



SOUTHERN TABLELANDS ECOSYSTEMS PARK – A REGIONAL

BOTANIC GARDEN, EDUCATION AND ECOSYSTEMS RECOVERY FOR THE SOUTHERN TABLELANDS

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MESSAGE FROM THE PRESIDENT – JUNE 2016

Dear STEPpers

Welcome to Winter in Canberra and a change of pace for STEP volunteers. The rain early in June was certainly beneficial, especially for the new plantings over in the GG Block (see item in this newsletter) and while the amount of rain in such a short time was unusual, there was only minor damage to established paths. The effect of this on some trees has yet to be demonstrated.

An inventory of plantings is being conducted, along with tree numbering (see David's article) and Jens is again tree measuring with some encouraging growth increases being noted.

I know we have many members who are unable to attend the Thursday working bees but I would encourage you to drop along to STEP some time and see the progress which has been made with paths and the healthy growth of the understorey species. When I first started with STEP in 2013, it was possible to see happy little workers in fluoro vests scatted up and down along the central garden. Now it is difficult to see the workers for the trees (and shrubs and grasses).

Our yearly seminar/discussion meeting will be held Thursday 28 July in the Green Room at the Village Centre. I would urge you to reserve this date so you can join us in our planning for the future development of what is becoming a highly regarded Regional Botanic Garden.

Judy Smith

Taking the next STEP at Forest 20

STEP Planning Workshop/Forum: Thursday 28 July, 9am–12noon

You are invited to attend the annual STEP planning workshop/forum on Thursday 28 July, 9 am–12 noon, in the Green Room at the Village Centre. It is a good time to review progress and plan for the next while. Stephen Alegria (Executive Manager NAC) will come for a short while to update us on NAC progress and plans for the future.

New horizons for STEP – Woodland adjacent to Forest 20

Wrapping around Forest 20, on the north side, is a patch of woodland that has been farmed for many years. However, it retains many mature trees and some understorey grasses and other native plants and as a whole it qualifies as an example of Yellow Box – Red Gum Grassy Woodland, an ecological community that is listed as critically endangered.

As part of the planning for the Molonglo development (starting at Coombs and Wright and ending eventually at William Hovel Drive and the Arboretum's Cork Oak forest) this 44 ha woodland is to be protected and managed to encourage recovery as part of the ACT's nature conservation estate.

STEP has had a long time interest in this land, in fact at one point in our history there was an ambitious proposal for STEP to manage it. Probably for the better and recognising that STEP has its hands quite full with Forest 20 and presenting it as the regional botanic garden for the southern tablelands, STEP's interest has evolved into a partnership role that can support a link between the botanic garden aspect of our endeavours and the education and woodland recovery potential of the woodland next door.

The recovery phase will last some years and will be under the overall control of the ACT Parks and Conservation Service in partnership with the Arboretum and community groups including STEP and Greening Australia. In May we were contacted by rangers from the parks service and advised about a plan to move tonnes of dead logs into the woodland. Dead wood has been removed over many years for firewood and to assist farming practices. It represents the loss of a major habitat element in woodlands as has been demonstrated in the research at Mulligans Flat Woodland Sanctuary. There, following introduction of dead wood, the biodiversity of insect fauna has increased dramatically and this in turn will support other parts of the food chain - birds, reptiles, fungi – and now introducing dead wood is standard practice throughout woodland nature reserves.

On Thursday 28 April, Richard Milner (Chief Ecologist with ACT Parks and Gardens) visited STEP to speak to us about work soon to commence on the adjacent woodland block. Places have been identified for 15x¼ hectare blocks in which to commence planting. In the tree belt, planting will focus on understorey species to create habitat for woodland birds. Spacing of blocks, 60–100 m apart as recommended by Veronica Doerr (CSIRO), should enable passage of small birds between blocks.



STEPpers at work planting in the woodland immediately adjacent to Forest 20 - just up from the gate.

Photo: Sue Genner

Greening Australia (GA) has been contracted by the parks service to plant trees and understorey plants in 18 areas of the woodland in an effort to kick-start recovery of the vegetation. On 19 May STEP planted over a hundred of these plants in a plot just west of Forest 20 under the general direction of GA's Jeni DeLandre. We will keep an eye on their progress and from time to time undertake maintenance weed control and generally keep an eye on this and other patches of plantings. Each planting will be fenced to keep out sheep, as there will need to be some grazing for bushfire fuel management and encouragement of natural regeneration.

