



STEP Newsletter September 2017

STEP website www.step.asn.au

From the President

Foggy and frosty mornings have not diminished the enthusiasm of the volunteers at STEP. Progress has been made with laying newspaper and mulch in the corner areas where it is difficult for the Arboretum staff to reach with ride-on mowers. A special mention should be made here of Jenny and the staff at the general store at Hall (Daughters at Hall) who provide an excellent supply of unsold newspapers which are easy to unfold into the wheelbarrows of water and easy then to place on the ground. Daughters at Hall are also appreciative of our efforts in re-using the newspapers as it means they make fewer calls to empty their dumpster.



8.30am



Of particular interest in this Newsletter is an article from Heather Tregoning, Education Officer for NAC, on the way she has incorporated STEP into a Forest Adventure party experience for children.

Jens and his team are again busy with the measuring of trees (see the article by Jenny Campbell on the new take on this activity.)

9.30am

If you are down at STEP, you should take the time to have a look at the GG Block which we planted with the assistance of Greening Australia. The trees and shrubs are looking very healthy.

Also worth a look is the new sign Bill and his team have installed for the She-oak nook. The art work in reproducing the shape and texture of the Casuarina fruits and phyllodes is beautifully done. Congratulations and many thanks to HDM (see article by Bill Handke).

Judy Smith President



10.30am

Honour to Bill Handke

Congratulations to Bill Handke for his Medal of the Order of Australia award. This is a well-deserved recognition for the tireless work Bill does in a multitude of fields such as the Canberra Indian Myna Action Group (since 2006), significant contributions to kidney health and organ donation programs and volunteering at Mulligan's Flat and STEP.



Bill (right foreground) and other STEP members enjoy a cake to celebrate the occasion

How does the garden grow?

For the last few weeks, Jens has been busy measuring the height and girth of our trees.

He undertakes to do this yearly - also checking if there are any losses and/or insect damage.

This year Professor Kim Brown of the ANU has completed an aerial survey using a drone and photographing all of the Arboretum. Jens has offered him the STEP records of tree heights to calibrate records from the drone observation. It will be interesting to see if the computer program can distinguish the tops of the eucalypts as sometimes these are too open because of insect damage.

We are very grateful to Jens for undertaking this task. It is time-consuming and requires much patience and diligence. The untimely death and removal of some trees adds to the difficulty of recording the data. He has a team who help with the recording, so thank you all for the very valuable work that you do.

(Jenny Campbell)

Grant applications by STEP

In May we received a grant of \$500 from the Molonglo Catchment Group and EnviroAg Services of Bungendore to purchase hand held tools. The grant was awarded as part of their Small Grants Program for 2017. Our intention is to source new tools to improve the efficiency of site and soil preparation for new plantings and on-going maintenance. We thank the sponsors of this program as this will significantly increase in the efficiency and capacity of our current tools. Molonglo Catchment Group has asked us to provide information on our site and photos for their website. In the coming weeks we hope to purchase a range of new shovels, forks, secateurs and so on and will happily share the results of this grant with them.

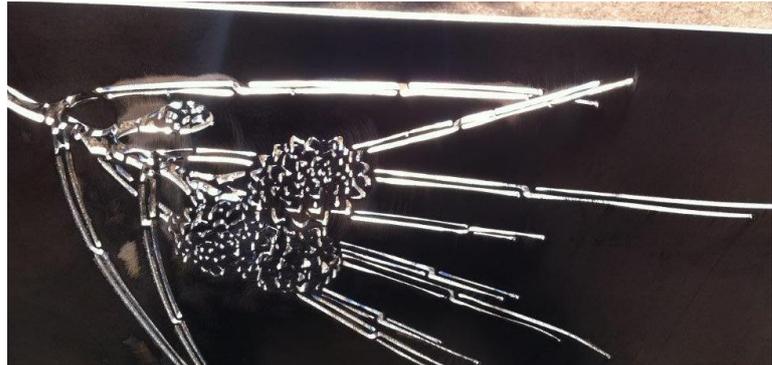
We have also applied to the Friends of Grasslands for \$1500 to assist us prepare and print a new brochure publicising STEP. We hope to hear the outcome of this application shortly. If successful, this funding will enable us to better promote information about grasses of the Southern Tablelands to STEP visitors. Thanks very much to Ross Dalton and Max Bourke for their work in writing and submitting these applications for us.

