

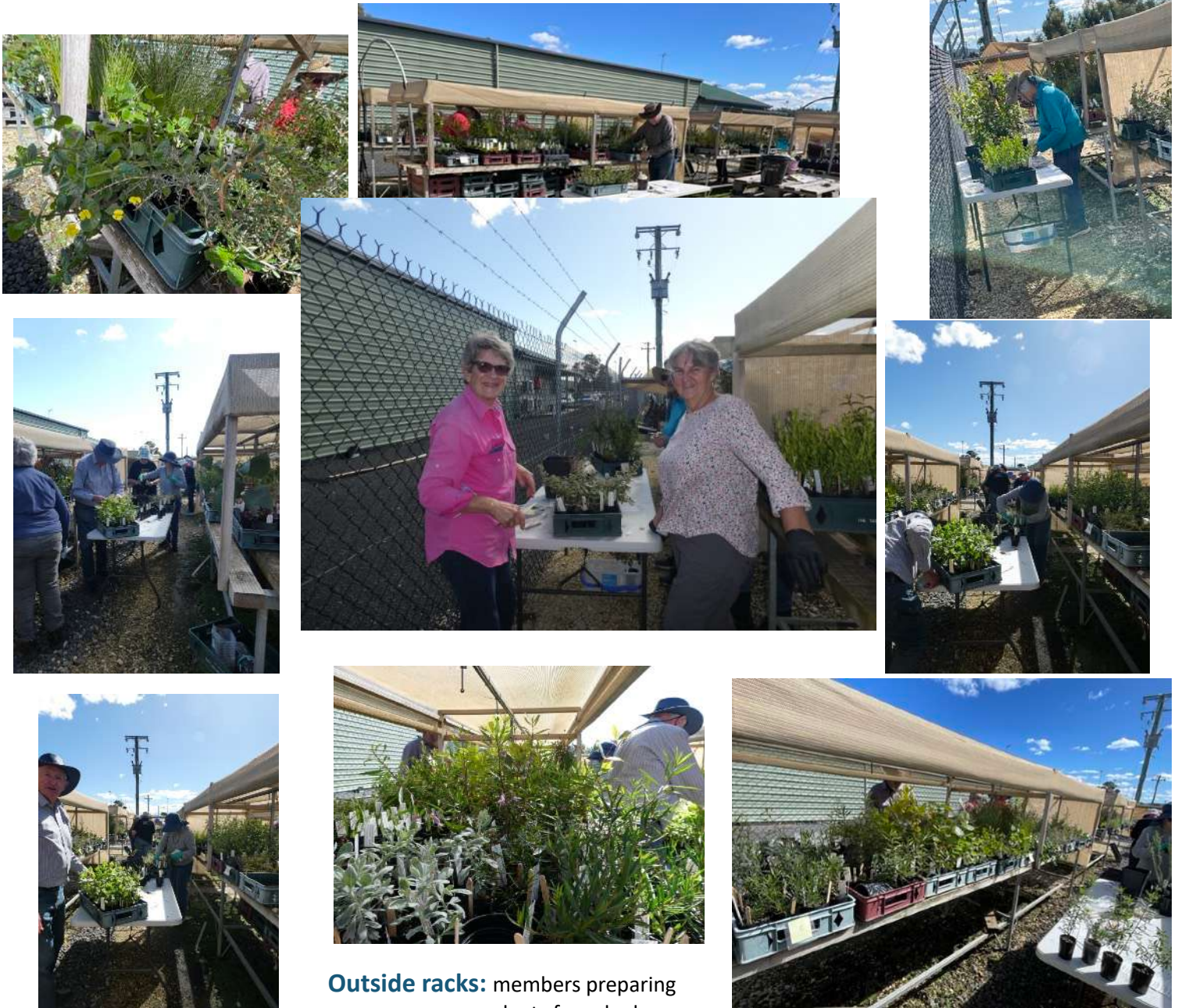


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Northern Group Newsletter April - May 2023

The Nursery: A very busy day, April 1, mid autumn, mild weather, happy plants growing impressively to please the nursery managers and now in need of the final spruce up before the pending sale.



Outside racks: members preparing plants for sale day

John Simmonds Shade-house: newly propagated plants plus those ready for potting up



Look carefully in the photo (above right) to see Colin Hallam tending to the irrigation system, in this case a leaking pipe. Colin set up and ensures that the crucial watering system works. It is a constant task done quietly and efficiently.



Inside the Stables: members propagating cuttings for the spring sale.

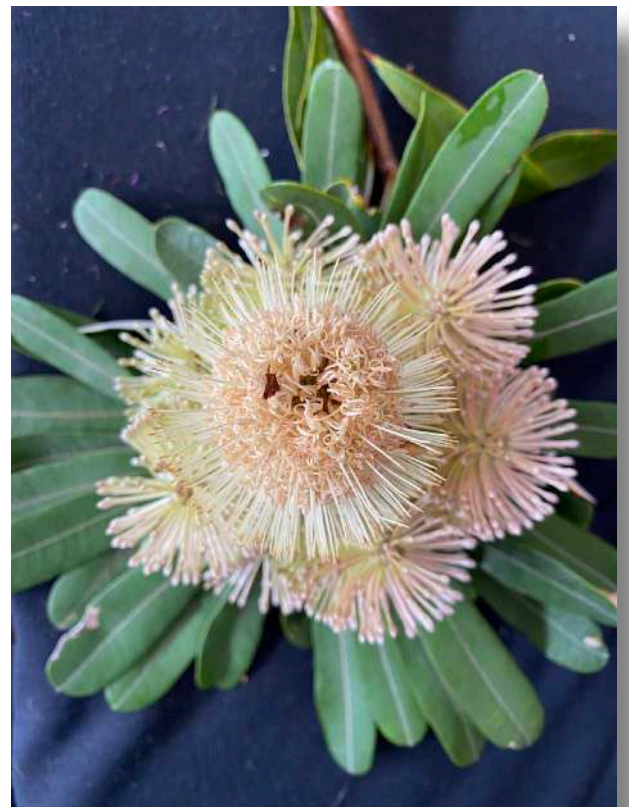




So many busy hands on this important pre-sale propagation day. While several punnets were completed and settled into the shade house, the major activity revolved around the outside tables where plants were at the end of their propagating journey.

