



STEP NEWSLETTER DECEMBER 2022



The entrance to Forest 20 showing the ramp and STEP banner. Notable is the gap in the tree line where a number of *Eucalyptus macrorhyncha* Red Stringybarks have been lost as a result of excessively wet conditions. Photo Andy R

From the President

This will be the last report I will write as President of STEP. At our AGM Thursday, 15 December, I stood down from this position and I am very happy to report that Jane Cottee is our new President. Jane comes with excellent credentials in both administration and horticulture, and I hope that she enjoys the challenges and opportunities presented by this role as much as I did.

Judy Smith

Revisiting a Thankyou from a few years ago

To
the sowers and mowers,
the weeders and seeders,
the bakers and fakers (I made these Tim Tams this morning),
the sweepers and reapers,
the mulchers and vultures (I only came for morning tea),
the cleaners and leaners (resting on a rake till the next load of mulch arrives),
the planters and banterers (Ross your puns are forgiven),
the trundlers and grumblers (why is the mulch always at the furthest point from where it is needed),
the oilers and (old) boilers (most of us?),
the planners (DS) and man-ers (and women-ers),
the water-ers and I-oughta-ers,
the mudlarks and skylarks
the diggers and riggers,
the meeters and greeters,
the drain brains and the brain drains
Thank you so much every last one
Time spent at STEP has been lots of fun!

Best wishes for Christmas and 2023

Judy and Mike

STEP AGM

The STEP Annual General Meeting for 2022 was held on Thursday December 15th at 10am at the STEP shed. Below are the elected office bearers. *(Photo Jane Cottee and Judy Smith pictured recently)*

President	Jane Cottee
Vice President	David Shorthouse
Secretary	Elizabeth Minchin
Treasurer	Ross Dalton
Membership & Publications	Andy Russell



General Committee Members Terry Murphy, Bill Handke, Digby Gascoine, Jennie Widdowson, Judy Smith, and Hugh Milloy

Visit from Singapore Delegation

STEP volunteers Bill Handke and Jenny Widdowson joined me in guiding delegates from National Parks Singapore. The visitors were led by Leong Chee Chiew, Executive Director of National Parks Singapore, Ryan Lee, Group Director of the National Biodiversity Centre, Yin Xin Tok Senior Manager and Yi Shuen Yeoh Manager, also of the National Biodiversity Centre. Their specific interest was in the ways community groups can promote and support biodiversity. They were very interested in what we have achieved at STEP and appreciated the layout of the Wattle Walk to allow visitors to understand the diversity of this species.



Below Bill Handke talking with Dr Leong Chee Chiew

Adaptations

While the continuing wet weather is posing some difficulties for the management of STEP, we are adapting and trialling new ideas. Replacement planting of Acacias along the top side of Forest 20 was into soil augmented with coarse sand and gravel. This method has now been extended to replacement planting of *Eucalyptus macrorhyncha* in places where many of this species died due to excess water. In the Central Garden, Block D, we have planted a considerable number of *Bursaria spinosa* alongside *Gynatrix sp.* Their location is under Eucalypts usually found in higher and wetter localities of the Southern Tablelands. David Shorthouse had observed thick growth of these species together at Tidbinbilla and noted the excellent habitat these bushes provided for small birds.

Weeds, weeds, and more weeds

Tasks such as weeding have kept us very busy. One Thursday, most volunteers worked in the Bush Tucker Garden, making it weed free (at least for a short time.) Over the past month, our attention has been on removing St John's Wort. It is relatively easy task in very wet conditions as the wet ground facilitates the removal of the tap root. As this weed is very prolific and conditions have dried out somewhat, there are still many more plants to be eradicated.

The recent purchase of a battery powered brush cutter will be very useful in the removal of stubborn and tough unwanted plants. Thank Terry Murphy for arranging this and declaring war on "Dirty Dora" alias Umbrella Sedge, *Cyperus eragrostis*.



It is not an oil spill

The local landscapes are exceptionally wet at present and some interesting things are happening. Springs are appearing on hillsides and low-lying areas are saturated. There's also been plenty of soil erosion and deposition of sediment. These things are fairly easy to see but some other landscape processes are less obvious, especially those relating to soil chemistry and microbiology. Some of these processes are producing some localised and brightly coloured patches that look like small oil spills. Don't worry, they are not.

Different iron minerals impart most of the colour in our soils: for example, hematite is usually red, goethite is more brown, and lepidocrocite has a characteristic yellowish-brown colour. These minerals are very stable in aerated soils. However, whenever there is a combination of soil organic matter, iron-reducing bacteria, waterlogging and poor aeration, there is a fair chance that naturally occurring iron will be converted to a soluble form and move with water. This is widespread, especially around the wetter parts of the Arboretum and the Cork Plantation.

