

### IN THIS ISSUE:

- WA's Undescribed Orchids
- Introducing Our Committee
- Orchid of the Month - *Pyrorchis forrestii*
- My ADORP Orchids - *P. granitica* and *P. gracilicordata*
- 2021 WANOSCG Photo Comp
- Walpole Wilderness Bioblitz
- SRG Field Trip Reports
- *Drakaea confluens* Survey
- *Th. dedmaniarum* Survey
- November flowering orchids

**Next General Meeting:**  
7:30pm Wed 17 Nov 2021

#### VENUE FOR NOVEMBER MEETING:

G33 Bayliss Lecture Theatre, Crawley  
Campus, UWA. Turn right into Fairway  
Entrance 4, Car Park P43.

[Click here for a map](#)

#### The Committee:

**President** – Jon Warren  
**1<sup>st</sup> Vice President** – Ramón Newmann  
**2<sup>nd</sup> Vice President** – Andrew Brown  
**Secretary** – Pat Richards  
**Treasurer** – Jay Steer  
**Committee Members** – Kevin Uhe,  
 Debbie Proudfoot, Bill Gaynor,  
 Graeme Walker, Graham Warren

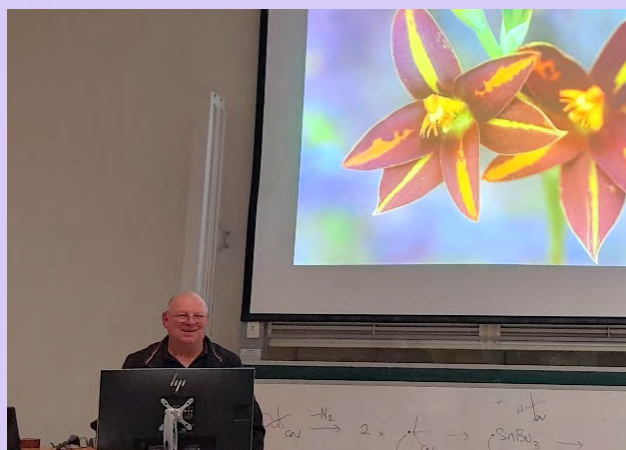
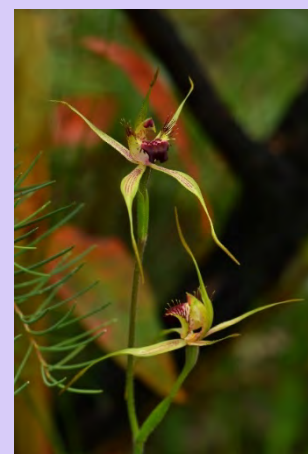
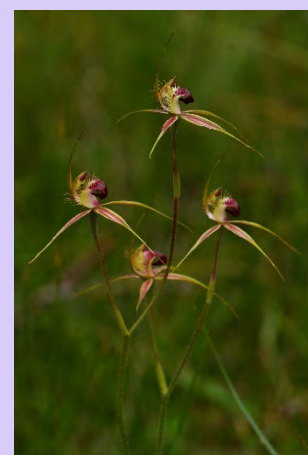
**Bulletin Editor** – Ian Puddey

### The Joys of Discovery

We all know the joy and delight when we see any species of Western Australian orchid for the first time. That joy must be magnified at least tenfold when you are the first person to recognise distinct differences that characterise a new species. Andrew Brown has been at the forefront of identifying, characterising and naming Western Australian orchids for over 40 years and has collaborated in the formal description of over 140 new Western Australian species and subspecies. It was therefore a privilege to hear him present at our October general meeting on the topic of W.A.'s undescribed orchids. His talk is the basis for the lead article in this month's Bulletin.

Such discovery however, doesn't just happen by chance. It requires careful research and a broad base of knowledge and experience that helps develop a keen eye for those features that mark a new species as distinct. Many WANOSCG members have been co-workers in the detection of new W.A. orchid species and subspecies, and their ongoing mentoring and education of fellow members will be essential if opportunities for new discoveries are to be maximised.

The good news is that such discovery not only continues apace, but is actually accelerating with Andrew estimating that there are 60 currently recognised undescribed Western Australia orchid species and more likely in the future.



Andrew Brown addressing the WANOSCG October General Meeting, Fox Lecture Theatre, The University of Western Australia.

*Caladenia brownii* named in honour of Andrew Brown who was one of the first to recognise it as distinct

# WESTERN AUSTRALIA'S UNDESCRIBED ORCHIDS

Andrew Brown

## Naming of Western Australian Orchids

Two hundred and thirty years ago, Archibald Menzies, surgeon and naturalist aboard the HMS Discovery, was the first European to make collections of Western Australian orchids. Menzies made plant collections from various sites onshore in the vicinity of present-day Albany and three orchid species were subsequently named from his specimens including one bearing his name - *Leptoceras menziesii*. The other species were *Caladenia flava* and *Diuris longifolia*. Robert Brown described all three species in 1810.

Jump forward 120 years and by the time the first book on our orchids, *West Australian Orchids* by Emily Pelloe, was published in 1930 an additional 120 orchid species had been named.

Jump forward again and at the time the first edition of *Orchids of South West Australia* by Noel Hoffman and Andrew Brown was published in 1984 133 species were known, just 10 more than in 1930. However, a resurgence in orchid naming then took place with the number of formally described species rising to 394 in 2021, a threefold increase in the number of recognised species.

Researchers involved in recent orchid naming include Mark Clements, David Jones, Chris French, Garry Brockman, Jeff Jeanes, Stephen Hopper, Ryan Phillips and Andrew Brown.

WANOSCG members have been instrumental in the survey and discovery of many of these new orchid species.

The table below shows the change in the number of recognised species in a range of genera at different times during the 211 years since Robert Brown described the first Western Australian orchid species in 1810.



*Diuris longifolia* (Purple Pansy Orchid) was one of the first named Western Australian orchid species

	1930	1965	1984	2008	Now
<b>Caladenia</b>	46 species	40 species	46 species	120 species	133 species
<b>Diuris</b>	8 species	8 species	6 species	44 species	60 species
<b>Drakaea</b>	4 species	4 species	3 species	10 species	10 species
<b>Eriochilus</b>	4 species	3 species	2 species	6 species	7 species
<b>Paracaleana</b>	1 species	1 species	1 species	12 species	15 species
<b>Prasophyllum</b>	16 species	20 species	17 species	29 species	29 species
<b>Pterostylis</b>	12 species	15 species	13 species	74 species	90 species

## New Orchid discoveries

Although a large number of Western Australian Orchids have been formally named, particularly since 1984, new species are still being discovered – both as living plants in the wild and as Herbarium collections that are not represented by living plants\*.

