NEWSLETTER



AUSTRALIAN PLANTS SOCIETY MITCHELL GROUP INC.

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Photo: J Petts Stringybark

Eucalyptus macrorhyncha - Red

to our newsletter both large and small are always very welcome! Please send contributions in by Monday May 6th.

wattlegum@southernphone.com.au or post to PO Box 381 Pyalong Vic 3521.

May rains fall soon & I'll be looking forward to catching up at our coming meetings.

Cheers until next month, Jeanine (3)

April 2019

Volume 6, Issue 3

Mitchell Diary Dates...

- MONDAY APRIL 15th, 7:30pm MEETING -**Guest Speaker: Peter Broughton -**Rare and unusual native plants
- MONDAY MAY 20th, 7:30pm MEETING -**Guest Speaker: David Laurie -Collection and** propagation of local native seed
- GARDEN VISIT & **AFTERNOON TEA -Wattle Gum Forest** Farm, Pyalong - Date to be advised
- SATURDAY OCT 19th, 9am-3pm SPRING **PLANT EXPO & SALE Kilmore Memorial** Hall, Sydney St, **Kilmore**
- MONDAY NOV 18th, 7:30pm MEETING -**Guest Speaker:** Glenda Lewin -WAMA: Wildlife Art **Museum of Australia**

April news...!

Hello and welcome to our April 2019 edition!

As I write this month, our dam is almost dry and I'm watching more and more birds come into the garden, attracted to the water dishes that we keep full close to the house. The garden is also suffering without much needed rains, but a couple of paddock trees have come to life and we have both Eucalyptus macrorhyncha - Red Stringybark, and Eucalyptus microcarpa - Grey Box, currently covered in flowers.

On the committee front, our guest speaker and activity list is still slowly being filled in. We now have speakers confirmed for April, May and November. Mike and I will be hosting a garden visit and afternoon tea for APS Mitchell here in Pyalong later this year. Most likely during one of the winter months, and a date and time will be set as soon as we have confirmation from some our other proposed guest speakers. More news to follow next month.

Our next newsletter will be issued on or within a few days of Monday May 13th. Contributions

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Hakeas anyone?...

The APS Melton and Bacchus Marsh Plant Sale is coming up on Saturday May 11 2019, 9am -1pm.

The following Hakea species will be available at the price of \$5 each or 5 for \$20:

archaeoides, auriculata, bucculenta, cycloptera, dohertyi, elliptica, erecta, francisiana Sandstone, invaginata, laurina, lissocarpha, macraeana minyma, multilineata cream, nodosa, obtusa, orthorhyncha, petiolaris, platysperma, plurinervia, pritzellii, prostrata. pycnoneura, rugosa, sericea, trifurcata & verrucosa.

For further details see flyer on page 8





Eucalyptus microcarpa - Grey Box. Branches are heavily laden with flowers; there are lots of bees around. This species is favoured for honey production. Also of note in the image are the buds with large conical caps. Photo: N Ryan

Gardens for Wildlife news...

We are still looking for one of our members or interested person to take on the role of G4W Coordinator. If someone is interested please contact Ian Julian on 0438270248 for more information and to discuss the role.

Norbert and Dawn will be delaying returning to promoting G4W and selling plants at the Wallan Market until May, when it is hoped autumn rains have arrived and planting conditions are improved.

In the meantime, the Autumn Wild Pollinator Count begins on April 14th and runs to April 21st. This is a great citizen science project to support and involves taking 10 minutes to watch flowers in a garden or local park etc. and record what you see. A copy of the Wild Pollinator Tally Sheet can be found at the back of this newsletter. For full details visit: https://wildpollinatorcount.com/count-pollinators/

MEETINGS ARE HELD ON THE 3rd MONDAY OF THE MONTH (February to November) unless otherwise advised

Commencing 7:30 pm in the John Taylor Room, Kilmore Library, Sydney Street, Kilmore Vic 3764

Entry \$2.00 Gold Coin

Guest Speaker

Door Prizes

Plant Sales

Fertilizer Sales (APS Mitchell Slow Release fertiliser \$5.00 per 500g)

Use of the APS Mitchell free Library (See Pauline)

Supper & Chat

VISITORS VERY WELCOME

Members & Visitors are encouraged to bring along exhibits for our "Show & Tell" Flower Specimen Table

Please label plants



April Meeting– Monday 15th 7:30pm...