Early April days continued to be busy as plant sale posters were nicely designed by Louise for distribution in local shops, or online to friends. Some sale plants were passed to both NW and Southern groups and we received plants in return. This is another way of providing extra variety in what we are able to sell. At the nursery conscientious members were putting in extra time completing those tasks necessary to ensure a well organised sale day.

Friday, 14 April Setup of Native Plant Display Table ready for the Launceston Horticultural Show, Memorial Hall, Evandale. The show ran Saturday and Sunday with members returning to pack up late Sunday afternoon.



This year there seemed to be far fewer flowers for display but it is quite remarkable what can be put together with the creative minds of members e.g. Fran arrived with a most interesting fungi display! It blended well with the *Banksia* and surrounding *Grevillea* and *Diplolaena* species. Rosemary V. brought this unusually shaped *Banksia integrifolia*.

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< Louise and Margaret placing plant labels which Margaret had carefully laminated so they can be used at future displays.



^ *Viola hederacea* with white *Brachyscome* daisies.



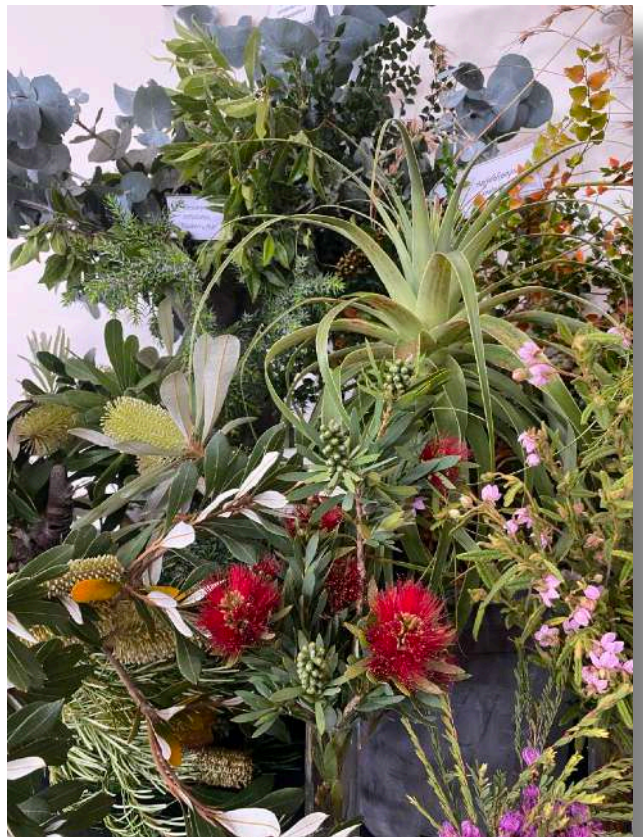
^ *Diplolaena* sp. looking good with its silvery foliage.



< *Crowea* sp. providing colour in a pot.

A small section with *Banksia*, *Richea*, *Callistemon*, *Thomasia* species and the touch of pink at the very bottom is *Melaleuca thymifolia*.

>



The display, spear-headed by Rosemary Verbeeten, drew attention and it continues to surprise some that there is so much colour and such rich diversity to be found in our native gardens - yet another successful activity.

Tuesday, 18 April Working Bee, Tasmanian Native Garden, Caswell St., Mowbray





This was a special working bee firstly because there were approximately 30 new plants to be placed in gaps in the garden and secondly because the first lot of the new plant labels were to be placed in the ground. Leon Lange was overseeing the placement of fifty plus labels. The metal post required some strength with the jemmy to be ready to hammer into the ground. (See Roy and Leon) Then Suzanne and Fran tackled the more intricate task of gluing the labels to the posts. Other members continued weeding after the new plants had been staked and watered into their new spots. A productive morning.

Tuesday, 18 April General Meeting

Members began the meeting at 7pm with the aim of covering the business items efficiently to be ready for the Plant of the Month and Rebecca Jones, guest speaker for the night. After a little discussion about venues members voted to stay at Max Fry Hall and also to support Anna Povey's letter about protecting Carr Villa's bushland to be sent to CoL councillors. It was also decided to add regular garden visits to the program and Sharon agreed to facilitate these.



Next Louise Skabo, President of APST State Council presented Tony Roberts with an honorary membership of APST Inc. This award was to honour his outstanding work at Windsor Park Gardens where he has established parklands and gardens using Tasmanian native plants exclusively.



Plant of the Month: *Lotus australis*

Louise Skabo



Tasmania has one rare native Lotus and four introduced species from the mainland. However, Tasmania's *Lotus australis* is easily distinguished from the introduced Lotus species by its flowers - they are pink and purplish instead of yellow.

The soft pink *Lotus australis*, austral trefoil or native clover is to be found on Mariposa Beach on the east coast whereas the vivid pink is found on the west coast. It is found within *Poa* tussock grassland, low coastal shrubbery and dunes. Louise's photos show this attractive plant at its best.