We will also look for opportunities to link organised visits to Forest 20 with the story of conservation and woodland recovery next door. The Arboretum has indicated it will provide a stile across the fence separating the woodland from STEP.

David Shorthouse

It's a numbers game

There are about 540 tree holes designated in the Arboretum's pattern for Forest 20 (STEP). In these holes we planted our 16 species of eucalypt trees and each of these holes and trees was given a number and plotted on various maps.

The species of tree, its planting date and rate of growth is all being collated on the STEP data base. Jens with his team have just finished this years measuring. Where there was no tree planted or where the tree has died still retains its hole number.

We had to find a way to mark the hole/tree with its number. Initially (2009) the trees were decorated with a small aluminum tag with the number of the hole (or tree) scratched into it. These fluttered in the wind looking twinkly but the birds seemed to peck them off. Then we pushed a flat stake, previously used with the tree guards, into the soil just next to the tree. This had the number written on both sides using a marker pen (first black, then white). But the numbers have faded.



Photo: Lainie Shorthouse

So this year we have tried a new system. Large galvanised iron landscape nails (from Raymond's Men's Shed) have a flag of red cloth tape wrapped around the top end with the hole number written with enamel paint. We will see how these go but already the red is fading! The photo shows the red flag and stake numbers. You may notice a red flag in the middle of nowhere, please don't remove it, it's a hole marker, the mowers will just go over the top.

All these attempts are done with very little expenditure. If we had lots of money we could get engraved, weather proof, bird and kangaroo proof numbers but at the moment this will have to do.

The task of making cheap, clear, readable from a distance names for understorey species is another problem – yet to be solved!

Lainie Shorthouse

Tree measuring

Jens Svensson conducted the annual tree measuring during June and into July with the able assistance of a number of other helpful STEPPers during the Thursday working parties. Some of the Eucalypts are now above 8.5 metres and hence beyond the extension limit of the usual 'measuring stick'.

So Jens was using a clinometer (measuring the angle to the top of the tree) to calculate the height of each tree over the 8.5 m limit. The adjacent photo shows Jens with clinometer in hand, measuring tape being held by Raymond (Jack is off-camera at the other end of the tape, at the base of the pertinent tree) and Elizabeth dutifully recording the detail.



Photo: Sue Genner

Visit from St Joseph's Primary School, Boorowa

On 24 June, 17 year 5/6 students from St Joseph's primary school in Boorowa visited the arboretum as part of a day trip to several national institutions. Judy Smith, Lainie and David Shorthouse assisted the (enthusiastic) teacher and Heather Tregoning (NAC) in learning a little about eucalypts, and plant growth forms. It was a very cold afternoon and the visit was brief, but the students seemed to enjoy it, particularly jumping on the rocks.



David Shorthouse addressing students in The Clearing.

Photo: Lainie Shorthouse

Bush tucker trail

In late May the Arboretum's operations manager, Scott Saddler approached STEP with a proposal to establish a bush tucker trail to be located within Forest 20. The project would be funded by the ACT government's program of actions for reconciliation and involve the ACT's indigenous community in its planning, planting and maintenance. While there is much detailed planning and discussion to follow, the general location for the bush tucker trail is expected to be in the northern part of Forest 20, downslope of The Clearing and between the main gravel path and the short access path to The Clearing.

The STEP committee considered the proposal and decided to enthusiastically support further discussions on ways to implement it. The proposal has the potential to make a significant contribution to one of STEP's over-arching objectives: *to promote understanding of the natural environment as the foundation of Australia's social and cultural (including Aboriginal) heritage.*

The STEP committee's initial response to the Arboretum indicated a predisposition to keep the plantings to southern tablelands species (with the added message that these are species that would have allowed local aboriginal people to survive here), to link the trail with both the adjacent woodland and the area next to The Clearing where we have already established examples of food and fibre plants. We said that we are very open to indigenous groups to using Forest 20 for activities related to the regional botanic garden purpose. We also viewed 'bush tucker' as a general term that includes plants for food, fibre, medicinal and other purposes.

STEP anticipates joining a steering committee/group for the project and through this to opening a dialogue on the planning and design of the trail, and in due course planting and developing other elements of the project. We also said that we would like to ensure that the project is consistent with our master plan for the understorey plantings in Forest 20 as this guides us in all our work there.

