



Australian Plants Society

South East NSW Group

Newsletter 182

April 2022

Corymbia maculata Spotted Gum and
Macrozamia communis Burrawang

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Dear Members,

I can't write anything for this newsletter without mentioning the weather. As you know it has been extremely wet and the surf has been wild. Fortunately for us we have managed to carry on our activities with minimal impact, apart from the uncertainty of whether to attend. Thank you to those brave souls who managed to make it. Hopefully it will be an easier decision for our next gathering. For those of us who did attend, we were relieved to enjoy a dry day.

Each activity has always provided an opportunity to learn about our native plants and to gather with plant lovers and passionate people.

Work on the Proteaceae Project has been continuing and 15 plants were planted and new plants propagated. I will be sending a separate report to those that are on the project list, so if anyone else is interested please make contact.

In the meantime, please have a safe and enjoyable Easter Break

and we look forward to seeing you at the May Meeting. **(Details of May excursion is on Page 2)**



Plants, big and small about to find new homes in the Proteaceae garden at ERBG, courtesy of APS members Leonie, John, Dave, Jan, Barry and Christina,.

Latest COVID news, following a review of Policy by your committee.

This organization has always tried to follow the NSW Government recommendations for protecting your own health and the health of your community. Over time these recommendations have changed but there are certain practices that we would encourage. Sorry for being repetitive but the committee feels that we need to remind people, and we will do so before every meeting.

A few things to consider:

- If you are feeling unwell, please do not attend a meeting
- Try and maintain 1.5m between yourself and others
- If we are gathering indoors and distancing is difficult, consider wearing a mask
- Wash your hands regularly or use hand sanitiser
- NSW Health strongly advises people get fully vaccinated and wear a face mask where they cannot physically distance

Thanks. Di

Next Meeting Saturday 7th May 2022, at Eurobodalla Regional Botanic Gardens

Photography and Autumn Orchids of ERBG

**Arrive 10.00 a.m. for morning tea,
meeting to commence at 10.30 a.m.**

Members might be amazed to find that there are 146 species of Orchids known to occur in the ERBG collecting area. Not only that, but a surprising number is found within the Gardens themselves. At this meeting, Gardens horticulturist Dylan Morrissey will enthuse us with his knowledge of orchids, and discuss the species he has come across at the Gardens.

Dylan has been an orchid grower for 20 years (as well as growing and collecting many other plants) and it was his love of orchids that led to the path of horticulture.

Dylan says “I completed my apprenticeship at the Royal Botanic Garden in Sydney, which in no way helped curb my enthusiasm for collecting rare and unusual plants. After five years working there, I went to work for an aged care company, maintaining and developing gardens for residents in high care. The beautiful bushland setting and predominant use of native plants in our gardens nurtured a love of our incredible endemic plants and helped me develop a want to work more directly with natives.

After 12 years in the industry, my family and I moved to the Eurobodalla last year for my position at the Eurobodalla Regional Botanic Garden. This is a dream job where I can directly have an impact on the collecting and conservation of the unique flora of this stunning region and help educate the public of the importance of plants and more generally the natural environment.

I have been heavily involved with orchid societies since first starting to grow orchids all those years ago and was on the committee of Manly Warringah Orchid Society for the past 12 years, including the last 5 as president. Since moving to this area I have become very interested in terrestrial orchids and spend many weekends getting a sore neck, and leeches, crawling through the undergrowth searching for them. I have managed to tick off most of the species on my bucket list in the first year, but look forward to spending many more years discovering these wonderful plants.”

Prior to Dylan leading us along the Gardens bush tracks, **David Kemp, President of the Eurobodalla Photographic Club**, will address the group on flower photography. The photography talk will take place in the Banksia Room (Function Room) of ERBG. He, and possibly others from his club will join us viewing the orchids, and offer onsite assistance as we attempt to improve our close up photographic skills.