Peter Broughton of Ironstone Park Nursery will be coming along to our April meeting to speak on rare and unusual native plants, along with changes in the nursery industry.

Peter and his wife Joan are members of APS Mitchell, and any who have attended one of our Annual Spring Plant Expos will be very familiar with Pete & Joan, as they have been long term supporters and a stall holder at our Spring Expo for many years.



Gastrolobium sericeum black form Photo: J Petts

Over a decade ago, Peter and Joan established a large and beautiful garden at their property in Pyalong that contained many interesting native plants, and also went on to establish a small specialist nursery at the site. A few years ago the property in Pyalong was sold and Peter and Joan relocated to Heathcote where they reestablished a garden and currently operate their nursery from.

Peter is an enthusiastic nurseryman with a love of native plants, particularly the rare and unusual. So do come along for what is sure to be an engaging presentation.

Visitors are always welcome at our meetings and the presentation will be followed by our Door Prize plant raffle, the flower specimen table (remember to bring something along from your garden) and conclude with supper & chat.

Memberships ...

We have had a glitch with the membership list sent to APS Victoria. This means our members have yet to receive the current issue of *Growing Australian*, however, our copies are on the way. For all membership enquiries, information and forms and please contact Christine Cram: Ph: 5793 8270 or Email to the attention of the Membership Officer at: aps.mitchell@gmail.com Membership information, forms and contact information can be found at our website: www.apsmitchell.org.au

March Meeting Report...Boronia megastigma & its essential oil

By Jeanine Petts

A lovely March evening once again saw excellent attendance numbers, and included the great pleasure of seeing Brian & Lorraine Weir return, who also brought along their plants for sale- an added bonus. This combined with Mike Williams' array of plants, made doubly sure there was plenty of opportunity to find and purchase some special plants.

As soon as we were all settled, Norbert called the meeting to order and opened with a little general group news regarding upcoming guest speakers: April will see Peter Broughton (of Ironstone Park Nursery) coming along to speak on changes in the nursery industry and rare and unusual native plants. For May, David Laurie has kindly agreed to present on the topic of local seed collection and propagation. Both should be very interesting presentations, and well worth coming along to hear.

With general news out of the way, Norbert welcomed Chris Long, current President of APS Victoria to the floor, thanking him for traveling all the way from Seaford to visit with us. During his presidency, Chris has been taking the time to visit each of the APS district groups, and offering to fill the role of guest speaker as part of the visit.

Chris has worked as a manager in chemistry at Glaxo for many years, at one point being involved with the Ego QV skin care products, along with other projects over his tenure.

Aside from work, Chris has also had a long interest in native plants including *Boronia*, and started the presentation by explaining that *Boronia megastigma* is famous for its scent, at least to those of us who can smell it!

At this point there was a brief technical delay with "projector issues". So, while the glitch was being dealt with, Chris explained that the role of APS Victoria President is many faceted, and that APS Victoria is run by real people, who are all volunteers. Chris has been taking the opportunity to get out, meet, talk to members, and offering to give a presentation, at the different district meetings he attends, means each committee has one less speaker to find.

Technical difficulties sorted, Chris returned to topic...

Approximately 10% of the population cannot smell the scent of *Boronia megastigma*, owing to a condition called "Specific Anosmia", whereby people are unable to perceive a specific odour. Another cause may also be olfactory fatigue, which, is the common experience of loss of sensitivity to an odour after a prolonged exposure.

Boronia megastigma has been famous for more than 100 years. In times before modern deodorants were developed and became popular, nosegays (a small floral bouquet worn to mask unpleasant odours) were widely used, and sprigs of the highly scented *Boronia* were a favoured choice. Cut flowers were originally harvested in the wild and with Boronia finding popularity, this led to the development of extensive cultivated commercial stands being established in Victoria.

Chris advised that his own experience of working with *Boronia megastigma* involved the essential oil, and was a fairly short, but intensive journey at the time. Continuing on, he then explained a little about essential oils, beginning by answering the question: What is an essential oil?

An "essential oil" is a volatile oil that is obtained from plants, which, possesses the scent and other properties of the plant. These oils have a range of applications and are used in pharmaceuticals, fragrances, and flavours, to name a few. Among some of the more widely used and recognised oils are: Ti-tree, lavender, peppermint, and orange blossom.

