



Australian Plants Society

South East NSW Group

Newsletter 181

March 2022

Corymbia maculata Spotted Gum and
Macrozamia communis Burrawang

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Dear Members,

March has been a month of much rain and excessive plant growth. We extend our thoughts to all those who have been affected by flood and other troubles.

In our area there are times when the garden or bushland becomes a refuge. Although I have heard many people say that their gardens are growing too fast and there is limited time to do any work.

The same applies to those involved in landcare activities. All we can do is our best, and get used to living with some chaos.

If we learnt anything from Paul Martin's talk in February it was to concentrate on the important issues and let go some of the rest.

We are also trying to learn about our environment and observe the fire recovery processes.

With that in the mind the committee has tried to set a balanced agenda of activities for the year. It is always highly changeable so we will let you know as details are confirmed.

We are aiming to have as many outdoor activities as we can. (Details of April excursion is on Page 2)

This brings me to the latest COVID news.

The committee has decided that we will currently only require double vaccination certificates to be evident for indoor activities.

The wearing of a mask is now optional. This change is aimed to simplify our procedures and bring us into line with the broader community.

We will still be following the usual health practices of not attending if you are unwell, washing your hands regularly and not gathering too close.

We will keep monitoring the COVID situation in our area and revise our decisions as required.

Thanks.

Di

Next Meeting

Saturday 2nd April 2022,

Broulee Dune Garden and Bangalay Sand Forest arrive 10.00 a.m. for morning tea and a briefing

The garden we are visiting today was previously open as part of the Sustainable House scheme, demonstrating sustainable gardening.

Belonging to Lynn and Andrew Bain, the garden is located on the edge of the Broulee sand dune system.

Lynn is the Convenor of the Broulee Mossy Point Dunecare group and demonstrates her passion for natural ecosystems in her garden with a clever blending of the natural dune plants and added garden plants. Lynn is also involved in the development of Captain Oldrey Park in the Broulee area. The battle has been to protect this last remaining 2ha of endangered Bangalay Sand Forest on public land. Lynn will join us on a walk around this park and explain what the community has and hopes to achieve.

The address for this meeting is
1A Ingram Street, Broulee.

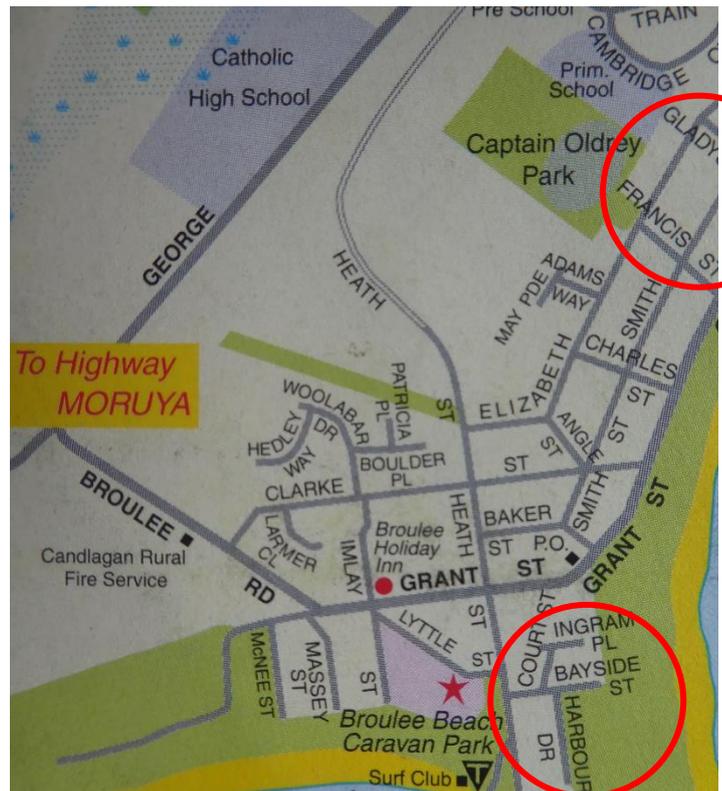
Ingram Street can be a bit hard to find. From the main coast road through Broulee, turn into Heath Street as if heading to the Surf Club, then first left into Bayside Street, then left into Court Street. Turn right into Ingram Street.

1A is the place with the farm gate.

We will be able to sit on the deck so bring your chair and your own refreshments.