Last Meeting

As Di alluded to in her opening note, the threat of inclement weather caused many members to call with apologies, despite a tongue in cheek message that it never rains on APS meeting days. And so it transpired!

However **Lynn and Andrew Bain** welcomed our small group to their Broulee home, where we first luxuriated behind double glazed floor to ceiling windows, enjoying expansive coastal views, awed by the 12m seas crashing onshore whilst enjoying a warm cuppa.

Once immersed in the garden on the edge of the Broulee sand dune system, we were amazed at how tranquil was our setting, with little wind or sound of high seas disturbing our wander. Imaginative development within the dune system, of both the house and garden, protected us as we wandered paths lined with a range of heavily pruned local plants. Lynn has also included some garden favourites, and the sun tried, albeit weakly, to show through the cloud cover, just to cheer us.



John and Lynn discuss identification, with Leonie and Di looking on. Photo Amanda Marsh



***Banksia integrifolia* being 'tamed'**

Sustainable House

Andrew discussed how he uses ground water to heat their home. Drawing fresh water at 18° from deep within the dune system, this is pumped through in-floor pipes before exiting at 12°. Whilst modest, this 6° gain can heat the house to 24° within a few hours even on cold winter days, and due to substantial insulation, needs only occasional use.



General view of the garden, with dense planting of local dune species to moderate the winds. *Monotoca elliptica* was prominent, and Andrew demonstrated just how well they accommodate heavy pruning

Moving on to **Captain Oldrey Park** to look at post fire regeneration, Lynn detailed how both Broulee Mossy Point Community Association and Broulee Mossy Point Dunecare fought hard to protect this last remaining 2ha of **endangered Bangalay Sand Forest** on public land in Broulee, with the surrounding Bangalay Sand forest earmarked for clearing for an 80 Lot subdivision. This subdivision is likely to severely impact the remaining forest, with locals impressing on Council



Di making a presentation to Lynn thanking her on behalf of the group
Photo Amanda Marsh

there is scope for some improvements to the proposed plans, particularly with achieving a better integration of the development with the natural environment. The prime area for this is within and adjacent to Captain Oldrey Park (COP). It is open to Council to decide that no trees or other significant vegetation will be removed from COP. This would save significant vegetation including several significant old blackbutt trees.



Group discussion on the importance of maintaining bushland for the amenity of locals Photo Amanda Marsh

There is a call for Council to map significant vegetation, and to consider whether there are ways of saving some of these important habitat trees. To support their position, an arborist's report has been prepared and submitted to Council, detailing some of the major trees likely to be impacted by the development, pointing out that the trees, although mature, are in a healthy state. This report reinforces the environmental importance of retaining mature trees. There are sensible options to save trees within and adjacent to COP. The local community groups argue that mature trees and vegetation that the Development Application will require to be removed should be identified, and the DA should be

amended so as their removal from the public park becomes unnecessary. We hope that the community is successful in its attempts to sway Council to amend the current DA. This last remaining tract of natural forest is such an important link for not only the community, but more so for the fauna which make use of its resources.

Politicians at all levels have a responsibility to consider the broader needs of the environment, and place these above the aspirations of developers to profit short term at the expense of great benefit such gems of nature offer for the long term benefit of all.



Venerable *Banksia serrata* at Captain Oldrey Park

After a quick lunch at Mogo, a smaller group, make that 3, headed to Pistol Shot Road in Mogo State Forest, Barry driving so Di and I could plant spot. We noted that following the fires, vigorous climbing plants sprawled across the lower vegetation, nature's way of protecting the soil from erosion until the ground flora has sufficiently developed to take over. Wattle regrowth was dense, but smaller plants staked a claim to a bit of sunshine, with *Pimelea linifolia* putting on a brave show.

Eucalypts sported great masses of leaves from black trunks, varying in shades of grey/green depending on the species, but *Corymbia gummifera* bucked the trend, with shining new leaves of reddish tones.

Flowers were a bit sparse as walked along, with the area to ourselves. One advantage of not so pleasant weather, although the rain did hold off so we could enjoy the solitude.