Science and industry have developed cheap synthetic fragrances and flavours, and anyone who has tasted pink Nesquik will understand how awful some of these can be. In comparison to a synthetic product, essential oils can be more expensive to produce, but provide a higher quality product. There are a number of ways to obtain essential oils, with some methods being more expensive than others. Steam distillation is one method where the plant matter is heated in water to produce steam that is then cooled and condensed. The oil will usually float to the top of the cooled liquid and is separated off. However, the temperature of 100c steam does alter scent, so an alternative extraction method is to use an organic solvent such as hexane. In organic solvent extraction the plant matter is mixed with a solvent, which, is then also evaporated off. The benefit being that solvent evaporation occurs at lower temperatures (the example given was 40c), which, is less destructive to the essential oil

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components. Once the solvent is evaporated it leaves behind a mixture of waxes and oils that is called a "concrete". The waxy material then needs to be separated off. To do this the "concrete" is dissolved in warm alcohol and chilled, the wax is filtered off and the alcohol then evaporated off, leaving behind what is called an "Absolute" – the essential oil that cannot be made any purer.

When originally preparing his presentation, Chris decided that he should bring a living specimen of *Boronia megastigma* along on his visits to groups, so, last spring, purchased a potted plant that was replete in flowers and buds. But more on what happened to that particular plant later, as first, a little more context needed to be set, so the story must to go back to the time of the first world war...

Owing to the scale of death and injury caused during World War I, a huge demand for pain relieving morphine arose. Opium is the source of morphine, and as supply was difficult, a major supplier of morphine in the United Kingdom began working to establish a reliable supply of raw material. This eventually led to an Australian poppy industry developing in Tasmania and Victoria. The expansion of this industry led to the establishment of a morphine extraction plant being located in Port Fairy, Victoria, adding to our developing of skills in, horticulture, harvesting and chemical processing within Australia. The expertise that has developed over time, led to half the world's total legal production of morphine being in Australia. The company that Chris worked for reached a point where it needed to diversify, and not remain a single product company. To make best use of existing skills, it was decided to explore production of other suitable low volume,



The Potted *Boronia megastigma* Image: Chris Long



Close up of *Boronia megastigma* Photo: Chris Long

high value products. A number of options were considered, including the extraction of Boronia Absolute oil, and this is where Chris's journey with Boronia truly began, as the manager for the Boronia project...

First, a little about the plant: *Boronia megastigma* is one of approximately 70 Boronia species found in Australia, and are members of the Rutaceae family, along with citrus and some other fragrant plants. Naturally occurring in the seasonally wet Jarrah forests of the south west of Western Australia, its habitat is usually alongside creeks or the edges of paperbark flats. Growing sites are often waterlogged and sometimes submerged. It is a woody shrub that grows to a size of 1-2 meters. Flowers are bell shaped, small, brown with a yellow interior, highly fragrant, and occur in early spring. *Boronia megastigma* is a short-lived species, and in the wild, natural regeneration occurs from stored seed after fire. Pollination is by a West Australian native bee, specific to *Boronia megastigma*. In cultivation it is grown in well drained sites, and heavy pruning is carried out following harvest, which, keeps plants small, and stimulates vigorous new growth.

As mentioned earlier, *Boronia megastigma* became popular as a cut flower in the early 1900's with the flowers initially being wild harvested, and leading on to extensive commercial stands being established in Victoria, after which the suburb of Boronia was later named. Commercial stands of Boronia still remain in Tasmania in current times. Throughout the years of extensive commercial cultivation, selected cultivar forms were developed from source material that originally came from Western Australia. The Chandler family was heavily involved in the farming of Boronia; selecting forms for their longevity, superior flower form, including size, colour, density, and often giving the cultivars interesting names such as: Currant, Squinney, Chocolate, Harlequin, Burgundy and Jack Maguire's Red. The growing of Boronia for cut flowers peaked in the 1940's and has been declining ever since. Two major factors influencing this decline were: Devastating disease that wiped out

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whole crops, and the falling out of fashion of floral button hole spays – a major use of the cut flower at that time.