The seeds and roots were eaten by indigenous people and because it is a legume it is also quite palatable to stock.

In addition it fixes nitrogen from the air and has potential as a component of native perennial pastures on the mainland plus it attracts native bees, caterpillars.

Speaker: Dr. Rebecca Jones from Tas Uni spoke on “Recovering the gene pool of a Tasmanian eucalypt species functionally extinct in the wild: *Eucalyptus morrisbyi*”

Genetic studies of many threatened plants are used as the basis for increasing species’ populations. By using data from genetic studies conservation strategies can be more effectively undertaken. Crucial questions for example: *Is it truly a rare species or population? What is the population size? How is the genetic diversity partitioned? Is the level of inbreeding abnormally high?* can be answered, thus helping to ensure resources are used where they are needed, thereby supporting an effective recovery plan for the species.



< *Eucalyptus morrisbyi* is listed as a most critically endangered species. It is one of the 30 priority plant species listed in Australia’s Threatened Species Strategy - one of the rarest eucalypt species in Australia with initially two documented locations at Calvert’s Hill on the South Arm Peninsula; a small population at Risdon opposite the Zinc Works; and a few remnant trees near Cremorne.

This ‘critically endangered’ listing is reinforced by the Risdon plants being regarded as sexually extinct as no fertile seeds have been found since 1980s. It reproduces asexually by lignotubers, because the gene count is lower than the number of stems. DNA fingerprinting of separate stems at this site shows that the gene pool dangerously small.

Photo: Anthony Mann

At Calvert's Hill the decline has been more recent and rapid because since 2012 when there were 1,915 trees that number by 2020 was just six. Only one of these is reproductive. There are seedlings but frustratingly, they are constantly browsed.

Rebecca presented drought and heat stress graphs from Calvert's Hill clearly corresponding with the *E. morrisbyi* decline. During that timespan stressed trees were further stressed by animals. By 2014 a caging trial showed that in uncaged plants there was poorer survival and a dramatic reduction in height and foliage cover.

So in 2014 as part of the management plan possums were trapped to some effect but to curb damage, in 2017 the remaining trees were banded to stop possums climbing and defoliating the struggling trees.



^ Banded tree.

Fencing >

As well, extensive fencing (shown by the red line at right) resulted in substantial regeneration of previously suppressed juvenile *E. morrisbyi* plants i.e. about 4,000 juvenile plants.

What's also important is that there was no loss of genetic diversity in the juvenile trees. DNA testing found they represented the pre-decline genetic diversity.



However as Rebecca noted, **there was no seed so a major part of the action plan is to conserve seed - to bank representative seed from all remnants and, equally important, to manage seed orchards to preserve as much of the pre-decline genetic diversity as possible.**

< Seed collecting in action.

In 1999 *E. morrisbyi* stands were established at Lutana and Geeveston. They included both Risdon and Calvert's Hill material. This work had two purposes: first it was a common environment research trial and second it was to be an *ex situ* conservation stand.

When growing *ex situ* trees there are risks to seed quality and purity; a concern about hybridisation with surrounding eucalypts; and what was referred to as intraspecific hybridisation i.e. between Risdon and Calvert's Hill trees. It is vital that the specimens planted are 'pure'.

Thus genetic work enabled them to assess whether these processes had occurred, also to determine whether orchards would be a good genetic resource. They also found that morphological screening is adequate and therefore cheaper for detecting hybrid seedlings from surrounding eucalypts at the *ex situ* seed orchards. However, genetic testing is still needed to identify intraspecific hybrids.

Through the testing they showed that plantings such as those at at Meadowbank and Brighton are a highly diverse, genetically representative source of Calvert's Hill seed for both in situ or *ex situ* *E. morrisbyi* conservation plantings.

The testing provided certainty for the purity of the plantings to be managed and showed that the *ex situ* orchards represent a good genetic resource.



Rebecca concluded with the work being done to increase the range of this endangered plant through 'assisted colonisation'. She described the planned and actual plantings of *E. morrisbyi* on the East Coast of Tasmania ranging from Marchwiell near Bream Creek to as far north as Flinders Island. The aim is to work with farmers on land restoration projects.

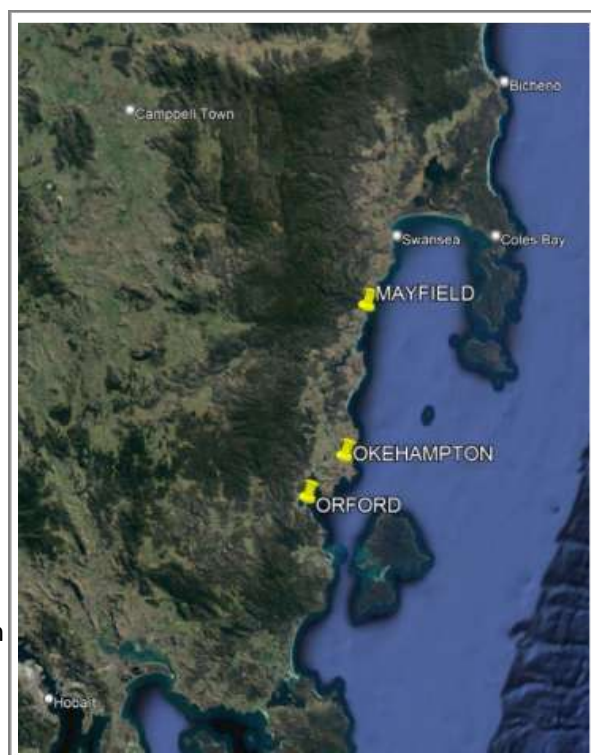
< *E. morrisbyi* being planted at Marchwiell.

