Padstow Park, Banks Street, Padstow.		**19th: Norfolk Reserve:** Tylophora woollsii habitat. Meet on Norfolk Road at Chullora.
NOVEMBER	**10th: Lansdowne Reserve:** Cumberland Plain Woodland. Meet in carpark on Lansdowne Parade, off Hume Highway, Lansdowne.		**16th: The Crest:** Turpentine Brushforest. Meet in the Athletics Complex carpark via McLean Street, Bass Hill.
DECEMBER	**1st: Lambeth Park:** The Steps. Meet in carpark at Lambeth Park off Henry Lawson Drive, Picnic Point.		**7th: Padstow Park:** Ironbark Forest. Meet at Padstow Park, Banks Street, Padstow.

WHY NOT JOIN THE SOCIETY ?

The Bankstown Bushland Society is an incorporated association under the Associations Incorporation Act (NSW) 1984.

We are Bankstown's only incorporated association dedicated to protecting our City's environment.

The Society's objects are:

- To protect the environment of Bankstown
- To assist other persons in the protection of the environment in Bankstown
- To foster better community awareness of environmental issues
- To lobby through Government, commercial and other persons for the maintenance of a high quality of life through the progressive improvement of the environment

If you are concerned about the local environment, then consider joining our Society. As a member, you receive one year's subscription to this newsletter, and can participate as a voting member in the direction and decisions of the Society.

Yes, I wish to join the
Bankstown Bushland Society Inc:

Name:_____

Address:_____

Suburb:_____ Postcode_____

Telephone Number:_____

Membership fees
Family/Group - $20
Ordinary - $15
Concession - $10
"student/unwaged/pensioner"

Attached please find my payment of:

($ .00) _____
(amount in words)

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