Ross Dalton and Judy Smith

She-oak nook

A striking new corten steel sign, akin to that in the Clearing, will help turn the She-oak nook into a new focal point in the STEP Garden. The sign, designed and produced by HDM in Hume is a work of art. Paul Vatchenko of HDM has done a brilliant job in designing the sign, which includes a laser-cut image of a casuarina branch with nuts. When you see it you will be amazed at both Paul's skill in creating the design and in the way it has been laser cut. The sign will over time rust over and will be as eye-catching as the one in the Clearing – perhaps even more so.

Our thanks to Paul for a wonderful job. And our thanks also to Stephen Honan of HDM for again agreeing to HDM being a major STEP corporate sponsor by providing their sign at a significant discounted cost.



Paul Vatchenko with the sign designed and constructed by HDM Metal

Kuranga nursery

On our frequent visits to the Dandenongs in Victoria where our son and his family live, David and I make every excuse to visit this wonderful nursery situated at Mt Evelyn.

Stocking only Australian native plants it has the most well organised display of species, arranging them according to size or growth habit. Then on easily accessible racks alphabetically with a short description. It has special areas for bush food, tube stock, ferns.

On entering the impressive building visitors pass through a tempting gift and book shop and go through to a colourful changing display of flowering plants in pots. It makes you want to go mad purchasing. There are always helpful knowledgeable people on hand too. We have bought some difficult to find plants for STEP there although we prefer to support our local growers.

I challenge anyone to not buy something and to not indulge in the best vanilla slice in their wonderful cafe. More info at kuranga.com.au

Lainie Shorthouse

GG – Growth and more Growth

Plantings at the GG Block just over the fence and up the hill from our shed are looking very healthy. About two months ago, we started to remove the tree guards from plants which had grown so much they were poking out the top. At the same time, we weeded around the young trees so they would be visible and not likely to be inadvertently trodden on or whopper snipped. Since that first step, GA volunteers have come in and snipped back weeds and grass for about a metre around each plant. In addition, another 32 guards have now been removed. A careful look at the logs on the block show many “critters” have found a new home. These are all good signs for the future of this great venture.



New sign at entrance to Forest 20

Lainie Shorthouse stands beside the old sign which is now replaced by the updated sign shown below.



On the right Mariana Rollgejser, graphic designer and David Shorthouse

Membership renewals are now due

Please note that membership fees are now due for the 2017-2018 year. The individual or family membership fee is \$20.00. Payment may be made direct to the STEP bank account, the BSB number is 313-140 and account number 12067564 Please identify your payment. Alternately payment may be made by cheque payable to STEP Inc and posted to the Treasurer, STEP, PO Box 440, Jamison Centre ACT 2614. The Membership Officer advises that receipts are written and a scan of these can be provided by email. If you would like confirmation of your membership status email Andy at membership@STEP.asn.au

Update on Grasses Brochure

As mentioned earlier STEP has applied for a grant from Friends of Grasslands to assist us to produce a Grasses brochure. Michael Bedingfield has offered a selection of his line drawing for this project which is greatly appreciated. Rainer Rehwinkel, Max Bourke and Andy Russell are working on the design of the brochure.

Forest Adventure.

In 2016 the Arboretum launched two different birthday party packages, Kite parties and the Himalayan Adventure party. The kite parties have proven to be very popular, and while they were initially slow, the Himalayan adventure have really picked up with families looking for active outdoor, options. After delivering a number of these parties, some challenges began to regularly emerge. It became apparent that the Adventure option was difficult for younger children as it involved reading clues and walking to the cedars back within a set timeframe. It was also a party that we could not run in hot weather as it was too taxing for the children and presenters. An alternative was needed that would be more flexible with the time, suit a mixed aged group and include the non-readers as well as be less strenuous in the heat.