After the garden viewing we will then drive to Captain Oldrey Park. Enter via Francis Street and park near the netball courts.

Time permitting, once our tour of the Bangalay Reserve is complete, we will move Mogo to look at how the forests growing on coarse granitic sand have recovered. This area is home to some plants ideally suited to growing in our gardens.



Last Meeting Murramarang National Park Bioblitz

A small but enthusiastic group spent the day undertaking detailed surveys of the flora in 3 sections of southern Murramarang National Park. We were pleased to welcome Dr. Roger Farrow, retired CSIRO entomologist and APS Canberra member, who provided a different view of the plants we were looking at. It is amazing what a trained eye discovers, and Roger spent quite some effort in showing us tiny creatures we obviously would have missed as we concentrated on plant profiles.

Unfortunately continual rains during early March meant that National Parks staff had closed many areas of the park, limiting the opportunities available for survey work. However the weekend was fine, and we had no issues other than a few wet sections of track to negotiate.



Aiming to record every plant species from small herbs to tall trees, here Barry calls for Catriona to photograph his find, Phil is already at work, and Di is deciding which of her impressive cameras to use. She was caught just before kneeling to record a tiny daisy, *Lagenophora*

As our aim was to support the Bushfire Bioblitz being coordinated by the University of NSW, each member was delegated the task of photographing and recording our finds.

Dianne, Sharon, Catriona and Phil each had the cameras out, taking macro shots of tiny herbs and secretive flowers, or more general plant photos which demonstrated features enabling the plants to be identified.

As mentioned, Roger identified the insects, and Barry assisted me in finding and recording plants on a growing list.

The first area covered was the impressive regenerating *Eucalyptus saligna* / *Corymbia maculata* forest north of Durras Lake. Here we recorded 81 species, with the understory looking very healthy 2 years after being severely damaged in the bushfires.

By the time this section was surveyed, the photographers had mastered their task, and the next 2 sections were somewhat easier to complete.

Ryans Creek and Cousins Gully were both closed, so the rainforest areas were off limits. We therefore skirted a trail between 2 creeks, sticking to a dry ridge line with *Corymbia gummifera* and *Eucalyptus globoidea* dominant. This section revealed 53 species, with most being added to iNat records. The final section, a track above Ryans Creek where it crosses Mt. Agony Road, consists of *Corymbia maculata* with a dense understory of wattles dominated by an attractive, weeping form of *Acacia floribunda* with fine grey foliage. Here just 32 species were recorded, as the track deteriorated into a wet sludge.



As we have noted at other sites, regrowth after the fires has been prolific, aided by mild weather and regular rains



Near a partially burned National Parks track marker, Sharon shows that young knees are an advantage as she focuses on *Hydrocotyle sibthorpioides*, another ground hugging herb. In the background Roger is on the look-out for a beetle which was disturbed at its resting site

The full lists of plants is attached to the newsletter email for those who would like to see what we recorded in the area.



On the Sunday, APS members had agreed to lead a plant discovery walk to Snapper Point, leaving from Pretty Beach camp ground, where the Bioblitz team had set up their base.

The plan for the day was to join with Bioblitz leaders from other areas, and we were happy that UNSW staff botanist Guy Taseski accompanied us, as he was quite confident in naming nondescript grasses and sedges, which without flowers left us guessing.

Another astute spy of the unusual or difficult, Laura Fowler filled in some obscure gaps, helping our photographers Phil, Catriona and Di record 123 species on the short hike from the campground to Snapper Point rock shelf.

This area was saved from the bushfires which burnt through nearby forests, so the expected ephemeral plants were not found.

With Snapper Point rocky headland as our target in the distance, the group pauses amidst heathy shrubland containing low growing *Banksia spinulosa* and *Correa reflexa var speciosa*, and a range of pea plants such as *Aotus ericoides* and *Bossiaea ensata*. The taller plants are *Allocasuarina verticillata*. Once down on the flat rocky headland, we discovered carpets of Flannel-flower, *Actinotus helianthi*, which although flowering had finished, had already established a dense colony of seedlings in this seemingly inhospitable environment.

A feature on the headland is an **unusual Banksia**, noted on previous visits by Phil and Catriona and others. It is a stocky shrub, not dissimilar to *B. integrifolia* in leaf, but the flowers spikes are larger, retain their styles and also retain the seed, whereas *B. integrifolia* styles fall early and the seed is released as it matures.