\*Despite searches, plants in these collections have not been re-located in the wild. They may be extinct or if still extant are likely to be very rare.

As at October 2021 there are an estimated 60 undescribed Western Australian orchid species comprising:

- 8 *Caladenia* species
- 1 *Calochilus* species
- 1 *Corybas* species
- 3 *Cyanicula* species
- 15 *Diuris* species (likely more)
- 2 *Eriochilus* species
- 2 *Paracaleana* species
- 5 *Prasophyllum* species
- 15 *Pterostylis* species (likely more)
- 8 *Thelymitra* species

## Phrase names

When a new species is recognised as distinct (i.e. it is considered different to any named species) it is provided a phrase name which includes a collection number at the Western Australian Herbarium. For example, the specimen from which the phrase name *Caladenia* sp. 'Wandoo' is



An example of an undescribed WA orchid species is *Caladenia* sp. 'Kellerberrin' (Kellerberrin Spider Orchid)

derived has the collection number G. Brockman GBB 671. The full phrase name in this instance is therefore *Caladenia* sp. 'Wandoo' (G. Brockman GBB 671). Another example is *Pterostylis* sp. 'Southern Granites' (W. Jackson BJ256).

Once they are identified as representing the same species other specimens are provided the same phrase name. This is similar to having a type specimen for a formally named species.

It should be noted that phrase name species are considered potential rather than actual new species. Considerable field and Herbarium research is required before a decision is made to formally name a species and not all phrase named species will be formally described.

## Genera and species

The following is a brief account of currently known unnamed Western Australian orchid species that are considered distinct.

### *Caladenia*

*Caladenia* sp. 'Blue Lake'; *C.* sp. 'Central Wheatbelt'; *C.* sp. 'Early Wheatbelt'; *C.* sp. 'Kellerberrin'; *C.* sp. 'Murchison River'; *C.* sp. 'Sedges'; *C.* sp. 'Wandoo' and *C.* sp. 'Wannamal' and *C. caesarea* subsp. 'Mooradung'; *C. flava* subsp. 'late red' and *C. longicauda* subsp. 'Pallarup'.



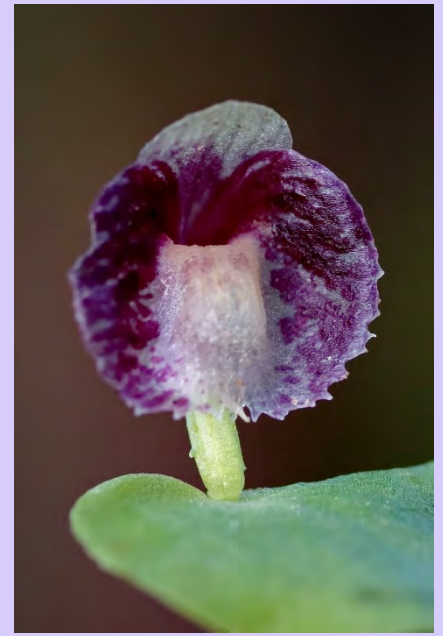
*Caladenia* sp. 'Early Wheatbelt' (Early Wheatbelt Spider Orchid)



*Caladenia* sp. 'Sedges' (Sedge Spider Orchid)



*Calochilus* sp. 'Boyup Brook' (Boyup Brook Beard Orchid)



*Corybas* sp. 'Hammersley Inlet' (Hammersley Helmet Orchid)



*Caladenia caesarea* subsp. 'Mooradung' (Mooradung Mustard Orchid)



*Cyanicula* sp. 'Eneabba' (Early China Orchid). Photo Margaret Petridis

***Calochilus***

*Calochilus* sp. 'Boyup Brook'.

***Corybas***

*Corybas* sp. 'Hammersley Inlet'.

***Cyanicula***

*Cyanicula* sp. 'Boyatup'; *C.* sp. 'Dale' and *C.* sp. 'Eneabba'.

***Diuris***

*Diuris* sp. 'Albany Highway late'; *D.* sp. 'Arrowsmith late'; *D.* sp. 'Augusta'; *D.* sp. 'Chapman Valley'; *D.* sp. 'Kojonup'; *D.* sp. 'Eneabba'; *D.* sp. 'Late Northern'; *D.* sp. 'Newdegate'; *D.* sp. 'Parmango Road'; *D.* sp. 'Piara'; *D.* sp. 'Rocky Gully'; *D.* sp. 'Scaddan'; *D.* sp. 'Tone River'; *D.* sp. 'Toolinna' and *D.* sp. 'Wongan Hills'. However, the genus is being actively worked on and there are likely to be additional new species uncovered as research continues.

***Eriochilus***

*Eriochilus* sp. 'Eastern Granites' and *E.* sp. 'Merivale'.

***Paracaleana***

*Paracaleana* sp. 'Mt Cooke' and *P.* sp. 'Northampton'

***Prasophyllum***

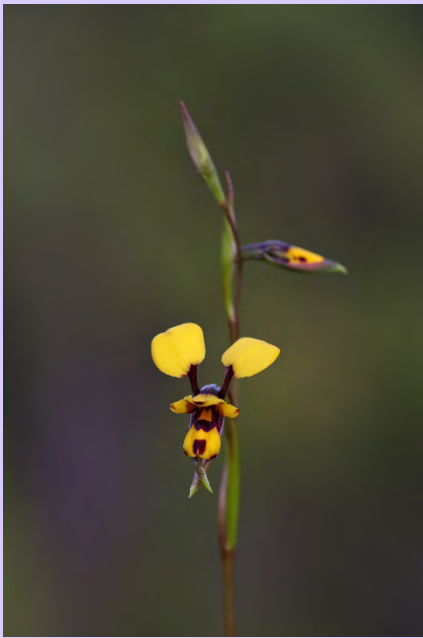
*Prasophyllum* sp. 'Brookton Highway'; *P.* sp. 'crowded'; *P.* sp. 'early'; *P.* sp. 'south coast' and *P.* sp. 'striped'.