Our local Grevilleas are mostly seed regenerators, and here *G. arenaria* was prolific, dominating the understory with massed regeneration. Some plants obviously germinated quickly, and were now over a metre high, already flowering in their shy way, with flowers variously coloured red, pink or with orange tones, usually in ones or twos. Others were yet still babes, just 30cm high, jostling for a little space. It is a pity this amenable plant is not more widely grown.

It is adaptable to most garden situations, flowers most of the year, and provides excellent habitat for our smaller birds.

Adding to the colour, bright buttercup yellow *Hibbertia riparia* shrubs dotted the landscape, highlighting the pink of *Crowea exalata*. On what appeared a dry stony stretch, we found seeding heads of *Haemodorum corymbosum*, an unusual plant in the Kangaroo Paw family, in which the roots contain a blood red pigment. Previous experience was that these plants grow in swampy land, suggesting that there must be plenty of subsurface water available. Flowering of *Banksia spinulosa* (pictured right) was prominent, along with *Bursaria lasiophylla* which still held a few flowering stems. Our walk, should I say dawdle, saw us cover about 1km, before returning. This area should provide a spring delight, with *Dampiera purpurea*, many pea plants, and other small shrubs common. Orchids were also present, as just leaves so far, but there is a promise of more.

Easily accessible along Buckenbowra Rd from Mogo, a visit will prove rewarding.



Haemodorum corymbosum, Rush-leaf Bloodroot Photo Di Clark



Hibbertia riparia, Erect Guinea Flower, often confused with *H. stricta* Photo Di Clark



Flora Connections citizen science project: Ruby Stephens



Australia has a wealth of unique plant species, with many plants found nowhere else in the world. To protect these plants we need to know what is happening on the ground, and how plants across Australia are faring against threats such as habitat loss, disease, fires and floods.

Citizen scientists, bushwalkers and botany groups have on-ground knowledge of what's happening to plants in their area.

A new citizen science project, **Flora Connections** wants to connect this community plant knowledge to conservation decision making. Flora Connections provides guides and a data sheet to collect information on plant species- where the plant is growing, how many plants there are and what the threats to the plant might be. Data can then be

uploaded via the website to the Atlas of Living Australia, where it will be used by the scientific committees and land managers trying to protect plants across Australia.

I'm excited to announce Flora Connections is ready to launch, and keen for groups like yours to get involved.

Attached with this newsletter is our survey guide, which has step-by-step instructions for how to get involved in Flora Connections and how to fill out the data sheet, which is also attached. These and more can all be found on our website: floraconnections.com

I'm happy to answer any questions you might have about Flora Connections. I'm also keen to run some in-person Flora Connections surveys later this year with different groups (mostly in NSW where I'm based), do get in touch if you'd be interested in collaborating on a Flora Connections survey with me.



Visit floraconnections.com to learn more, and print out a data sheet and get involved!

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Callistemon citrinus

In my garden reprinted from Sutherland APS March 2022 newsletter

**At the February Meeting of Sutherland APS Group, an interesting discussion centred on
[Can we hide our plants from Swamp Wallabies ?](#)**

Presented by Dr Catherine Price and Dr Cristian Gabriel Orlando – University of Sydney.

A talk we were excited to hear, as many of our members have gardens which are frequented by herbivores, such as Rusa Deer and Swamp Wallabies. Swamp Wallabies have a reputation for eating everything in your garden. They are not fussy apparently!

Cristian (Gabriel) explained that herbivore study is very popular these days as herbivore numbers have exploded generally in natural areas world-wide, usually due to a decline in predators. This can cause issues for ecological management as herbivores simply eat and damage too much vegetation, causing ecosystem decline (the removal and subsequent re-introduction of the Gray Wolf at Yellowstone National Park in the past is a great example of this process). Gabriel and Catherine are trying to come up with the best ways to manage these problems, in a way that does not use poison, culling or other harmful method to control herbivores. For instance, can we stop herbivores such as Swamp Wallabies finding certain food, or can we distract them from a certain food?