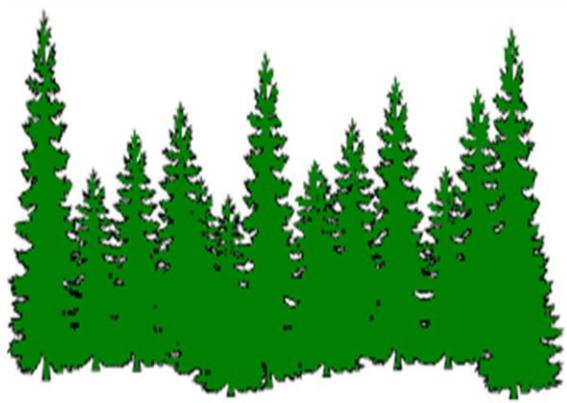


While parties might seem like a trivial activity – research has shown the importance of connecting children with nature for their development. Nature play is a growing movement! Children who have positive and regular activities and experiences in natural environments will be more likely to grow up to become environmentally conscious adults.

Forest Adventure

Clue card



There are ten insects hidden in the trees beside the paths. Can you find them all? Stamp the box beside the matching picture.



Using the STEP forest as the setting and focus for party activities is ideal due to the proximity to the Village Centre, the established infrastructure and pathways, as well as being able to manage activities in the heat. The major challenge was to ensure that any activity undertaken in the forest would have minimal impact on the plants and garden beds. To manage this, the presenter facilitates a discussion with the children about respecting the garden, and what the appropriate behaviour would be to ensure that the gardens are not walked on and trees are not accidentally damaged. The parents hear this discussion, and have been on hand to assist with the activities and the management of the children.

Four activities have been developed and trialled with three parties ranging from a group of pre-schoolers aged four, to a party mainly made up of ten-year-old girls. The number of children attending the party is usually 15 and has a strict cut off at 20. They are usually accompanied by a number of adults and often younger or older siblings. The younger the age group of the children, the more parents will stay and assist.

The first activity leads the children from the Village Centre down to the Clearing by using a trail of orange paper acorns tied to the Mesa oaks. The children collect them on the way. They are spaced so that you can see the next one clearly, and they are tied at a height easy for the children to reach.

The main educational focus of the party in STEP is around insects. The children are all given a clue card with insect pictures on it. There are ten corresponding picture tags with orienteering punches hanging off trees throughout STEP. All of the tagged trees are next to pathways, so children do not need to venture off the paths to find them. This is about managing the group to ensure children do not run over the garden beds. As they find each tag, they use the orienteering punch to stamp in the box next to the corresponding picture on their card. The party can be tailored for different age groups by changing the difficulty of the hiding places and how far apart they are hidden.

When the group is done, we talk about the insects on the cards - what they are, which ones are beneficial and which ones are pests. For the preschool children, just being able to identify and name the insects can be enough. The children then get magnifying glasses to look for and examine insects, or evidence of insect activities in the trees and the grass. The overarching theme is about ecosystems and food webs.

The final activity is a game in the Mesa Oaks on the way back to the Terrace room where they have their food.

It is likely that there will be an insect craft activity added so the children have a chance to be creative, and have something to take home with them. This will be done in the Terrace room at the conclusion of all the activities.

This has been a great opportunity to introduce the STEP forest to a new demographic. It has been wonderful hearing the positive comments from the parents and children about the forest and the work that's been done in STEP. The parties continue to grow and evolve so as STEP develops and changes, the activities will continue to adapt and change.

Heather Tregoning, Education Officer NAC

Annual statistics for STEPper working bees.

Jennie Widdowson has analysed the available data from our signing -in book and reports the following statistics for the past financial year July 2016-June 2017

The total number of working bee days was 49. There were 31 unique volunteer STEPpers over the year.

Total number of STEPpers attending for working bees: 738

The mean number of volunteers per working bee: 15 Total hours volunteered per working bee: 45

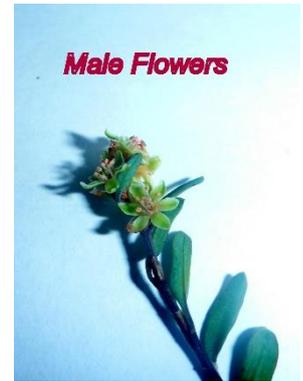
Total hours volunteered for the year: 2205. This is about the same as 2015-16, and is about equivalent to one full-time person. An additional 50 hours was worked by volunteers on days other than working bees (weed control, plant labels, etc), making a total of 2255 hrs for the year.

This does not include STEPpers guiding walks, or the time given for open days and special events.

Thank you Jennie! and well done to all STEPpers!