***Pterostylis***

*Pterostylis* sp. 'bloated'; *P.* sp. 'Boyup'; *P.* sp. 'Cocklebidy'; *P.* sp. 'dainty green'; *P.* sp. 'Karridale'; *P.* sp. 'large fawn'; *P.* sp. 'limestone'; *P.* sp. 'Murchison'; *P.* sp. 'northern'; *P.* sp. 'Paynes Find'; *P.* sp. 'robust'; *P.* sp. 'Scott River'; *P.* sp. 'southern granites'; *P.* sp. 'sparse' and *P.* sp. 'White Gums'.

***Thelymitra***

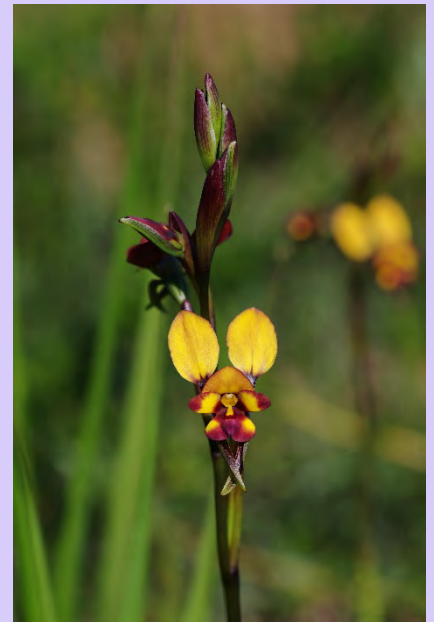
*Thelymitra* sp. 'Denmark'; *T.* sp. 'Forrestania'; *T.* sp. 'Kalbarri'; *T.* sp. 'Late Northern'; *T.* sp. 'Murchison'; *T.* sp. 'Ongerup'; *T.* sp. 'South Coast' and *T.* sp. 'Southern Granites'.



*Diuris* sp. 'Albany Highway Late' (Late Bee Orchid)



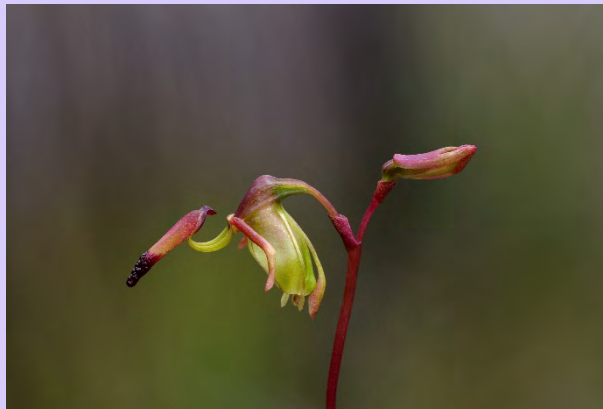
*Diuris* sp. 'Toolinna' (Cliffs Donkey Orchid)



*Diuris* sp. 'Late Northern' (Dark Donkey Orchid)



*Eriochilus* sp. 'Merivale' (Merivale Bunny Orchid)



*Paracaleana* sp. 'Mt Cooke' (Forest Duck Orchid)



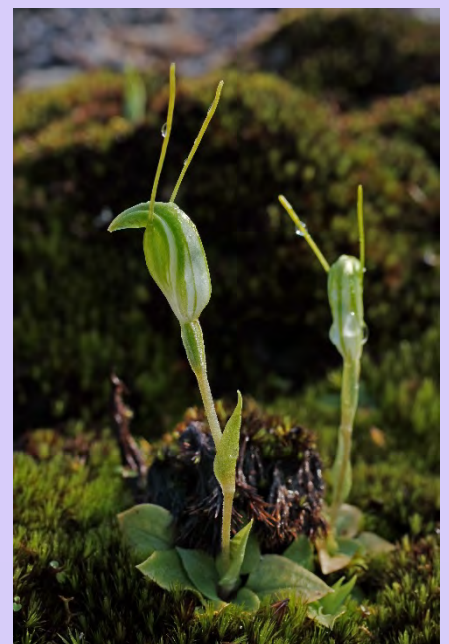
*Prasophyllum* sp. 'South Coast' (South Coast Leek Orchid)



*Pterostylis* sp. 'Cocklebidy' (Cocklebidy Rufous Greenhood)



*Pterostylis* sp. 'Karridale' (Karridale Bird Orchid)



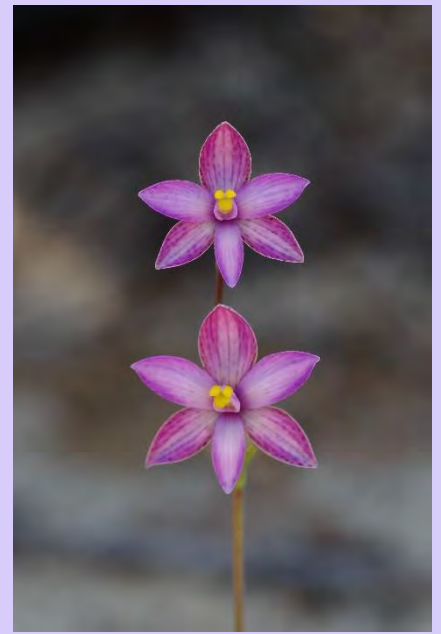
*Pterostylis* sp. 'Southern Granites' (Southern Granite Snail Orchid)



*Thelymitra* sp. 'Forrestania' (Forrestania Sun Orchid)



*Thelymitra* sp. 'South Coast' (South Coast Sun Orchid)



*Thelymitra* sp. 'Kalbarri' (Northern Curly-locks)

This article provides a brief account of the 60 currently recognised undescribed Western Australia orchid species. However, there are almost certainly many more that await discovery as field and Herbarium studies continue.

All images in this article by Andrew Brown (except where noted)

## Upcoming Field Trip - Graham Warren

### **WANOSCG November Nature Walk in Northcliffe**

Join us for a guided tour of the Northcliffe area with Andrew Brown.

On the 20<sup>th</sup> and 21<sup>st</sup> November with a casual dinner and get together at **The Cow and Calf Bistro at the Northcliffe Hotel** from 6pm. There are no special menu arrangements just order what you want for yourselves we are just booking seats and tables to sit at.

Please notify me if you will not attend the Cow and Bistro so we don't overbook tables and seats.