Foraging ecology experiments are set up to answer these questions with a focus on how Swamp Wallabies find and select their food.

Swamp Wallabies have a large natural range along eastern Australia and have high populations – mainly due to a lack of natural predators. Swamp wallabies are mixed but selective feeders, living in densely vegetated areas such as wet and dry sclerophyll forests and woodlands and are active both at night and day.

Gabriel began with “How do wallabies find their food?” As wallabies eat at night, then it is suspected that they have a great sense of smell rather than eyesight.

Previous studies have shown that wallabies visit food patches in a non-random fashion. They rely on the smell of food patches and they can find food faster if the smell is stronger or coming from a higher number of preferred plants. Gabriel wished to know: can wallabies use odours to find food at a fine-scale?; And, does the smell information affect foraging behaviour.

Swamp Wallabies were tracked with cameras which recorded 20 hours of continuous video in areas such as Kuring-gai Chase National Park. The experiment included: a control patch of natural vegetation, then, an apple placed in the same habitat at the exact same place. The apple is obviously a new food with a conspicuous odour. The swamp wallaby enters the patch, waits for a little bit and then charges straight through to where the apple is, amazingly! But, just as interestingly, when the apple was not present, the swamp wallaby entered the patch and moved along gently, browsing intermittently on different plants and moving carefully through the patch.

Results showed that there are many more stops by the wallabies per metre, compared to when the apple is present. There is also a higher incidence of straight-path journeys and lower percentage of time with “head down on ground” when the apple is present. The wallabies also visited the apple patches much earlier. So how can we use this?

Catherine started with – why do we need new approaches for reducing browsing?

Catherine explained that European Fox control has likely being successful in many areas and Swamp Wallabies have benefitted from this. Dingoes have also been removed, along with hunting practices of First Nations People. Tailored to this, is the fact that rangers and other land managers do not really want to be shooting wallabies in this day and age.

Swamp wallabies can have an impact by over-browsing on species they prefer which results in suppression of those species and subsequent dominance of species they do not eat. These impacts have been shown in fenced versus unfenced areas. The recent bushfires in NSW have also had a large impact with Swamp Wallabies returning early and over-targeting palatable seedlings, resulting again in dominance of unpalatable species. This leads into impacts on threatened species. Examples of these are *Zieria obcordata*, *Grevillea caleyi* and *Haloragodendron lucasii*. The *Zieria* is likely targeted for its aroma and softer leaves where *Grevillea caleyi* is targeted for its seed. Implementing management practices for these species, such as controlled burns, have to account for follow-up impacts from Swamp Wallabies and other browsers.

Therefore, can plants be hidden in the field somehow?

One idea, which links back to the apple, is to place fake-plant smells through the environment. That is, harness the smell of a preferred plant and simply spread them through the environment. Wallabies would be attracted to the smell which would likely confuse them enough to not find any preferred plants in the patch.

An experiment was done where 40 x 40 metre grids were setup using *Eucalyptus paniculata* (Grey Ironbark) seedlings. Control plots had 1 single seedling from a nursery planted; treatment plots had buried vials containing leaves of *Eucalyptus paniculata* seedlings surrounding 1 planted seedling. The vials emitted the same odour but could not be eaten. In came the Swamp Wallabies! In the control plots, the seedlings were eaten up to 75% of the time. In treatment plots, the seedlings had an increased survival rate of 80%! Exciting results! It seems the wallabies are confused by the large amount of plant odour that gives no reward. Future plans include investigating: can this be used for threatened plant protection? Are the wallabies permanently duped or will they figure it out? Catherine wants to set up projects with land managers to test this.

Gabriel finished with how the foraging preference of wallabies might be altered?
How might they be steered off the plants we want to protect?