New Garden for the Events Terrace – Ben Walcott

Ben Walcott, President of the Australian Native Garden Society joined the Thursday working party's morning tea, on a very grey winter's day, to discuss plans for a proposed new garden for the Events Terrace at the Arboretum. It is intended that the new garden will showcase native plants from across Australia.



Ben Walcott chatting with David Shorthouse (centre foreground) and Judy Smith (back to camera). Steve Alegria (Executive Manager, NAC) in background chatting with Max Bourke and Bill Handke.

Photo: Sue Genner

STEP website

Over the last few months STEP has been part of an ANU student learning project in a course designed to develop skills in working with clients on a real-life project. This came about through the good offices of STEPper Richard Jones who is a course adviser. Richard submitted our proposal:

STEP, the Southern Tablelands Ecosystems Park is a forest in the National Arboretum developed and maintained entirely by local volunteers. It contains 16 local types of eucalypt and a large number of under-story plants. STEP has a strong commitment to education and as part of its development has built an outdoor education area.

Though STEP has a website <http://step.asn.au/>; this has become unmaintainable by the membership. It forms a major part of the outreach of STEP. We would like to build a new web-site that meets our needs, which include: ease of update and maintenance by authorised members; scope for comments and blogs; frequent update, there is a steady stream of photos of what is in flower; scope to incorporate innovative elements (e.g., fly-throughs using the technology developed in TechLauncher last year).

Detailed requirements would be gathered in consultation with a small group of STEP members, who will keep in touch with progress. An innovative approach will be welcomed.

Andy Russell, Jennie Widdowson and Keith Pantlin (our web-master) formed the small group who worked with the students and a couple of visits on a Thursday morning ensured more STEPpers were involved. On 3 June the students presented their work in association with a class assessment of the STEP project and 3 other similar real-life projects.

In feedback to the students and course organiser, Keith Pantlin commented that "STEP should be very grateful to Cameron and his team for re-designing the website. I think they have done well and are nearly ready to hand over the website to us, once the basic content is there, and the links etc are all working".

There is a little more work to be done by the students and a manual for us as the client on how to use and manage the web-site, however the important thing for us is that when the website goes 'live' at the end of the year, it will be more stable and more easily managed by STEP.

As we undertook this project, STEP recognised the value of the STEP website since its establishment in 2009. We are very grateful to Rainer Wilton for his support of STEP in this way – thank you.

David Shorthouse

ARTICLE: *Leratiomyces ceres* a woodchip mulch fungus in Forest 20

by Jack Simpson

When a new bed of understorey plants is being established in Forest 20, or shortly thereafter, the beds are prepared by removing grasses and other vegetation from the area, laying down a layer of moistened newspaper and magazines, and then covering the site with a layer of wood chips about 100 mm deep. The woodchips are often sourced from woody amenity plants and may be from diverse kinds of trees. At present most of the woodchip in Forest 20 is of *Pinus radiata*.

During the past three decades mulching with woodchips has become a common landscaping practice in many parts of the world. The advantages of mulching include better weed management, reduced evaporation from the soil, reduced soil erosion, and an attractive appearance. Newspapers are quickly decomposed by diverse saprotrophic cellulolytic microfungi when in contact with moist soil. The rich microbiological activity in the mulch in Forest 20 also supports a large population of curl grubs which in turn are a favoured food of foxes. The abundant scratchings in, and disturbance of, the mulch shows how fond the foxes are of this delicacy.

Woodchip mulch is a specialized and artificial habitat for fungi. Yet an interesting suite of larger fungi has adapted to this new habitat. One of these is *Leratiomyces ceres* (Cooke & Masse) Spooner & Bridge, a species believed to have originated in Australia but now known from Europe, New Zealand, North America, and the UK; in almost all instances on woodchip mulch. How it has been dispersed and distributed is not known. In Australia and other parts of the world it was commonly known as *Stropharia aurantiaca*. That name was misapplied and hence invalid. That taxonomic mistake is but one of many that has afflicted this handsome toadstool. This fungus has been variously described as a species of *Agaricus*, *Hypholoma*, *Naematoloma*, *Psilocybe*, *Stropharia* and *Stropholoma* before the present and hopefully final disposition in *Leratiomyces*.