Contact Graham Warren by emailing the [wanoscg@gmail.com.au](mailto:wanoscg@gmail.com.au) or [redacted] with your names and mobile phone details for all that are attending as well as an emergency contact with a phone number. If you are heading down Saturday, we will meet at a spot at 11am. Please indicate to me if you think you are going to take this option so we can schedule to 11am meeting spot.

As stated before, numbers will need to be confirmed to the Hotel to reserve tables and an area in advance so I will need all attendees confirmed by the 7<sup>th</sup> November.

Accommodation is for you to organise yourselves and please be aware self-contained rooms and chalets are booking up for the summer very quickly at the moment.

Accommodation, camping and hotel details at <http://northcliffe.org.au/accommodation.html>. You can also stay in Pemberton as that is only 25 minutes away.

More details of daily agenda to be supplied closer to the date once numbers are known.

# Introducing Our Committee Members

– Ramón Newmann

## **How many years have you been a member of WANOSCG? What led to you becoming a member?**

This is my 15<sup>th</sup> year as a member and 13<sup>th</sup> as a committee member. Trish and I joined in 2007 after hearing about WANOSCG through another group of friends who also enjoyed photographing nature.

## **How did you first become interested in orchids?**

My interest in our native orchids started on field trips into the bush with members of the WA Underwater Photographic Society who loved taking land-based nature shots in the winter when it was a bit murky underwater. A couple of WAUPS members were also WANOSCG members so the seed was sown, as it were.

## **Which orchid is your favourite?**

It's hard to pick a favourite, but I really enjoy the brightness and colours of the N, S and E Queens of Sheba. The laid-back Lazy Spider Orchid is pretty amazing with its stripy pants.

## **Are there any orchids left on your bucket list to find and if so, which one(s) are you most interested in finding?**

There are quite a few orchids that I've yet to see (just how many Snails could there possibly be?), but the ones that spring to mind are the Majestic Spider Orchid (*Caladenia winfieldii*) since I've seen the other pink spiders; what is arguably the 'true' Queen of Sheba (*Thelymitra variegata*) on the Swan Coastal Plain; and of course, one of the Underground Orchids – though I would not want to put any of them at risk just so that I could see and photograph them.

## **Do you have a favourite memory from any group or personal field trips that you would like to share?**

Too many to mention! I have great memories of field trips where we are all excited about finding a particular orchid or range of orchids and we talk about it all over a fire or a dinner. We've been so lucky having such a wonderful State to wonder over and such a great group of like-minded friends and such great native orchids.

## **As a member of the WANOSCG committee, what's your ultimate goal for the organization? Is there anything in particular you hope to see achieved over time?**

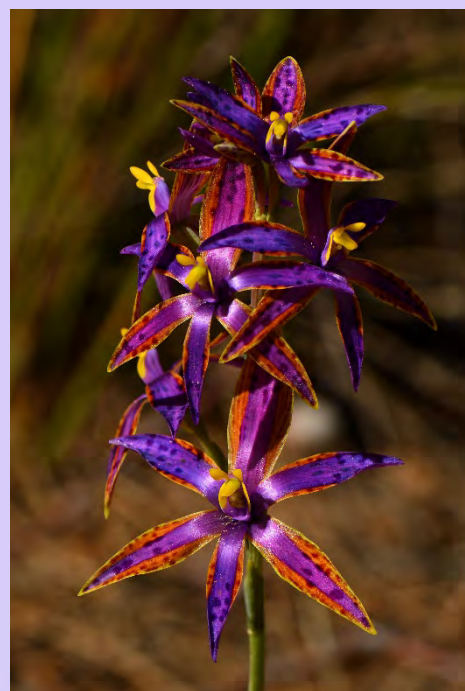
I am keen to take WANOSCG further along the interconnected paths that it has followed since its inception – namely helping with the conservation of our native orchids directly, and indirectly by informing other organisations and individuals about these orchids, and the enjoyment of its members in the pursuit of these goals. In order to do all of that in a sustainable way requires structures and guidelines for us to work within, without forgetting that we are also trying to have some fun along the way. This is what I'd like to continue to pursue.



Ramon & Trish - Lake Logue, August 29, 2021



*Caladenia multiclavia* (Lazy Spider Orchid) – image by Ian Puddey



*Thelymitra variegata* (Queen of Sheba) – image by Ian Puddey

## Orchid of the Month – November

### *Pyrorchis forrestii* (F.Muell.) D.L.Jones & M.A.Clem. (Pink Beaks)

Andrew Brown

Named by David Jones and Mark Clements in 1994, *Pyrorchis* comprises two currently recognised Australian species with one of these, Red Beaks (*P. nigricans*), found across southern Australia and the other, Pink Beaks (*P. forrestii*), endemic to the south-west of Western Australia. It is this second species that will be covered in Orchid of the Month for November.

Pink Beaks was originally named as a species of *Lyperanthus* by Ferdinand von Mueller in 1882 from specimens collected near the Stirling Range. Interestingly, to my knowledge it has not been found in that area since. The species has also been illegally named *Fitzgeraldia forrestii* and has been informally placed in *Burnettia* and what was once a proposed new genus *Rostranthus*, however, neither of these latter two combinations has been validly published. Finally, the species was placed in the newly erected genus *Pyrorchis* by David Jones and Mark Clements in 1994.

The species is named in honour of Sir John Forrest, later Baron Forrest, explorer, Premier of Western Australia and a Commonwealth Minister.

Pink Beaks is a sweetly perfumed species 100–300 mm high with a large, smooth, fleshy, dull green, narrowly heart-shaped leaf 40–80 mm long by 20–40 mm wide and up to seven pale to deep pink (more rarely white) flowers 25–30 mm across, characterised by their prominently curved, hood-like dorsal sepal, forward spreading petals and lateral sepals and downcurved labellum with upcurved margins and several rows of lamina calli. The species often has a second smaller basal leaf held opposite to the main leaf.

Flowering starts in late October and continues through November into early December.

Pink Beaks is found between Augusta and Albany, growing in sandy-clay and clay soils in seasonally wet flats and shallow soil pockets on granite outcrops. Plants form large colonies of leaves through vegetative reproduction but flower only in the season following summer fire.

Pollination is by native bees attracted to the flowers by droplets of nectar at the base of the labellum.



*Pyrorchis forrestii* (Pink Beaks) – image by Andrew Brown

## WANOSCG Grants Program – Jon Warren

After a pilot to determine the best way to manage a grants program, WANOSCG management committee has finalised the process. As a result, WANOSCG will be making available a limited number of grants up to \$5,000 to support native orchid research and/or conservation projects in Western Australia.