Boronia oil has been extracted from wild harvested flowers in the past, with Palimar Ltd being issued a licence to collect flowers in 1925 to produce the Absolute oil via solvent extraction. However, the supply produced was small and erratic. There did prove to be a good market for the oil, once supply became consistent.

The first steps involved in the project Chris managed was the development of a reference standard sample. Boronia oil contains 120 different chemicals and a reference standard was necessary for analysis and future quality control purposes. As part of this process he worked with an international flavour and fragrance house, also undertaking 12 months of study to achieved a Diploma in Perfumery.



Boronia megastigma 'Jack Maguires Red'
Photographer: McWhirter, A
Taken at : ANRG sect 144

To produce the first samples, flowers were sourced from Chandlers and also from wild specimens. Obtaining flowers from wild specimens involved securing a licence to collect, and an expedition to WA, which, Chris was the lucky one to undertake. The licence to collect granted permission to visit one specific site near Rocky Gully in WA. He flew to WA during spring, then hired a car, driving to meet a ranger at the collection site. The specific travel directions that had been provided included traveling a few kilometres past Rocky Gully, turning off onto a sealed road, and along that road for some way after it became a dirt road, then onto a bush track for a couple more kilometres before turning again to travel the last few kilometres to meet the ranger at the nominated gully. Chris admitted to finding taking a hire car on such trek over out of the way unsealed roads and tracks "a little scary".

On meeting the ranger, Chris was directed to a few plants that were sticking up out of the water, and ended up collecting 2 full buckets of stems. It was critical that the least amount of time elapse from picking until the flowers were placed in solvent for shipping back to Victoria. Jars of solvent and a special box for shipping had been brought along, so he now had the tedious task of picking off each flower, and getting them into the solvent ready for transport. Sitting at the back of the car, it took "a hell of a long time" to pick and fill 6 jars with a total of 750 grams of flowers. Chris had presumed that he would be able to return to Perth on the same day, but soon realised there was no way that he was getting back to Perth that evening, and ended up finding himself an unplanned overnight guest of the Rocky Gully Pub.

There are a number of uses for Boronia Absolute oil, and there was interest from a multinational flavour and perfumery company for good supplies of fruit and berry flavours, and novel floral perfumes. Boronia oil is also the richest source of *Beta* ionone (an aroma compound).

For early extraction trials bulk flowers were purchased from Chandlers, also the Winfield family in the Grampians (whole harvests were purchased 3 years in a row), and additional bulk flowers were also brought over from WA in refrigerated containers.

A lesson learned during these trials was that if the stems of Boronia were whacked against a table, the leaves and flowers fell off easily & quickly. Another discovery was that they could get away with leaving leaves in during extraction without adversely effecting the end product. Boronia oil has to be solvent extracted so an alternate solvent, carbon dioxide, was also trialled. For use as a solvent, the carbon dioxide is put under pressure, which, forms it into a liquid. Once the Boronia oil has been dissolved into the liquid, the pressure is slowly released so the carbon dioxide becomes a gas and is evaporated away.

Horticultural trials were also undertaken in Victoria and Tasmania looking at such things as: How to best grow the plants and boost yields, harvesting, different soil types, herbicide trials, pruning and

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slashing trials, and cultivar comparison. To begin with, existing poppy growers were approached to set up $15m \times 15m$ plots, with about 100 Boronia megastigma plants planted into each plot, and plots were also situated in different soil types. For the pruning trials, a brush cutter with a saw blade was used – It was a crude method, but gave an idea of how the Boronia may respond.

Scaling up was the next stage, and a 10-year lease was taken on 5 acres in potato growing country near Port Fairy. Cuttings were propagated in Tasmania and shipped to Victoria, where a mechanical planter was used with the planting spaces set at 400m apart along rows. For weed control, plants were established in a bare paddock, and careful hand spraying was carried out on any emerging weeds. During summer an irrigation system was utilised. Disaster struck from 3 months on, and by 6 months almost all the plants were dead. Only some of the younger plants survived, which, were found to have been protected by "rogue Capeweed". It was suspected that as a result of being located near the coast, the salt and soil particle laden winds had sandblasted and salt scorched the majority of plants.

Speaking of sick and dying plants (and slightly changing the subject for a moment), the next slide that Chris showed was a later photograph of the plant that had been purchased to bring along to presentations. It was pretty sad looking at this stage and Chris confessed to being pretty good at killing Boronia, but he persevered with this one, trimmed and potted it up, gave it some water and it did manage to grow on.