There were three new plantings of 3,000+ trees at Orford, Triabunna and Mayfield in 2022 and in the first six months the plantings have been overwhelmingly successful with a 90+ success rate.

Through the translocation of this species additional 'conservation' plantings will be established to increase the area of occupancy, number of locations and the number of mature plants.

There will be continuous monitoring and collection of data from these and all remnant populations so that any threats are countered. Seed conservation will continue using representative seed from all remnant areas. Seed orchards will be managed to preserve as much of pre-decline genetic diversity as possible.

The presentation treated us to a geneticist's role in threatened species' conservation. The management actions by Rebecca and her group mirror those outlined by Magali Wright in her talk last month on orchid conservation and research.



Geneticists know so much more now and through scientific research are able to more accurately and reliably ensure that struggling plants can be made more comfortable and able be moved from the threatened lists. Members left the meeting with a positive view that *Eucalyptus morrisbyi* is on the 'land' to recovery.

Sunday, April 23 Autumn Plant Sale, Max Fry Hall, Trevallyn

Sale day was a pleasant, sunny Sunday. Around 8.30 am plants were transported to Max Fry Hall along with tables, chairs, display panels etc. Quickly and efficiently 57 trays were positioned along the grass bank and lined up on tables.



Members on sales got into position while many people with boxes full waited in line. Fortunately not for long as the efficient sales-desk team of 4 members rivalled the expertise to be found at a Woolies busy checkout.

Behind the scenes members were counting pricing sticks, collecting and sorting labels while out the front others answered questions, offered advice or simply helped where needed and of course the membership and publications table was drawing interest with four new memberships taken up on the day.



The sale was a success with almost 1200 plants sold with only 8 trays being returned to the nursery. As Janet noted, over the year we propagate over 2,500 plants in the small shade-house at the nursery - a significant achievement of which all the propagators should feel proud.

Thank you to Janet and those members who manage the organisation of our super efficient nursery.

Thursday, 4th & Saturday, 6th May Working Bees, Cambridge St. Reserve

The first activity in May was the working bees at Cambridge Reserve. A report written by Roy S in the Friends of the Cambridge Reserve newsletter contains lots of interesting snippets about the very important work that is underway by a small group of people. For example two large bags of *Cotoneaster* were removed from the area as part of the rehabilitation that is occurring at the reserve.

May General Meeting - Cambridge Street Reserve Report:

Andrew S. reported that there are two working bees at the Cambridge Street Reserve per month with a fair attendance of six members and six locals - one has since become a member. Tamar NRM has a presence and provides tools and occasionally a snack. Following the March burns two of the ten hot spots will be monitored to feed into future policy for the reserve. Two meetings with locals in which it was hoped to start a 'Friends of Cambridge St Reserve' group were unsuccessful. The twenty five percent of the reserve yet to be tackled for weeds is the toughest part. Andrew and Roy S. have geo-located the worst weed areas and the council promptly agreed to engage contractors to spray. Andrew praised the wonderful cooperation of the Council and their assistance with the work in the reserve.

Saturday May 6th Propagation, Windsor Park Nursery

Members' tasks included the usual cuttings plus this time Janet added cut material from the Windsor Park garden, in particular, a ground cover *Leptospermum scoparium*. Another task was the alphabetical sorting of the unsold plants as well as trays of new plants which were due to be moved to the outside benches. It was a well supported, productive session.

Tuesday, 16 May General Meeting

The Treasurer's report and Memorandum of Understanding with the West Tamar Council in regard to the Nursery at Windsor Park were accepted. Andrew S. told us that Tony Roberts is labelling native plants in the gardens at the Windsor Community Precinct and that Northern Group has volunteered to allow QR codes on the labels to be linked to pictures and descriptions on our web site.

Andrew asked for volunteers to add a 50 to 70 word description with a photo to fill gaps on our site. Based on a show of hands it was decided to proceed with six to eight volunteers. Andrew will provide a list of the plants needed. The meeting ended with a few reminders then it was time for POM.

Plant of the Month: *Thelionema grande*

Roy Skabo



Roy chose *Thelionema grande* known as the tufted granite lily.

This species is similar to our Tasmanian species, *Thelionema caespitosum*, but is larger in all parts.

It is quite a hardy species, frost tolerant but appreciative of lots of sunlight and some watering in warmer weather. It produces large numbers of bright blue star-like flowers on long stems over a period of several months in summer.

Roy's plant of the month, was in the form of a give-away.

The plant - just a couple of leaves attached to a single root, was put in the ground about five years ago and since then it had become substantial clumps of dozens of leaves and bulbs, each clump having a diameter of about 40cm.



The clumps were divided enabling Roy to give away numerous plants to appreciative members.

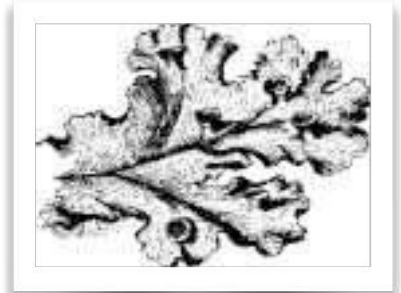
Speaker: Ian Blayden spoke on the topic 'Plant Evolution'

Here is his summary:

Single cell organisms, including bacteria, are believed to have developed in the earth's oceans as early as 3.5 billion years ago.

By 2420 - 2320 million years ago (My) cyanobacteria had evolved. Cyanobacteria had the ability to generate oxygen as a by-product of photosynthesis and this led to a gradual increase in atmospheric oxygen and the resultant development of green algae (1870 My), red algae (1200 My) and brown algae (800-700 My).