The soluble iron precipitates back to an insoluble form of iron whenever the water encounters more oxygen and iron oxidising bacteria. This is happening at present around the edges of boggy swamps, along drainage lines and deeper down in the soil.

The precipitated iron usually appears as a slimy rust coloured gel. It can also form an iridescent sheen or oily-looking slick on the water's surface called a biofilm. While the chemistry is incredibly complex, the iron mineral at this stage is probably some form of ferrihydrite.

The precipitated iron often looks like oil or petrol oozing from the soil. However, it is natural and fairly harmless. It's easy to test whether the slick on the water's surface is precipitated iron. Just poke it with a stick – if it breaks up in scale like pieces, then it is precipitated iron. If it adheres to the stick or ripples in the water, then it is likely to be oil.

When the landscape dries out, most of the iron will turn into a rusty coloured powder on the surface of the soil.

Neil McKenzie

Soil Scientist ex CSIRO



The pencil test

the oil like slick, Photos Neil McKenzie

Drainage works

During La Nina soaks and springs have appeared all over Forest 20 , with a particularly vigorous one just above the ephemeral pond. Seepage across and under the intervening path threatened its integrity, so Bill, Terry and Digby set about installing 15 metres or more of collector trenches and several under-path drains. With assistance from the NAC's Kieran the trenches were lined with geotech cloth and filled with very coarse aggregate over plastic agricultural drainpipe. Initial flows through the new system were very promising, but within several weeks the cloth rather surprisingly clogged up and it was necessary to trim a strip off on the high side of each trench. The modification apparently has worked and recently the path, while still damp in the vicinity, has firmed up - or maybe it just stopped raining as much.

Text by Digby Gascoine, Photos Andy Russell



Kieran and Terry with Bill in the distance



Terry and Digby, Below left wet path section



- News from Forest 20.

Remediation and repair are the key words at Forest 20. Over a long string of Working Bees STEPpers have been working consistently and in a very determined way to restore Forest 20 to its former glory!

Major work is underway to repair gravel paths that have been washed out by persistent and at times heavy rains on already saturated soil. As 2022 turns into 2023 we are preparing for cut-off drainage work upslope of the Bush Tucker Garden and Grasses Gallery, to be followed by repair of gravel paths in these important parts of Forest 20.

In preparation for this, STEPpers and NAC Horticultural staff have filled the largest eroded channel with rocks provided by NAC. The Arboretum has arranged for Iconic Trails to undertake the path and swale work in early January. Access to The Clearing will also be repaired, as will other parts of the path network. STEP is very grateful to the NAC for working with us to prepare plans and for arranging for Iconic Trails to undertake the works.

Left Erosion before work started



Right repairs progressing

Loss Of Snow Gums

The other significant, but sad news from Forest 20 is recording of the death of most of our *Eucalyptus pauciflora* (Snow Gum) trees. This species had grown well over the last ten years reflecting their natural landscape position on the lower valley slopes, but it appears that the prolonged saturation of the soils has proved too much, and the trees have died in the last 4-6 weeks.



This photo shows the row of Eucalyptus pauciflora Snow Gums that have died, one tree in the distance that looks well is a Eucalyptus stellulata Black Sallee .Photo Andy Russell

Text by David Shorthouse, photos on page 6 Lainie Shorthouse

Wildlife at Forest 20



This Eastern Blue-tongue Lizard was seen emerging from the stonework that forms part of the low retaining wall near where the welcome to Forest 20 display sign is, close to our entrance.

This Eastern Brown Snake *Pseudonaja textilis* was seen in similar place to the Blue-tongue Lizard a few days later. We have not seen the lizard since then. Brown snakes have been known to eat fully grown Blue-tongue Lizards. While it has been reported that Blue Tongue Lizards have evolved a blood component that prevents their blood clotting when exposed to Red-bellied black Snake venom according to Associate Professor Bryan Fry of the University of Queensland.

Text Andy Russell Photos by Bill Handke



Some Mid-December photos from Forest 20



Lotus Australis Austral Trefoil in the Parade of Peas.



Caesia calliantha Blue Grass Lily in the Bush Tucker Garden



Callistemon sieberi, River Bottlebrush



Tricoryne elatior Yellow Rush-lily All photos by Andy Russell



Prostanthera lasianthos Victorian Christmas Bush



Leptospermum micromyrtus Alpine Teatree

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