The main change to the original process is the WANOSCG management committee can call for or members can request support for a project at any time. The terms of application for grants and an application submission pro forma can be found in the Membership section of the WANOSCG website ( <https://wanoscg.com> ) but if you are not able to access then request a copy via email at [wanoscg@gmail.com](mailto:wanoscg@gmail.com).



## My ADORP Orchids

### *Paracaleana granitica* and *Paracaleana gracilicordata*

David Stevens

I got involved with the ADORP granite ducks back in 2014, at the request of Bill Gaynor who was looking for some help. Given that in those days I struggled to tell my ducks from my elbows I was dubious how much assistance I could be. In the end all was well as it turned out I had a fairly good eye for spotting them and I could count, which kind of covered the basics.

When we started, we were told of six rocks with duck populations: a quick study of the herbarium records suggested that these populations consisted of two rocks with only *P. granitica*, one with only *P. gracilicordata*, and three rocks with both species present. If you assume this distribution, then distinguishing between the two species was a nightmare as plants on two different rocks, allegedly of the same species, looked nothing alike and, in places where there were meant to be both species, the plants all looked the same. We very rapidly came to the conclusion that *P. granitica* actually only grew on one rock, where it grew on its own, and therefore by inference all the granite duck orchids found on other outcrops were *P. gracilicordata*: a view it turns out in which we were not alone. I specify "granite" ducks as we have found several populations of *P. nigrita* happily growing in the moss beds which I presume are put there just to keep us on our toes.

Looking for new granite duck populations has a distinct advantage over other orchid species in that they only grow in the moss on granite outcrops, so the boundaries of the search area are very delineated: find your rock, look in the moss, move on. Access to high aerial photographs, combined with mapping software from OziExplorer, has been a real boon. Not only can we locate little outcrops not shown on topographic maps, but we can pinpoint the areas of the big outcrops that are worth looking at. Unfortunately, I have found around 1000 moss patches that are worth investigation, and that is just in the immediate vicinity of the known populations around Jarrahdale and the Monadnocks. Given that we also have populations 50km away down near Waroona, there are a lot of rocks to investigate. Whilst not wanting to appear defeatist, it is possible we will not manage to visit all of these. To this end, we have also been recording where we have looked. Bill and I were not the first duck hunters, and while our predecessors can all tell us where they found the ducks, there is no record of where the ducks weren't. I know that not finding an orchid is not proof of its absence but, given how many potential places there are, I would rather look somewhere new than revisit previously searched sites.

Bill and I started with 6 rocks on which to count duck orchids, Fred and Jean Hort told us of three more, and we have found a further four. As the list grew, the time it took to count the ducks also increased. Even with the ranks of the duck hunters being swelled by many welcome new recruits, we were spending most of the season monitoring what we had already found. To facilitate the counting, in 2019 we installed permanent quadrats on many of the rocks so it is now possible to count all the populations in a couple of days, provided we do not stop for too many jam and cream scones. This obviously frees up time in the season for visiting more rocks. We did whole population counts when we installed the quadrats and will repeat those periodically to build up a relationship between the quadrat numbers and the population as a whole.



David Stevens searching the granites for ducks



Bill Gaynor laying string around a quadrat



Bill and David using GPS to search for a previously defined quadrat



'Bow to your partner' - *Paracaleana granitica* - Granite duck orchid



'Best mates' - *Paracaleana gracilicordata* - Slender-leaved duck orchid.  
All images in this article by Ian Puddey

To save time in the flowering season, we installed the quadrats in August when only the leaves were showing and of course, like all good Adorp-ians, we counted how many there were. When we do the flower counts, the leaves have generally withered and gone, and I was surprised by how few of the leaves resulted in actual flowers. In 2019, between 20-25% of the leaves in the quadrats produced flowers. That year we counted approximately 2500 flowers, which equates to a total population of between 10-12,000 plants spread over 12 rocks. While that number seems quite healthy, over one third of those grow on just one rock and moss is such a fragile environment. In 2010, I was out walking on Mount Cooke and landed up taking a shortcut back to the car via a perfect granite outcrop for ducks: although at the time I didn't recognize this. Last year, with promises of duck habitat nirvana, the team pushed their way through the bush back to this outcrop, to discover a virtually barren rock. There was no obvious reason why the moss had gone, but gone it had and I rather doubt it will be back even if I revisit in another 10 years. Over the years we have seen damage from recreational 4WDs, illegal firewood collection, feral pigs and, worst of all, motorbikes and I should like take this opportunity to commend the folks at DBCA for their excellent efforts blocking access to some of the rocks we felt were most at risk.

In 2020, to assist Kevin Uhe's efforts to get the status of *P. granitica* upgraded, we conducted a thorough search of the outcrops, then numbering 12, basically looking for signs of *P. granitica* hiding in plain sight amongst the *P. gracilicordata*. As one of the orchids is called the "Slender-leaved duck orchid" it seemed logical that looking at the leaves might be a sensible place to start. Not wanting to make assumptions about what was growing where, we simply marked any that looked significantly different, be it by colour, size or shape, from those surrounding it. Not one of the marked plants subsequently grew into anything that appeared even vaguely different from the rest of the surrounding flock. So then it was down to looking at the flowers, which was an interesting exercise as I found it hard to catalogue our populations into the two pigeon holes available. I am not going to use the term species, as that kind of talk is far above my pay grade, but here is my two pennies' worth!

I still think that *P. granitica* only grows on one rock and we have eight rocks that appear to contain classic *P. gracilicordata*. The other three rocks are less clear. We have one rock that may have two forms of duck orchid in that they look slightly different and appear to flower at different times. One is probably *P. gracilicordata*, however, the other does *not* look like *P. granitica*. We have two rocks with a bigger, more robust form of duck orchid with a much broader labellum than typically associated with *P. gracilicordata*, but neither is the labellum pointing below the horizontal as is typical of *P. granitica*. The flowers on both rocks look similar, however, those on one rock are always the last to flower and, just to be contrary, those on the other rock flower earlier. Neither rock flowers when *P. granitica* flowers.

At the end of last season we found a new population of what looked like *P. gracilicordata*, on very long stalks. They were tall, in excess of 10cm, which makes them a tad oversized for your typical granite duck. Something to investigate further this year!