By 500 million years ago oxygen levels reached 10 percent thereby sparking a dramatic increase in the number of aquatic life forms including algae, and by 470 million years ago (Ordovician period) it led to the eventual colonizing of the land.

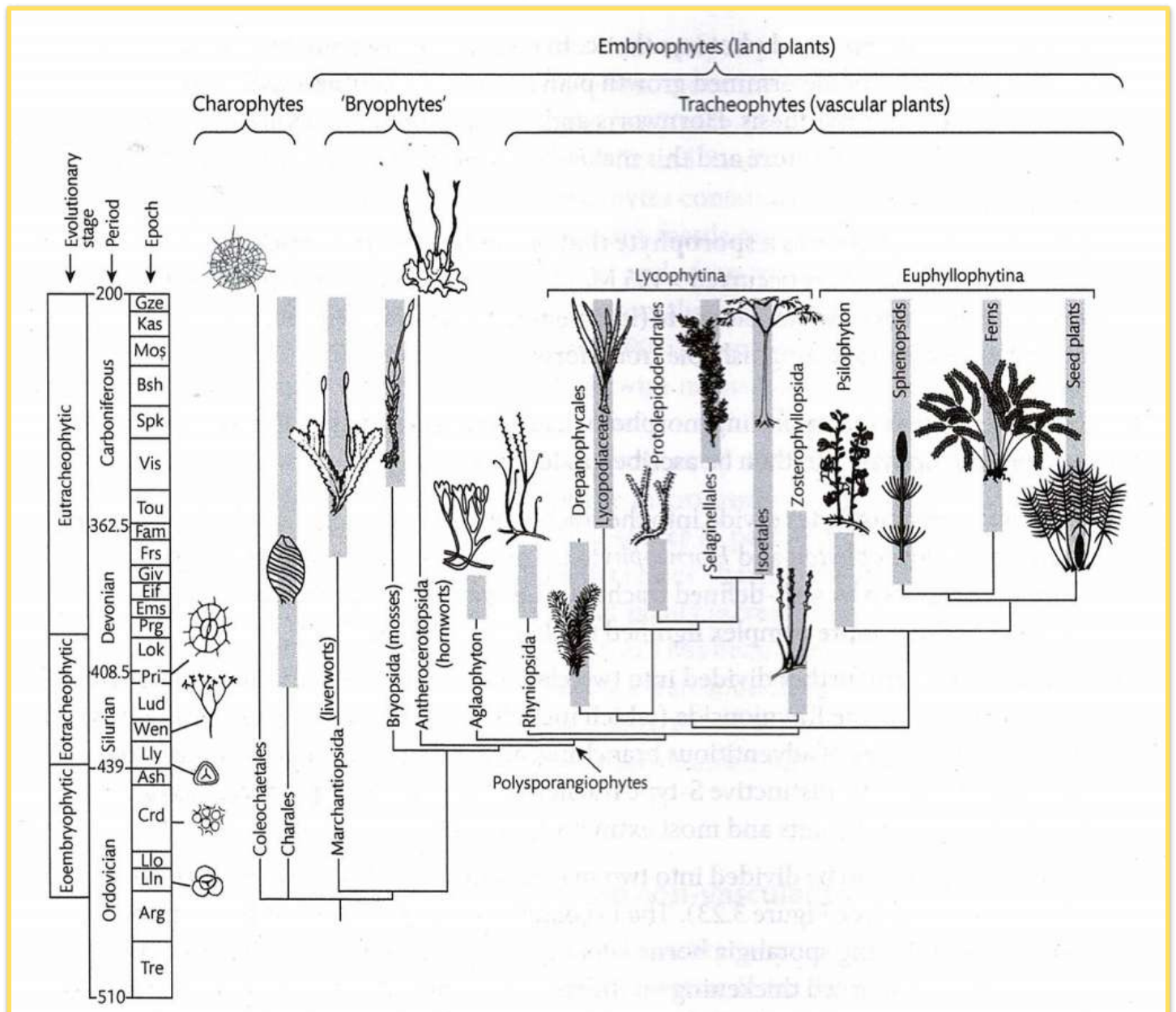


Ordovician plant >

The first land plants were non-vascular including mosses and liverworts characterised by a very limited root system. By the early Devonian (370 My) the growth characteristics, variety and extent of plant types evolved dramatically with the development of vascular plants.

The two main groups were the Lycophytes (club mosses) and the Euphyllophytes (essentially all the other significant vascular plant groups).