Following the set back at the 5 acre site in Port Fairy, a further move was made to progress to the venture, and activities were shifted to where the horticultural expertise already was: in Tasmania. However, the biggest disaster came when the company decided to change direction and abandoned the project



Boronia megastigma plantation Image:

https://essentiallyaustralia.com.au/wp-content/uploads/2015/01/Boronia-Plantation-Spring-2015_web.jpg?v=6cc98ba2045f



The unhappy potted *Boronia megastigma* Image: Chris Long

altogether. Fortunately, the industry didn't completely cease. The University of Tasmania transferred the expertise that had been learned and gained through out the trials over to a cottage industry that now has 4 growers remaining in Tasmania. There is an annual harvest 2 tonne of Boronia per year, which, yields 120 kg of Absolute, worth approximately \$4,000-\$5,000 per kg.

On a personal note, Chris did feel there were also a number of positive personal gains that came from being involved the project, with a few of them being: Gaining horticultural trial experience and learning such things as the best time of day for spaying is at dawn, a free trip to WA (even if it did result in a very dirty pair of jeans), developing project management skills, and exposure to the world of perfumes and flavours.

Concluding the presentation, Chris then displayed his still happily growing potted *Boronia megastigma*, along with bottle number 27 of Boronia Absolute from the original trials (all told 30 bottles were produced). A sample strip was dipped into the bottle, which, was then passed around for us to partake of the fragrance. A small drop of the absolute oil is quite potent, and even oil on a sample strip can be quite long lasting. Chris has had the scent last overnight and into the next morning when a strip was left sitting in the kitchen, and for a few days when left in a car.

Following on from the main topic Mike Williams was invited to the floor, and spoke briefly on a complementary subject; the Rutaceae family:

The family Rutaceae encompasses about 320 species across 45 genera. Among the genera we may be familiar with are: *Boronia, Chorilaena, Citrus, Correa, Crowea, Diplolaena, Drummondita,*

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Eriostemon, Flindersia, Geijera, Geleznowia, Nematolepis, Phebalium, Philotheca and Zieria.

The evening's raffle prizes had been chosen from genus *Correa*. *Correa* are endemic to Australia and were named after the Portuguese botanist, Jose Correia da Serra (1750-1823). There are 12 species and 26 sub-species, with the species being: *aemula, alba, backhousiana, baeuerlenii, calycina, decumbens, eburnea, glabra, lawrenciana, pulchella* and *reflexa*. In addition, there are 120 varieties of *Correa reflexa*, and Mike advised that Bob O'Neill has a huge collection.

The four raffle prizes of the evening were:

- Correa 'Warrandyte Wonder' This form was found by Noel Gaskett (of APS Yarra Yarra), and is a cross between Correa glabra and C. 'Dusky Bells'. It grows .5m high x 1-2m wide and has a velvety look to the flowers.
- Correa alba pink form The particular specimen that Mike had brought in may have been be the pink form known as 'Katie Beck', which, Bywong Nursery hold the rights to.
- Correa baeuerlenii AKA the "Chef's Cap" Correa, is classed as rare and endangered in NSW, but can be a "bit of a weed" around Melbourne. This is the Correa that has a bubble gum scent to its leaves.
- Correa 'Marian's Baby' This form occurred from a seedling of Correa 'Marian's Marvel'. Its flowers are not as big as those on 'Marian's Marvel'.

Our lucky winners for the evening were: Ian, Ray, Alex and Angela. Yes, there was the odd good-natured cry of "rigged!", as some of our regularly luckier winner's tickets turned out to be drawn. As always, the evening was topped off with a little more time to mingle, chat, have another cuppa (and more cake), and of course browse and purchase from the excellent selection of plants made available.



Correa baeuerlenii Photo: Brian Walters

http://anpsa.org.au/c-bau.html



Zieria arborescens -Photo: J Petts



Correa 'Warrandyte Wonder' Photo: Mike Williams



Correa alba pink form Photo: Mike Williams



Correa 'Marians Baby' Photo: Mike Williams

Reminders, APS Victoria Diary Dates & Other Events

W.