If anybody knows the history around the discovery of the populations near Waroona, I would love to know. I presume it was a chance finding rather than somebody knew of the ducks at Jarrahdale and decided the next logical place to try was some granite outcrops more than 50km away. After all, there are granites around Northcliffe: has anybody looked there?

## Celebration of our Octogenarian and Nonagenarian members – Jon Warren



Noel Hoffman, Alex George, Margaret Fox, Jack Eborall and Matz Dahlkamp – image by Justin Brown

A lovely WANOSCG tradition is the use the October meeting as celebration of our Octogenarian members. This year we had to make an adjustment as Noel Hoffman and Jack Eborall both reached the heady heights of Nonagenarian. We sincerely wish to thank our Octogenarians and Nonagenarians and honour your ongoing involvement and contributions to our group.

WANOSCG has 15 Octo-nonagenarians with 4 based in the regions and one interstate. While most of our esteemed elders were unable to make the meeting we were very fortunate to have Noel, Matts, Margaret, Alex and Jack along to enjoy the celebratory cake and supper.

## 2021 WANOSCG Photographic Competition - Voting

The 2021 Photo Comp closed on 18 Oct after receiving 34 excellent valid entries - all according to this year's topic: "**WA native orchids named after WANOSCG or its Members**".

All of the valid entries are published in the following pages of this edition of the Bulletin for your enjoyment and for voting by those who are eligible.

### Voting instructions for Members

- All current WANOSCG Members are eligible to cast a single vote:
  - Ordinary, Family, Associate, Life or Honorary Members
  - Regardless of where they live or whether they entered the competition or not.
- Eligible votes are to be submitted as follows:
  - by email to [wanoscg@gmail.com](mailto:wanoscg@gmail.com)
  - or by post to PO BOX 323, Victoria Park, WA 6979
  - **Subject field: "2021 WANOSCG Photo Comp Vote"**
  - **Stating your name and the selected photograph's reference number**
- All votes **due on 15 Nov 2021** (*Monday before November General Meeting*).

### Winner

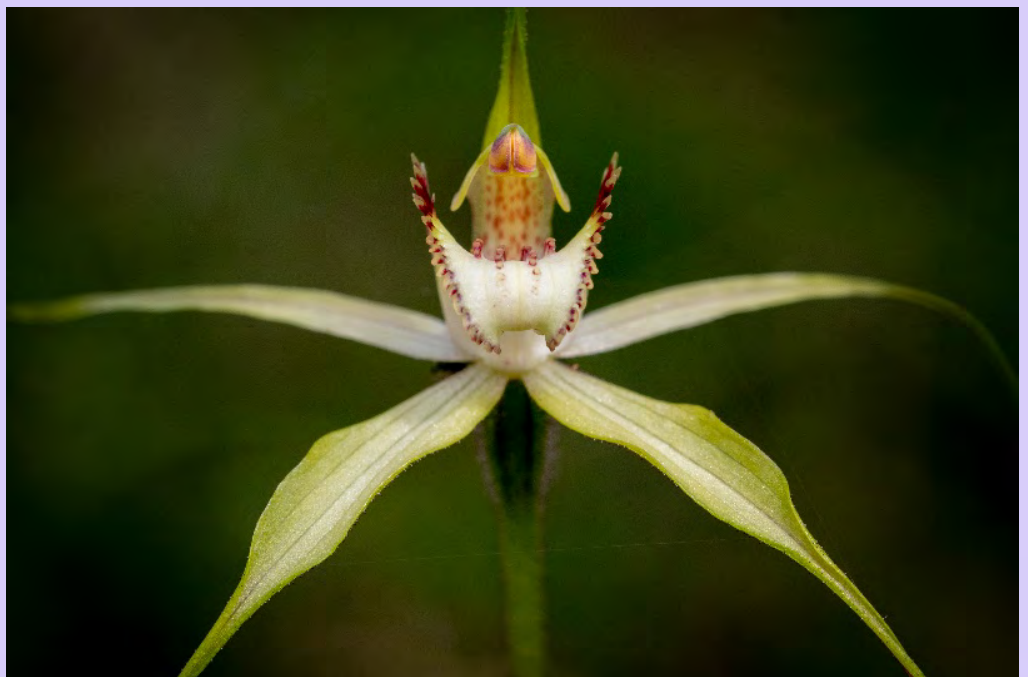
- The winner will to be determined by the WANOSCG Committee appointed adjudicators based on the valid votes
- All entries will be presented at the November General Meeting on 17 November 2021
- Winner will be declared, and prize presented at the November General Meeting
- Winning photo and runners-up will be published in the Bulletin, WANOSCG website and Facebook page