The Muehlenbeckia, the Magpie Lark & the Midge

Lainie has been propagating the Tuggeranong Lignum, *Muehlenbeckia tuggeranong* by layering the specimen she has in her garden. She gave us one of the plants in 2014 and we put it in a pot when we were living in Aranda. We brought the plant with us to our ninth-floor balcony when we moved as it seemed to be thriving, as much as that species can appear to be thriving; it is not a robust plant. It was described in the recovery document as 'a sprawling loose tangled mound of wiry stems, growing to 1 m high and 1-2 m across'. The species is a member of the *Polygonaceae* family.



All plants have been grown clonally, as so far no viable seed has set on any plants. There were only seven plants found originally and the species was listed as endangered under Commonwealth legislation in 1998. There were originally six males and one female plant. It seems that some plants have both male and female plants. Ours had male flowers with only occasional female flowers.

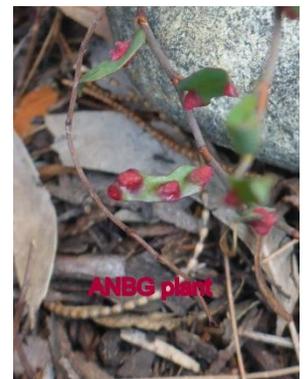
We have watched with interest the wildlife that comes to visit our balcony. Not all of them come to the south-west balcony where we have put the plants. We have recorded multiple species of beetles, spiders, moths, grasshoppers and flies as well as some ants. The birds who land on the balconies are fewer but have included Wood Duck, Crimson Rosella, Magpie Lark, and Magpie and they usually arrive one bird at a time.



The bird that surprised me most was the Magpie Lark. It must have been in May that I saw it for the first time. When it arrived, it landed on the Muehlenbeckia pot, pecking all over the plant and did not put its head up until it had finished. I have no idea what the bird was after. At that stage, the plant still had a few flowers left on it.

I went to the Botanic Gardens in May and for the first time I saw the Tuggeranong Lignum in the Threatened Species section. I do not know how I have avoided seeing it before. What was significant about the plants was the bright red galls on the leaves all over the plant.

The Royal Botanic Garden, NSW reported that a mite of the family *Eriophyidae* is responsible for the galls and that the galls seem to persist on cultivated plants. I put the Botanic Gardens photo up on Canberra Nature Map and it was identified as the Muehlenbeckia Gall Mite, *Eriophyes lambi*.



I have not seen galls on the leaves of our plant, but there is a red growth inside one of the female flowers that looks as if it could be a gall. Other images of Muehlenbeckia species on the web also have a 'red growth' in the mouth of the flower so I am not sure what I am seeing. I checked the two plants at STEP and I could not see any galls on those plants. The plant at the Botanic Gardens looked a much more mature plant and had spread to a metre or so. I wonder if the midge will find its way to the STEP plants. I also wonder what role the Magpie Lark had to play, if any; the pollinator of the Tuggeranong Muehlenbeckia is still unknown.

I felt that our plant had a surprising number of flowers but as mentioned previously they were mostly male. Flowering was well under way by the end of November and a few flowers remained at the beginning of May. I will have a look at all the plants during the flowering season to see what else I can discover.

Janet Russell

Traveller's Tales, the Kimberley coast, history and botany

A trip on the Kimberley coast gives the viewer a chance to see some interesting historical sites that are a bit off the beaten (vehicle) track.

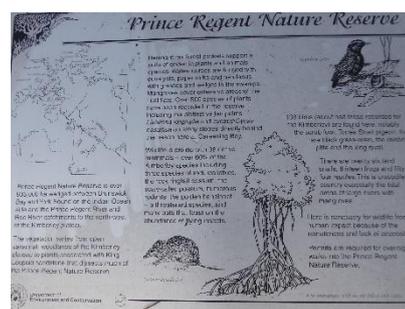
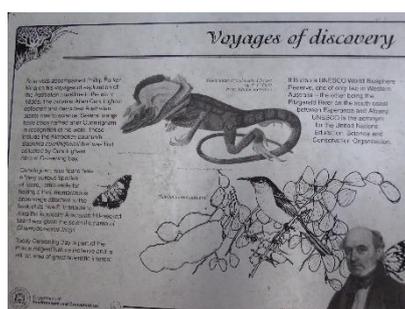
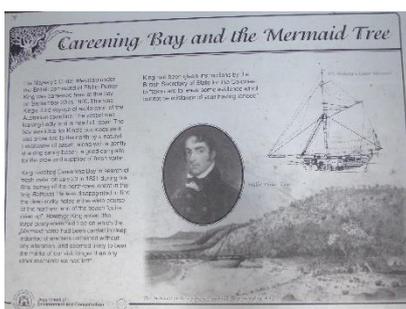
One such place is Careening Bay. The 84-ton cutter the *Mermaid* skippered by Lieutenant Phillip Parker King was on his third voyage surveying the north-west coast, this time between Admiralty Gulf and Brunswick Sound. King had been given instructions by the British Secretary of State to leave evidence of his landings. In September of 1820 the ship began to leak badly and was pulled ashore at this site for 10 days of repairs (which were only of limited success). Nearly 200 years later the carvings on the Boab tree is still easily read.