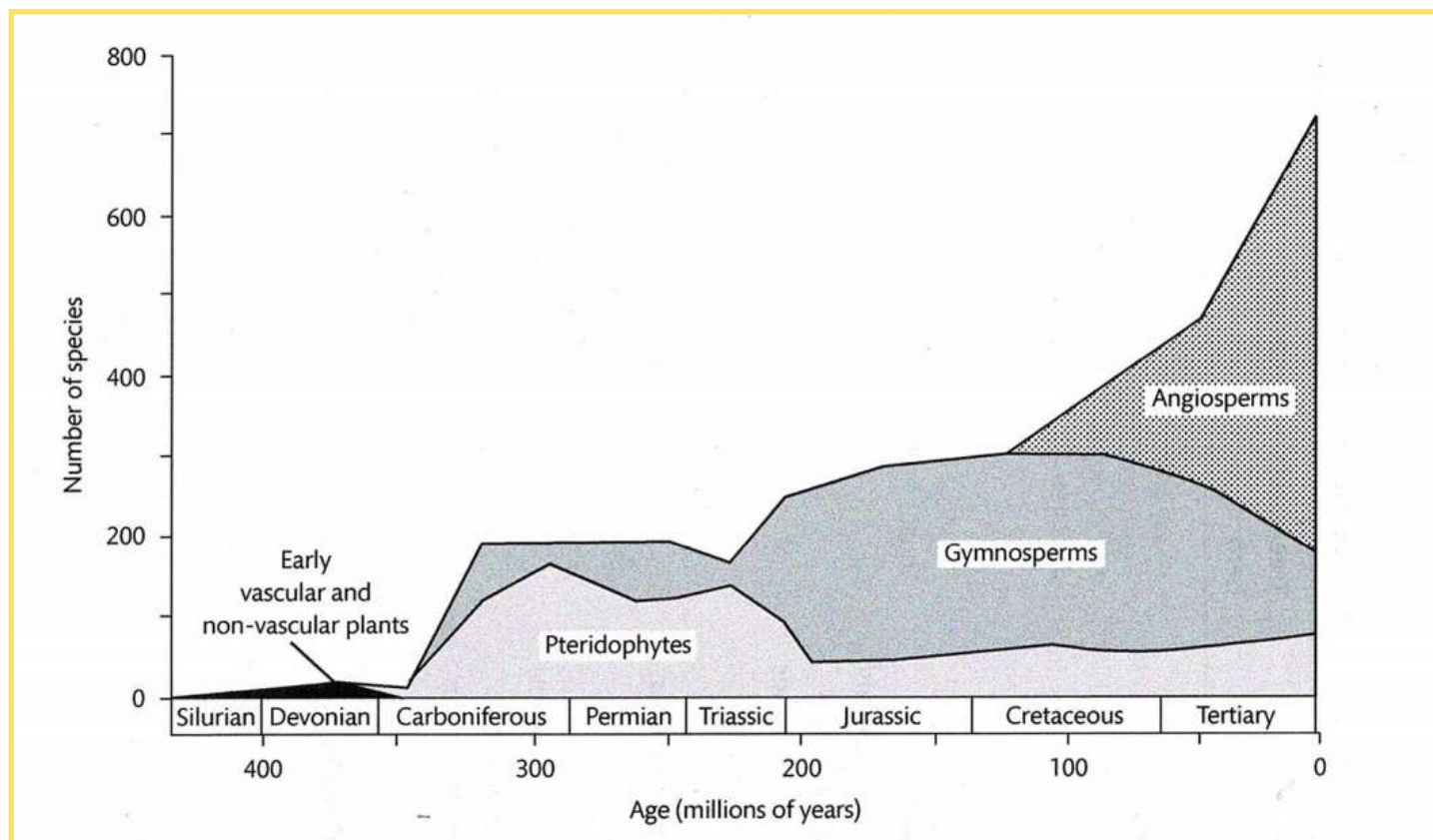
Plant Evolution Ordovician - Carboniferous



Both the spore producing plants (Pteridophytes) and seed producing plants (Gymnosperms) were beginning to prosper by the early Carboniferous, 350 million years ago.

Plant Evolution - Silurian to the Present

↓ Pteridophytes (spore bearing), Gymnosperms (seed bearing), Angiosperms (flower bearing)



The flowering plants (Angiosperms) evolved much later in the early Cretaceous (139 My) but soon developed to be the most dominant group in terms of distribution and number of species.

Why the principal plant groups developed as they did is a function of the complex interchange of global factors such as tectonics, sea levels, volcanism and ice ages along with local factors such as the condition of the soil and predation. It is worth noting however that over the period of plant evolution there have been 5 mass extinctions of animal species, but these episodes had minimal effect on plant evolution.

Two other points to note are:

1. The entire period of significant land plant evolution occurred over a period of 450 My, a small breadth of time compared to the preceding billions of years when organic life first appeared.
2. The first vertebrate land animal did not appear until the Carboniferous (350 My) although it is known that a small millipede type creature was probably wandering around in late Ordovician.



Below is an interesting list detailing plant development over the geological periods

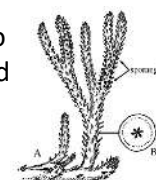
Cambrian: small, soft-bodied plants with simple branching and no differentiated parts. Green algae in oceans, no good evidence of land plants.

Ordovician: First terrestrial plants - non-vascular plants that reproduced with spores. Because they could not conduct water, they must have lived only in wet environments. >



Silurian: First vascular plants that could conduct water through tubes, but no differentiation into leaves, stems and roots. Photosynthesised and had stomata for respiration on every surface.

Devonian: First recognisable soils, so evolution of soil bacteria. Many plants were non vascular, many had no differentiation of seeds, leaves and stems. Early Devonian plants were small (most less than a metre) but had leaves, stems and roots. By Late Devonian there were many kinds of land plants forming forests, including giant trees. Seed bearing plants became common. Global CO₂ levels drop with the explosion of plant life. >



Carboniferous: Plants were similar to Devonian, with addition of horse-tails, club mosses, and scale tree. Ferns and tree ferns are very similar to modern plants. Many swamp-loving trees (*Lepidodendron*, *Sigillaria*) and primitive conifers appear.

Permian: Advanced conifers dominated as climate dried. Cycads and ginkgos appear. There were large forests in some regions.

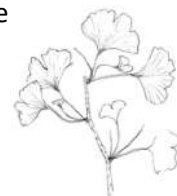
Triassic: Seed plants dominated the land. Cycads, ginkgos, and conifers were important plants. The seed fern *Glossopteris* was widespread in tropical regions.