Thank you

 For the various contributions of articles, answering pesky questions, event information, photo's, feedback, proofreading, researching & providing other information as needed and general support...

A BIG THANK YOU TO: Christine Cram, Ian Julian, Chris Long, Barbara Mau, Victoria Morris, Norbert Ryan, Mike Williams.

A P S VIC DIARY DATES...

April 13 - APS Yarra Yarra Native Plant & Book Sale. Eltham Senior Citizens Centre, 903 Main Rd, Eltham. 10 am -4 pm.

April 16 - APS Geelong. Dr Dean Nicolle will speak about eucalypts. Visitors are welcome. The Ballroom, Hamlyn Park, 1 Carey St, Hamlyn Heights. Starting at 7.30 pm. For more information call Bruce McGinness on 5278 8827. April 27 - APS Geelong Australian Native Plant Sale. 'Wirrawilla', 40 Lovely Banks Rd, Lovely Banks. Entry \$2 per adult or \$5 per car, children free of charge. 8.30 am-5 pm. A BBQ, refreshments, book sales, children's activities and a great selection of native plants.

May 4 - APS Mornington Peninsula Plant Sale.
Seawinds, Arthurs Seat State Park, Purves Rd, Arthurs Seat.
10am-3:30pm.

May 4 - Cranbourne Friends Annual Lunch in Tarnuk Room, Australian Garden. Guest Speaker is Dean Stewart.

May 11 - APS Melton & Bacchus Marsh Plant Sale at St. Andrew's Uniting Church, Gisborne Rd, Bacchus Marsh. From 9am-1pm.

June 15 - APS Geelong hosts Committee of Management meeting.

June 22-23 - APS Ballarat Winter Flower Show celebrating flowers grown locally in members gardens in winter. Robert Clark Centre, Ballarat Botanic Gardens. 10:30am-3:30pm September 30 - October 4 -ANPSA 2019 Conference -Blooming Biodiversity. Hosted by Wildflower Society of Western Australian in Albany, WA. Pre- and post-conference tours between 21 September to 11 October. Key Speakers include Professor Stephen D Hopper AC and Gregory John Keighery. Details: www.bloomingbiodiversity.com.au.



Committee & Contact Information

AUSTRALIAN PLANTS SOCIETY, MITCHELL GROUP INC.

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Group Librarian: Volunteer position open
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open. Email: g4w@apsmitchell.org.au

Newsletter contributions:

Contributions should be sent to Jeanine Petts Email: wattlegum@southernphone.com.au

Post: PO Box 381, Pyalong Vic 3521

APS Melton & Bacchus Marsh Inc.



NATIVE PLANT SALE

at St Andrew's Uniting Church, Bacchus Marsh (MEL333 J6)

Saturday 11th May 2019

9am-1pm

FEATURING HAKEAS, dwarf EUCALYPTS EREMOPHILAS

Info:

apsmeltonbacchus@gmail.com

For inclusion in the next Newsletter please forward contributions prior to the first Monday of each month.

Other Events...



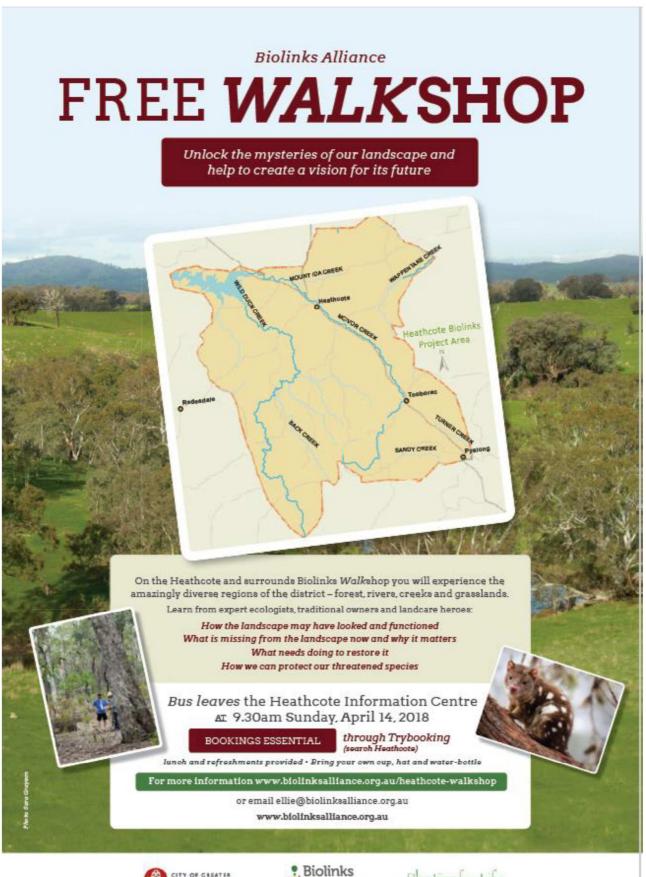
Australian Plants Society Yarra Yarra Group is having its regular Autumn Native Plant & Book Sale on Saturday 13th April, 10am - 4pm, at the Senior Citizens Centre, 903 Main Road, Eltham.