Scientists accompanying this voyage included the well-known botanist Alan Cunningham. Several plants are named after him. These include the Kimberley Bauhinia or Jigal Tree *Bauhinia cunninghamii*, a deciduous tree growing to six metres in height with attractive pink-red flowers that is found in the Kimberley NT and into Queensland. At this site Cunningham was also to find a curious species of lizard that we know today as the Frill-necked Lizard *Chlamydosaurus kingii* named after his captain. King is shown on the first panel below and Cunningham on the second one.



Mermaid (Boab) tree, Adansonia gregorii, right carved HMC (His Majesties' Cutter) Mermaid 1820

At this site, there is a raised walkway to protect the surrounds of the tree. There are also three panels shown below



that detail the voyages of Phillip Parker King, the Careening Bay incident and information on the Prince Regent Reserve now a National Park.

To establish the National Park extensive negotiations took place to rescind a 45-year-old agreement that had given Rio Tinto the right to mine bauxite and for Alcoa to refine aluminium on the Mitchell Plateau. This allowed the Prince Regent River district to be declared a National Park, Australia's largest and Western Australia's 99th in 2015.



Where we landed to view the Mermaid Tree, at the top of the beach growing in deep sand was this plant, *Ptilotus exaltatus* known as the Pink mulla mulla. I have this plant growing on my Canberra balcony!

The vegetation of the National Park varies from open savannah woodland to plants associated with the King Leopold sandstone. There are remnant rain forest pockets that support endemic species. The rivers and watercourses are fringed with eucalypts, paperbarks and pandanus. Mangroves cover extensive areas of tidal flats. On stony slopes, directly behind the beach at Careening Bay are the Fan Palms *Livistona loriphylla* and the cycad *Cycas basaltica*.

Wildlife is prolific with 60% of the Kimberley species present no doubt assisted by the remoteness and lack of accessibility of much of the National Park. Native mammals include three species of rock wallaby, the rock ring-tail possum, numerous rodents and the threatened golden bandicoot. One hundred and thirty-six bird species have been seen. These include the Torres Strait pigeon, the Black grass-wren, the Rainbow pitta and the King quail.

Another interesting site is the crash remains of a US Army Airforce DC3. On the 26th of February 1942, a US Douglas C-53 Skytrooper (DC-3) was flying from Perth to Darwin. The pilot who was flying at night overshot the Broome airport and continued flying another 650 Kilometres till running out of fuel, he made a “wheels up” landing in an open space near Vansittart Bay. There were four US servicemen crew and two Australian Army Reservists on board and all survived the crash landing. They distilled sea water using pipes from their plane and were rescued by a Qantas Flying boat the “Corinthian” on March the first. Japanese reconnaissance aircraft flew over their crash site while the survivors were waiting, hoping to be rescued. Two days later Broome was bombed by the Japanese. We only walked less than a kilometre to reach this site from our landing.



Left, the aircraft as seen earlier this year. Right, a view of the fuselage interior.

Next page, some plants seen close to the crash site.



Fringe lily possibly *Thysanotus chinensis*



A *Drosera*, an insectivorous plant.



Shells on the beach near where we came ashore



Unknown plant near the crash site as were the other two.

Andy Russell

Replacement flag for our She-Oak Nook entrance

STEP is pleased to announce that we have received a replacement flag for our She-Oak Nook entrance courtesy of Adam Jenson from FlagCentral.



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