Jurassic: Climate became wetter with widespread jungles. Conifers dominated. Cycads, ginkgos and ferns remained important.

Flowering plants appeared but were a minor part of the flora.

Cretaceous: Angiosperms became widespread, to become the dominant plants by the end of the Cretaceous. Many modern trees appear at this time. Conifers continued in colder environments.

Cenozoic: Grasses evolved and created the savannah ecosystem. Conifer forests spread in colder climates, and angiosperm forests in temperate and tropical climates.



Wednesday, 17 May Excursion, Mathinna and Paradise Plains

Report: Ian Thomas

On this morning nineteen members set off for Mathinna Plains and Paradise Plains in the northeast highlands. We convened at Targa and then drove the excellent dirt road past the sadly destroyed Diddleum Plains and along the Ben Ridge Road to our first stop at Mathinna Plains near the Ringarooma Road intersection.



Photo: DN

This extensive buttongrass plain separates the Ringarooma River catchment from the South Esk catchment and has a very interesting ecological and cultural history.

It's not that often that one can stand within a stone's throw of the sources for two major streams that flow in opposite directions.

After walking, or rather, hopping and splashing around the buttongrass heathland we talked about the extensive European history of the area and the much older Aboriginal occupation of the area.

Radio-carbon dating and pollen analysis indicates that the buttongrass moorlands are about 1,500 years old and that they were formed by the burning of rainforest which led to successional changes from *Sphagnum* moss and coral fern domination to a *Melaleuca* shrubland then to the present day buttongrass dominated system. The soils are derived from shales and mudstones of the Mathinna Beds and are not particularly fertile.



Interestingly, the removal of the trees led to permanent changes in soil structure and water tables that inhibited the re-establishment of forest trees.

We then drove back along the Ben Ridge Road to the wonderful Paradise Plains where a very congenial lunch was had alongside a *Sphagnum* fringed creek.



Photo: DN

< Paradise Plains ^

< Ben Nevis view

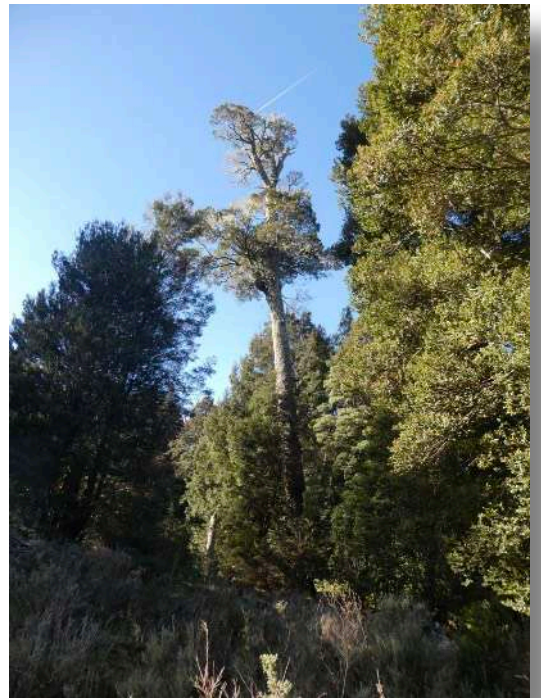


Once again, not much was in flower but everyone could see that a visit to the area in summer would be rewarded with a richly diverse flora of herbs and small shrubs.

< Colourful *Coprosma* berries making up for the lack of flowers to be seen on the day.

Below: *Gaultheria tasmanica* with contrasting lichen.

Below: Old Man Myrtle



Paradise Plains is underlain by granite and is considerably more fertile and undulating than the close by Mathinna Plains.

Radio-carbon dating, tree ring analyses and ecological surveys have revealed that Paradise Plains, like Mathinna Plains was once covered in rainforest. However, unlike the 1,600 year old Mathinna Plains, the treeless granite plains are only about 350 years old.

Ian and Noel 'drill' Mathinna Plains >

A small number of Aboriginal implements scattered across the expanse testify to the occupation of the area by First Nation people. The conjunction of two areas so close together and yet with very different histories demonstrates the folly of making generalisations about a region's history without a thorough evaluation of its component parts.



It is rare to be able to observe two such closely situated and distinctive plant communities in Tasmania that can both be described as Aboriginal landscapes. Of course, the fact that fire sensitive rainforest and tall sclerophyll forests still exist around the boundaries of both plains indicates that the number of extant Aboriginal landscape types in the highlands is almost certainly not two but at least four, along with many more combinations of sub-formations and plant communities.

The following excellent companions all provided details, identifications and observations on what proved to be a rather spectacular day.

Roy and Louise Skabo, Janet and Colin Hallam, Ian Thomas, Damien Naughton, Helen Tait, Roberta Blackwood-Beattie, Anna McGrane, Noel and Karen Manning, John Tabor (NW group), Lesley and Peter Anderson, Chris Calverley, Chris and Marissa King, Geoff Campbell, Gilly Zacks.

Photos: Louise Skabo and Damien Naughton



Photo: DN

From Louise, a couple of interesting extra photos:

Sign showing 3 different types of bullet holes!



< *Needle ice is a needle-shaped column of ice formed by groundwater.*

It forms when the temperature of the soil is above 0 °C and the surface temperature of the air is below 0 °C.



Liquid water underground rises to the surface by capillary action, and then freezes and contributes to a growing needle-like ice column. The process usually occurs at night when the air temperature reaches its minimum.