Plant sellers include Phillip Vaughan, Sun Valley, Natural Plantscape, La Trobe Wildlife Sanctuary Nursery, and Yarra Yarra Growers.

Tube stock to advanced plants, indigenous and grafted stock too - great prices too. For further information phone 9439 7228 or

Email: apsyarrayarra@gmail.com

Other Events...











Wild Pollinator Count







Tally Sheet

| Your name (or group): Email address: Email is optional but it enables us to contact you if we have any queries about your sightings. |
|---|
| Date and time: The time you started your 10-minute observation |
| The location of your observation Postcode is essential so we can contribute useful records to national biodiversity data. If your postcode applies to multiple localities, please also specify your suburb/town. |
| Suburb or town Postcode: |
| Location/address: (optional) |
| The name of the plant (common or scientific) you observed and the details of your observation site. E.g. quantity of flowers observed etc. E.g. silver wattle: 30 x 30 cm window of flowers; magnolia tree: 1 flower Please include this detail – your observation will be more useful if we can match it to a plant variety. |
| Is the plant □ native or □ exotic (introduced) or □ unsure? This information helps us to build a picture of the flowers that pollinator insects are visiting. |
| If you aren't sure you may like to take a photo or ask someone. |

Sightings

For each of the categories of pollinator insects below, please enter the number you observed.

| Pollinator category | Add your tally or notes here | Totals |
|---|------------------------------|--------|
| BEES_ | | |
| - European honey bees | | |
| - Blue-banded bees | | |
| - Other bees | | |
| BEETLES - Ladybird beetles | | |
| - Other beetles | | |
| BUTTERFLIES or MOTHS | | |
| FLIES - Hoverflies | | |
| - Other flies | | |
| WASPS - European wasps | | |
| - Other wasps | | |
| OTHER / unsure / uncategorised observations | | |
| TOTAL pollinators observed | | |

| 그렇게 하면 선생이 아이가 되다면 하다 하라면 보다 맛있는데 회사 아이를 맞게 하는데 어떻게 하는데 맛이다니다. 그 사람이 아이를 살아보다 하는데 얼마나 하는데 얼마나 나는데 얼마나 하는데 얼마나 나는데 얼마나 나를 얼마나 나는데 얼마나 나를 나면 나를 나면 나를 나를 나면 나를 나를 나를 나면 나를 나면 나를 나면 나를 나를 나면 나를 나를 나면 나를 나를 나를 나를 나면 나를 나를 나면 나를 나를 나면 나를 나를 나를 나면 나를 나를 나를 나를 나를 나를 나면 나를 | in the 'other' category). | ribe it here and tell us how many you saw |
|--|--|---|
| Add any other details | s about your observations. | |
| | - 1 THE TOTAL TO THE PARTY OF T | lease give an abundance breakdown for the ory not listed. Be as detailed as you can. |
| You can also note if yo | ou saw evidence of pollination | n occurring. |
| | | |
| | | |
| 200 SEC I | eive news about the Wild Fents via email (if you are not | Pollinator Count, including the results and already on our email list)? |
| □ Yes please | □ No thanks | ☐ Already receiving |
| | | |

Thank you!

Please submit your observations via our online form: http://wildpollinatorcount.com/submit-observations/

You can share photos with us by email or by including a link in your online submission.

Or connect with the pollinator counting community by using the **#OzPollinators** hashtag on **twitter**, **facebook or instagram**.

We welcome feedback about the count and any suggestions you may have for the event in future.