The flower spikes, retained floral parts and the leaves are somewhat like the typical *B. paludosa*, but this plant differs in not having a lignotuber.

Could this be a hybrid or a new species? If a hybrid, *B. paludosa* should occur on the headland, but Phil has never seen it there.



Just a couple of the insects photographed by Roger.

Pseudolyucus sp., a Lycid mimic

A small, secreted nest of *Polistes humilis*, a paper wasp. One of our party, not seeing the nest, ventured too close to identify a sedge, and came out much quicker than going in. Ouch, the sting hurts!



The following paper has been printed with authorisation from the author

The need for fire to sustain the diversity of fire-adapted vegetation:

a response to the need for any management intervention of bushfire-affected rare plants

Roger Farrow* "Tilembeya", 777 Urila Road, Urila, NSW 2620 r.farrow@iimetro.com.au

I have been studying the regeneration and recovery of the vegetation in the Moreton National Park (Nerriga Road Area) and Tallaganda National Park (Mulloon Fire Trail) following the 2019–2020 mega-fires.

The shrub and forb layers in these National Parks were completely obliterated by the intensity of the fires leaving just a bed of ash. Although my observations are not strictly quantitative (e.g. through the use of quadrats etc.), I did return to the same places to identify what was coming back, and took photos.

These observations were complemented by a review of the extensive literature about the impact of fire on Australia's flora and discussions with colleagues, including Michael Doherty (CSIRO). Michael has undertaken a long-term study (using quadrats) of the recovery of vegetation in **Namadgi NP** after the mega fire of 2003. He found no net loss of species.

My conclusion is that the Australian flora outside of the rainforest ecosystem is highly adapted to survive fire. Most species, from the largest tree such as Mountain Ash to the smallest forb such as the Pink Flannel flower, are dependent on fire for successful reproduction and long-term survival. Many species of Proteaceae and Myrtaceae only release their seeds after fire. Fire has always been part of the earth's environment. It is closely associated with the appearance and radiation of the angiosperms in the Cretaceous era, 100 mya, and goes back to the very start of plant life on land in the Devonian era.

The post-fire response of the vegetation, especially if there is significant follow up rain, is that species diversity actually **increases** in the aftermath of the fire.

This is due to the germination of plants from the seedbank that has been steadily building up during the inter-fire period. Hard-coated seeds of the Fabaceae and Mimosaceae are a conspicuous element here, as they need a dormancy-breaker like fire to germinate. In addition, there are also species with tiny seeds that remain dormant until there is a very hot fire (*Dampiera fusca*, *Actinotus forsythii* etc.). Species diversity starts to decline post fire as regrowing shrubs out compete the forbs and fire-dependant ephemerals that disappear. This response applies to all species, whether common or rare.

Soil is a great insulator and plants in fire-affected ground also regrow from underground rootstocks (sedges, grasses and other monocotyledons), bulbs and corms, (many monocotyledons, including orchids), taproots (many Apiaceae, Asteraceae and others) and lignotubers. Shoots sprout from above-ground, epicormic strands in the stems of Myrtaceae. All these survival mechanisms are seen in the plants growing back in fire-affected areas of Moreton and Tallaganda NPs and elsewhere.

Examples

1. **Orchids.** Unprecedented numbers of orchids appeared in the autumn and spring following the Morton NP mega-fire. They include several threatened species, namely *Corunastylis superba*, *C. plumosa* (new locality), and *Caladenia tessellata*, plus other species like *Prasophyllum australe*, never seen before, presumably because it was hidden under the dense cover of shrubs in previous years.

The photo shows **Corunastylis densa**



2. Fire-dependent ephemerals. Vast numbers of seedlings appeared after the fires and included three species never seen in the previous two decades in the Nerriga area, *Actinotus forsythii*, *A. gibbonsi*, and *Commersonia hermannifolia*. These could not be identified until they flowered. Their seeds could have been in the seed bank for decades since after the last major fire. These plants are also known as **obligate pyrogenic species**.



Seedlings of *Actinotus forsythii*



Pomaderris costata

3. Pomaderris. Tallaganda NP contains six known species of Pomaderris and all the plants were destroyed by the mega-fire. Some, such as *P. costata*, were in a senescent stage before the fire. By the following spring large numbers of seedlings of all the known species were abundant and more widespread than before. By August 2021, some seedlings had produced flower buds

4. Dampiera fusca. Two years after the 2003 ACT mega-fire, a blue carpet of *D. fusca* appeared on several summits in the Brindabella Range among the burnt out shrubs. These were new records for the ACT. The plants only lasted two years before disappearing, leaving their progeny in the seed bank.