The ice needles are typically a few centimetres long. While growing, they may lift or push away small soil particles. On sloped surfaces, needle ice may be a factor contributing to soil creep. (Source: Wikipedia)

Tuesday, 23 May Working Bee, Tasmanian Native Garden, Caswell St., Mowbray

An important task for this working bee was to finish placing the new labels on approximately 50 plants. The stakes needed considerable effort and fortunately Keith and Ian B. excelled in this task. In the following couple of weeks Suzanne and Ros with help from Jim completed the meticulous task of gluing the labels onto the stakes. They are looking good.

Of course several other members continued the usual weeding, pruning tasks before it was time to enjoy a chat over warm drinks and tasty treats.

Rosemary's Garden

Bird watching is a pastime enjoyed by many of us. It is even more enjoyable if one can do it in their own garden. No garden is complete without birds and insects.

There are three main requirements to attract birds - water, shelter and food.

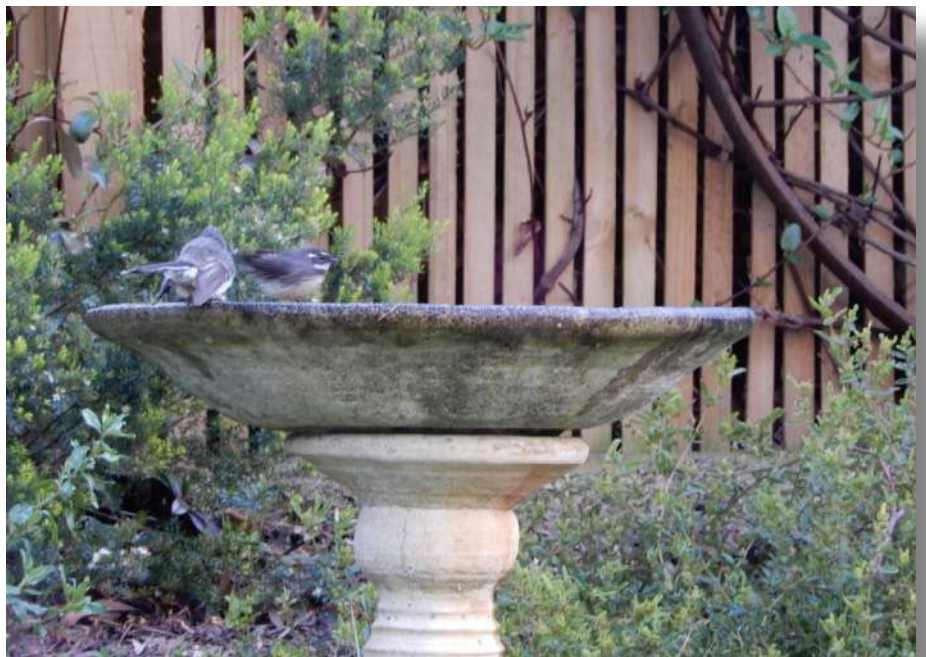
By selecting plants that provide nectar, fruit or berries many different species of bird can be attracted to your garden.

Shelter is best supplied by dense shrubbery in which birds can nest or get refuge from predators e.g. cats.

Water can come from bird baths or ponds. It is one of the quickest ways to attract birds to the garden.

It is best if there are several different heights in the shrubs or trees surrounding the water bowls.

I have several bowls of water strategically placed throughout the garden. Most are on old tree stumps.



Where trees have been felled, stumps were left at a suitable height so a dish could be placed on top. It is best if it is a minimum of 1 metre from the ground.



< When a multi trunk cypress was taken down, three trunks were left and a nice arrangement of multi bowls at different levels has become a favourite spot in early evening for the birds. There is also a dish at ground level. The green rosellas often use this instead of the higher bowls.

I have planted larger shrubs or trees next to the baths. The birds like sitting on the higher branches and diving down onto the bowl. There is often one on top as a lookout.

The birds regularly fly into the tree first and then go down or across to the bath, have a drink or wash then fly back to the higher branch. They can do this numerous times before they feel satisfied. If the dish is a large one, a small log can be placed across it, and it will be used as an extra perch.

In the summer the bowls have to be daily checked to make sure there is adequate water. They should also be located where the water will not get hot on sunny days.

Birds occupy different food niches so competition between them is minimised.

Grey fantails and swallows fly through the air for insects. Grey fantails also take insects from around the foliage. Pardalotes feed from insects on the foliage. The green rosellas like seeds, and so are often seen grazing through the lawn or grass areas. The New Holland honeyeaters and eastern spinebills feed on the nectar e.g. from banksias and kangaroo paws.

The superb blue wrens feed on the understorey.



On a summer or autumn evening they can all come for a drink from the various baths/bowls throughout the garden. On one late autumn evening within 15 minutes we were visited by scarlet robins, New Holland honeyeaters, eastern spinebills, green rosellas, silvereyes, grey fantails, Tasmanian thornbills, superb blue wrens and little wattlebirds.

The garden comes alive with their busy calls and the movements of happy birds feeling safe.



Plant that Pleases

Grevillea robusta, the silky oak

These photos were taken in early June 2014 at Rosario, Alentejo in Portugal.



While Australian blue gums are to be expected, having colonised many parts of the world, it was a surprise for me to see these striking examples of the Australian native thriving in this dry, hot inland garden.

These trees planted 20+ years ago, first attracted attention in Angola where their owner grew up surrounded by them.

G. robusta trees were used to provide shade for the coffee plants because it was a dappled rather than solid shade.

They were some of the first trees he planted when he established the garden in Rosario.



Same trees >

Photo taken June 2023

Even though it was summer on this visit there was no glorious colour. The trees, while 'robust' and healthy were not yet in flower - disappointingly late this year.



My apologies for the delay in getting this online as it became a little more difficult than anticipated from the other side of the world.
KPallett editor