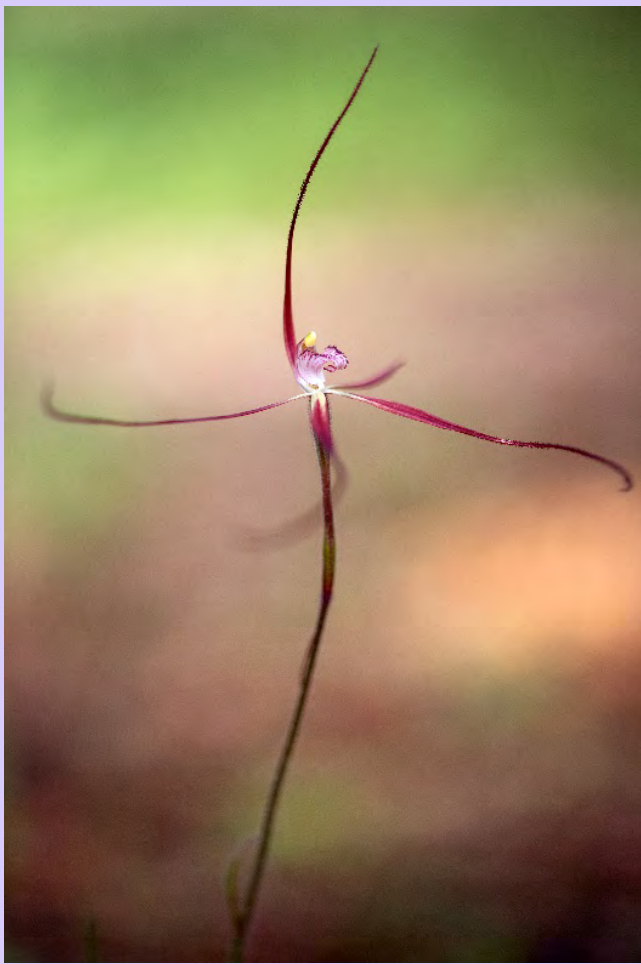
Entry 1 - *Caladenia footeana*



Entry 3 - *Caladenia busselliana*

Entry 8 - *Caladenia busselliana*





Entry 2 - *Caladenia footeana*



Entry 4 - *Caladenia footeana*



Entry 5 - *Caladenia hopperiana*



Entry 6 - *Caladenia dundasiae*



Entry 7 - *Caladenia swartziorum*



Entry 11 - *Caladenia hoffmanii*



Entry 9 - *Caladenia startiorum*



Entry 12 - *Caladenia hoffmanii*



Entry 10 - *Caladenia williamsiae*



Entry 13 - *Caladenia x hopperi*



Entry 15 - *Caladenia startiorum*



Entry 14 - *Caladenia harringtoniae*



Entry 17 - *Caladenia brownii*



Entry 16 - *Caladenia footeana*





Entry 18 - *Pterostylis heberlei*



Entry 19 - *Caladenia harringtoniae*



Entry 22 - *Caladenia startiorum*



Entry 20 - *Pterostylis heberlei*



Entry 21 - *Caladenia harringtoniae*



Entry 23 - *Caladenia harringtoniae*

Entry 24 - *Caladenia brownii*



Entry 25 - *Thelymitra jacksonii*



Entry 31 - *Caladenia hopperiana*





Entry 26 - *Caladenia busselliana*



Entry 27 - *Caladenia harringtoniae*



Entry 28 - *Caladenia heberleana*



Entry 29 - *Caladenia startiorum*



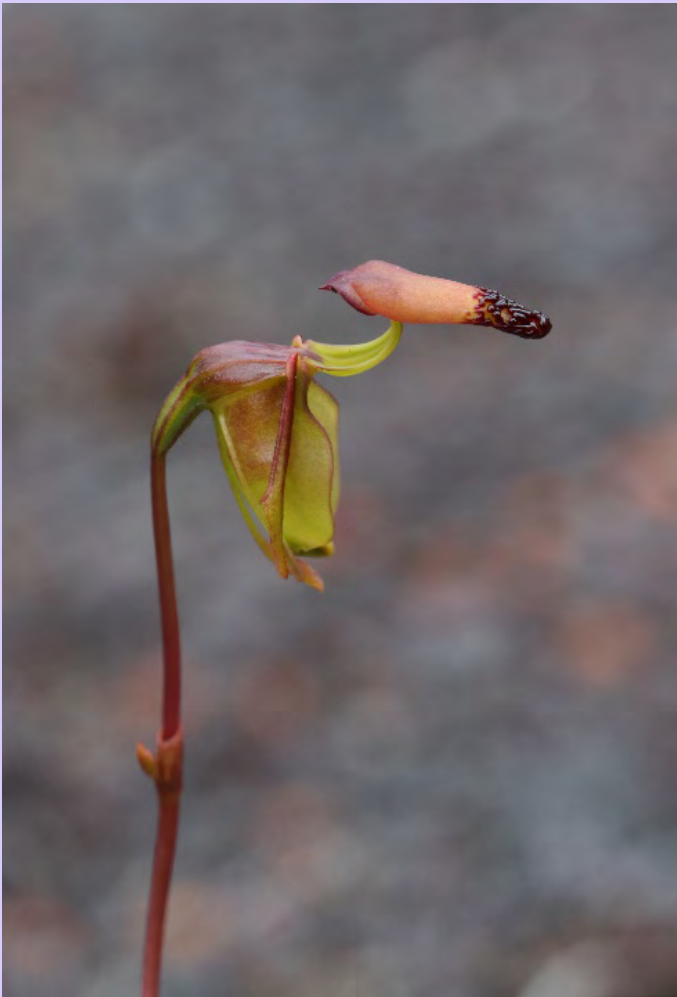
Entry 30 - *Caladenia heberleana*



Entry 33 - *Caladenia harringtoniae*



Entry 32 - *Caladenia startiorum*



Entry 34 - *Paracaleana brockmanii*

# 2021 Walpole Wilderness BioBlitz - 11-12<sup>th</sup> September 2021

Trish & Ramón Newmann



On the weekend of the 2<sup>nd</sup> and 3<sup>rd</sup> of October six WANOSCG members braved the cold and rain to participate in the native orchid part of the inaugural Walpole Wilderness BioBlitz. This had been a massive undertaking organized by the Walpole Nornalup National Parks Association and David and Elizabeth Edmonds and supported by the WA Parks Foundation.

A BioBlitz is a citizen science project where volunteers join with local enthusiasts, amateur experts and scientists to survey the species found in an area over a short period of time.

The information collected provides a snapshot in time of the biodiversity of the area and can be used to improve our understanding and management.

We were encouraged to upload our data and photos using our mobile phones onto the iNaturalist App, a global nature App used to record nature sightings around the world. However, observations could also be provided in other formats. All observations will be collated into the Atlas of Living Australia with a view of repeating the BioBlitz process in the area in order to map out how the various species change over time in the wonderful Walpole Wilderness.

After an introductory talk by David Edmonds the orchid observers set off to record what they could find.

The area we were initially encouraged to survey on the Weld Road had been burnt several seasons ago, but the regrowth was dense and hard to navigate. However, we did find *Caladenia plicata*, *Cyanicula sericea*, *Drakaea micrantha*, *D. thynniphila* and *Pterostylis turfosa*. We then headed down a track off Thompson Rd where we found *Caladenia magniclavata*, *C. brownii*, *C. flava* subsp. *sylvestris*, *Cyanicula sericea* and *Cyrtostylis huegelii*.

After lunch, groups were reorganized. Some went up to a granite outcrop off Thompson Rd finding the largest range of orchid species of the trip - *Caladenia marginata*, *Cryptostylis ovata*, *Cyanicula sericea*, *Cyrtostylis* sp., *Eriochilus dilatatus* subsp. *multiflorus*, *E. pulchellus*, *Microtis* sp., *Pterostylis recurva*, *P. sp. (snail)*, *P. sp. 'southern granites'*, *P. vittata*, *Thelymitra antennifera*, *T. flexuosa*, *T. granitora* in leaf and bud, *T. sp. 'southern granites'* and *Prasophyllum cucullatum*.