Dampiera fusca, Booroomba Rocks

It has been suggested that the survival of rare or threatened plant (ROTAP) species has been put at risk by the mega-fires of 2019–2020, notwithstanding their adaptations to survive fire. To demonstrate an adverse impact of fire, we still need evidence that such species have not left any progeny in the aftermath of the fire. Most plants are put on the ROTAP list because of factors like loss of habitat and lack of burning at an appropriate temperature.

For example, in *Pomaderris bodalla* it has been shown that low temperature control burns adversely affect mature plants without breaking seed dormancy leading to population declines. In another case, the loss of *Prasophyllum petalum* from Captains Flat cemetery reserve was probably due to lack of burning, that resulted in a thick thatch of *Themeda triandra* developing and shrub invasion by *Hakea microcarpa* and *Kunzea ericoides*. Any restoration work in burnt areas should probably focus on tasks like weed removal, although the heathlands of Moreton NP and the forests of Tallaganda NP are remarkably weed free.

Finally, I do not expect to see any loss of plant species, whether common or rare in Moreton and Tallaganda National Parks, despite one of the most intense fires on record.

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About the author

Dr Roger Farrow is a retired insect ecologist who previously worked at CSIRO, Division of Entomology. After retiring he joined the Canberra Branch of the Australian Native Plants Society to further his interest in native plants and their relationships with insects, especially pollinators. For more than two decades he has led excursions with the Society to places of botanic interest both in the local area and further afield.

He is the author of “*Insects of South-Eastern Australia: an ecological and behavioural guide*” (CSIRO 2016) and co-author of “*Field Guide to Orchids of the Southern Tablelands of NSW including the ACT*” (2020)

In my garden



It's not every day one receives a visit to the front door by such a cute local.

Whilst we regularly see these in our garden, being brave enough to check out our front patio is a new and exciting experience. After a few minutes deciding if any food was available, he/she wandered off beside the house and disappeared in the back garden, where hopefully plenty of nourishment could be found.

You think it's been a bit wet lately? Di Clark snapped this picture of tiny frogs seeking some warmth after days of rain.

We are a bit hard to see, but 3 little *Littoria fallax*, Eastern Dwarf Tree Frogs are sitting high and dry on leaves of *Banksia paludosa* near the lake by ERBG visitor centre. This small species, reaching only 2.5 cm, has a bright green or bronze back, with a bronze stripe from the tip of the snout along the sides if the back is green, or small green patches if the back is bronze.

Eggs are attached to vegetation near the surface of the water in swamps, permanent ponds, and dams. Tadpoles can reach a total length of up to 5 cm, and are translucent gold or olive-brown in colour.

These frogs are quite common locally, but overlooked because of their small size and tiny voice. A healthy frog population indicates a healthy environment.





THRIVING TOGETHER

Resilience and Renewal in a Changing World

AAFBG2022@erbg.org.au



Friends of
EUROBODALLA
REGIONAL
BOTANIC
GARDEN

29 April
- 1 May 2022

We invite ERBG Friends to the 2022 AAFBG Conference at the Eurobodalla Regional Botanic Garden. The theme for this year's conference is "Thriving Together: Resilience and Renewal in a Changing World". Since arriving at this theme two years ago we certainly have lived in a changing world, but we remain optimistic and continue to plan for a conference that will give Friends across Australia a chance to connect and grow.

Our program will showcase inspiring speakers including Keynote Speaker Professor Tim Entwisle, Director and Chief Executive at the Royal Botanic Gardens, Victoria who will bring his global and local experience and insights.

Speaking on the idea of resilience and renewal will be Michael Anlezark who has led our Garden for the last 10 years through the redevelopment, 2019/20 fires and the pandemic.

The team from Community Greening at the Royal Botanic Garden Sydney will share their innovative outreach programs that recognise the benefit of gardens for both physical and mental health.

There will also be the opportunity for Friends to build connections with other groups and share their stories of resilience and success through interactive presentations and workshops.

Over the weekend there will be plenty of time to socialise. ERBG Friends are invited to take part in the whole conference or to register just for the social activities.

The Registrations pack is attached as a separate pdf document with this newsletter

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