A very interesting example was given here:

You may go to buy a new model of something, such as a mobile phone. There are 2 options, a cheap option and an expensive option which has more features and technical capability. Studies in economics show, most people will just take the cheaper option, thinking it will do the job. However, when 3 models are presented for sale, with an even more expensive model with more features added – which also happens to be sold out when you want to buy, then people tend to choose the middle model – thinking that the cheapest model is too insufficient, or in other words, crappy! It is referred to as the Decoy Effect.

Can this be applied to Swamp Wallabies?

Wallabies can find multiple food plants in close proximity with multiple factors influencing the decision, such as toxicity properties and nutrient requirements. If we have Plant A and B available, with the intention of protecting Plant A, then maybe we can introduce Plant C but make it unavailable (put it in a cage perhaps).

Would this make the wallaby go for Plant B? Gabriel tested this by simply setting up two food sources for wallabies (A and B).

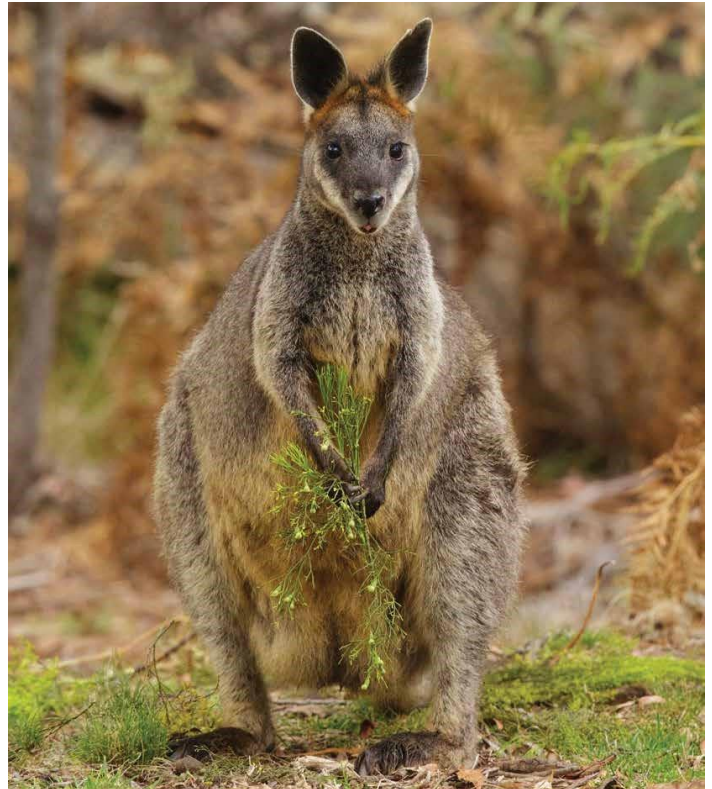
Diet A had less cineole and less nitrogen, Diet B was the other way around.

Then, other plots were set up with Diets A, B as well as C – where C was of higher quality with more nitrogen and less cineole. A small amount of Diet C was available for sampling, but the remainder was locked up (called a Phantom Diet). This was tested in Summer and Winter. Two variables were measured, the decision to sample a diet and the time spent eating it.

Results showed that in the A vs B diets, wallabies tended to sample one diet over the other. However, in the 3-diet plots, the animals spent more time testing all 3 diets with more similarity between A vs B.

When it came to the time spent eating the diets, there were no real significant differences. Gabriel stated that this might be due to the Phantom C diet being unsuitable for swamp wallabies. It has to be the right decoy! Hence, more research is needed.

This was very interesting research and it makes us wonder what tricks we may play in the garden to protect our plants. Throw a bit of apple around to start with? Good luck!



Foraging Wallaby (Photo: Mark Sanders).

A couple of other online references on interest:

https://www.researchgate.net/publication/319103262_Finding_Food_in_the_Forest_A_Swamp_Wallaby's_Guide

<https://www.gardeningknowhow.com/plant-problems/pests/animals/keeping-wallabies-out-of-gardens.htm>

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