Leratiomyces ceres in understory mulch in Forest 20 – July 2016. Photo: Sue Genner

Leratiomyces ceres is not restricted to woodchip mulch in Australia, but occurs also on fallen wood, leaf litter, and even cow dung. The fungus has been observed in periods of wet weather forming fruiting-bodies (basidiomata) on woodchip mulch in various beds in Forest 20 including F and G. The fruiting-bodies are quite distinctive with a smooth cap, up to 40 mm in diameter, in various tints of reddish-brown to apricot-orange, gills becoming purplish-brown, and stipe to 100 mm long, with

red-brown tints, with white rhizomorphs (thick strands of hyphae) at the base. The basidiospores are subellipsoid, smooth, thick-walled and blackish-brown.

The genus *Leratiomyces* was described in 2008 to include 8 species of fungi from Australia, New Caledonia and New Zealand. These fungi were formerly included in the genera *Le Ratia*, *Stropharia* or *Weraroa*. The genus is defined on molecular not morphological characters. The basidiomata may be agaricoid, with a stipe and actively discharged basidiospores, or sequestrate without a stipe and usually immersed in soil or litter, and with sessile basidiospores. In the latter case the spores are usually dispersed by the basidiomes being eaten by small mammals or marsupials and dispersed in the faecal pellets. In New Zealand the sequestrate species are called 'tobacco-pouch' fungi. The genus *Leratiomyces* is a member of the family Strophariaceae.

Leratiomyces cereus may occur in very large numbers on woodchip mulch. It is not an edible species. However, it seems to have a strong appeal to people who feel a compulsion to kick toadstools.

Culinary use of Australian caraway

by Jack Simpson

A casually heard remark in Forest 20 earlier this year raised the question in my mind can Australian caraway be used for culinary purposes? *Oreomyrrhis eriopoda* (DC.) J.D.Hook. grows quite vigorously in Forest 20. Like European caraway it is a member of the family Apiaceae to which carrots, celery and parsnips belong. Then a month or so ago I was asked if seeds of Australian caraway can be used as a substitute for caraway seeds in cooking. I approached various people who I thought might know but with no positive answer. A search on the web yielded one site of interest: <http://www.understorey-network.org.au/municipalities.html?species=Oreomyrrhis%20eriopoda>

According to this website Australian caraway has various culinary uses. The thick taproot can be cooked and eaten like parsnip, if you like that unlovely vegetable. The aromatic leaves and seeds can be used to flavour food.

Results of some user tests would be of great interest.

Editor's note:

Canberra Nature Map gives a list of sightings of *Oreomyrrhis eriopoda*. At time of publication it has been recorded at:

- Black Mountain
- Bungendore, NSW
- Googong, NSW
- Kowen
- Mulligans Flat
- Namadgi National Park
- Rob Roy Range
- Southern Tablelands Ecosystem Park
- The Pinnacle
- Tuross, NSW.

Use search option at : <http://canberranaturemap.org>

Coming event of interest

AGHS Conference: The scientist in the garden

The Australian Garden History Society's Annual Conference is being held in Canberra, 14-16 October 2016. The theme: "*The Scientist in the Garden*" has been chosen due to Canberra's strong scientific approaches to all forms of gardening since its founding. The Conference will celebrate the historic role of the scientist in helping Australian gardeners adapt to and appreciate our unique growing conditions and wonderful flora. A day and a half of lectures cover a wide range of topics.

The garden visits will include Government House, the new National Arboretum Canberra, and a selection of historic rural gardens in the area surrounding Canberra. Pre and Post Conference Tours include visits to Horse Island at Bodalla, the Old Haxstead Homestead and Arboretum at Tilba, and Thubbal on the Murrumbidgee River between Bermagui and Tathra.

See www.gardenhistorysociety.org.au for details.

Tax deductible donations to STEP

Members and friends are encouraged to donate to STEP for which they can also receive a tax deduction. This can be done through the Friends of the Arboretum website, please specify the STEP option. <https://www.arboretumcanberra.org.au/support-us/donate>

Apologies for errors in the previous newsletter

1. Sincere apologies I misspelled Jens' name. It should have been: Jens Svensson.
2. *Eucalyptus obliqua* was incorrectly (oblique) spelt in the first paragraph, under the heading 'Max steps down as editor'.

Editor, Sue Genner.



'Arc en ciel sur STEP.' Photo by Max Bourke

Poem by Judy Smith

Winter tree

Behold the beauty of the winter tree
Upright and proud it stands and says
'Unclothed" here I am
This is me.