Trish went off to do a wonderful nature journaling workshop with Elizabeth Edmonds - spotting *Prasophyllum fimbria* in full flower on the side of Thompson Rd.

The Warren brothers went searching on much flatter ground, joined by Anna and Kylie. The flatter ground included Mitchell Road, a short sojourn off the track into the bush in an effort to get to some swamp land and a track between Mitchell Road and Thomson Road.



Bioblitz volunteers



David Edmonds



*Caladenia plicata*



Granite outcrop



Bioblitz WANOSCG volunteers

Along Mitchell Road, and mainly in the middle of the road, *Drakaea thynniphila*, *Caladenia plicata* and numerous yet to open sun orchids were seen. The sojourn off the track towards swamp land resulted in no orchids, an almost impenetrable undergrowth and a large tiger snake with the latter two severely diminishing the groups desire to reach the swampland so we headed off to find a more genteel habitat. The track off Mitchell Road was a little more productive with *D. thynniphila*, *D. glyptodon*, *C. flava* subsp. *sylvestris*, *Paracaleana nigrita*, *Elythranthera brunonis* buds and *Lyperanthus serratus* flowers.

A dinner of delicious curries and entertaining speakers at the Walpole Recreational Centre rounded off an interesting and rewarding day. Joanna gave us a brief history lesson of the Edmonds family in Walpole and how David had met Liz when she had arrived as a young PhD student.

Mark Harvey from the WA museum spoke of the spiders they found with his usual passion and Gary Muir had us all laughing as he asked us to ponder on "What is the Walpole Icon?" This is for a sculpture to be erected at the entrance to the Walpole Wilderness.

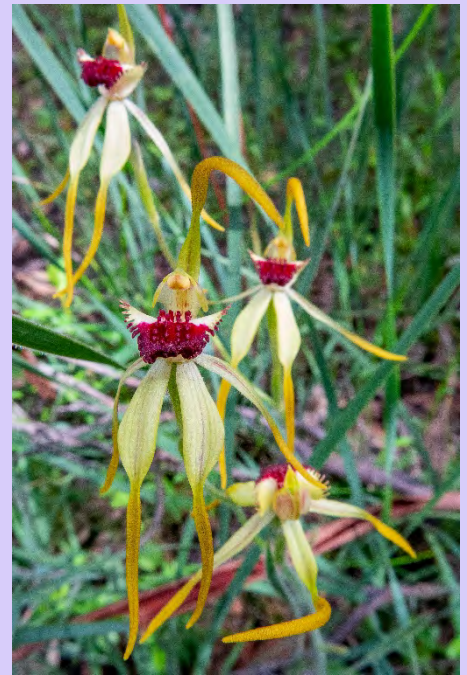
Sunday was sunnier and the orchid hunters were joined by Jackie and Sheryl who had enjoyed our company so much on the Saturday that they came back for more.

This time we put Kevin in charge of finding us some interesting habitat and he didn't disappoint. We found *Caladenia brownii*, *C. longiclavata*, *C. plicata*, *C. flava* subsp. *sylvestris*, *C. magniclavata*, *Cyrtostylis huegelii*, *Corybas recurvus*, *Cryptostylis ovata*, *Cyanicula sericea*, *Pterostylis* sp. (snail), and *Pt. karri*

But the next stop just yielded lots of *Cyrtostylis huegelii* and *Cryptostylis ovata* in bud plus *Paracaleana nigrita* and *Drakaea thynniphila* in flower.

Heading back for lunch we stopped to look around some muddy puddles where there was an abundance of unopened *Thelymitra flexuosa*. So that was us all done, and we signed out to go off and do our own individual hunting.

A big thank you to all the people involved in organizing this amazing feat and especially David and Elizabeth Edmonds.



*Caladenia magniclavata*



*Drakaea micrantha*



Snail orchids on a log



Kevin Uhe with his beloved snails

# Southern Rivers Group Field Trip Report – Karen Johnston

Saturday 23<sup>rd</sup> October 2021 - The trip focussed on Boxwood Hills

Setting out on a beautiful sunny day, expectations weren't high as it was the season's end for the south coast. However, we were delighted to find end of season *Caladenia* and many more! *Caladenia flava* subsp. *flava* (Cowslips) *Caladenia horistes* (Cream spider), *C. barbarossa* x *C. falcata*, *Caladenia x cala* (Wheatbelt spider orchid) and *Caladenia discoidea* (Dancing spider orchid) under and near sheoak. On sloping ground a few lonely leopards were opening their spotted heads (*Thelymira benthamiana*), *Microtis media* subsp. *media* (Common mignonette), *Elythranthera brunonis* (Purple Enamel) and 2 *Diuris setacea* (Bristly donkey). By the sides of the track into the target area *Pterostylis picta* (Painted rufous greenhood), *Thel mitra macrophylla* Scented sun), *C. barbarossa* (Dragon orchid) and *C. falcata* (Fringed mantis) were also quickly found. Unfortunately, the rains have produced large quantities of weed, including the South African orchid, *Disa bracteata*, which is threatening orchid habitat.

The second stop was dry but we were rewarded with open blue sun orchids (*Thelymitra vulgaris* and *Th. graminea*), *Microtis media* subsp. *media* and *Pterostylis picta*. *Disa bracteata* was also evident. Lunch was in a lovely shady area with a cool breeze. Much discussion and research with the books about the orchids we had found kept us amused.

Our third site was for the Sandplain sun orchid (*Thelymitra psammophila*). Sadly there were none to be found. Everyone was happy with the grand total of 15 orchids we had found.



*C. barbarossa* x *C. falcata*



*Pterostylis picta*



*Diuris setacea*



People on the march through a *Pterostylis picta* rich field



# Southern Rivers Group Field Trip Report – Anna de Haan

Saturday 30<sup>th</sup> October 2021 - Porongurup Area



Last weekend whilst the SRG Branch headed east the local Wildflower group travelled to a private farm and then a private reserve for their monthly outing. By all accounts many orchids were sighted. We couldn't miss out on this opportunity. Thus, on a gloriously sunny day we too headed out for the private reserve north of the Porongurup National Park.

Our first sighting was of a Beard Orchid growing out in the open. The location was not a swamp nor was it wet. The ground was broken ironstone and coarse sand, not clay loam and the soil moist due to the recent rainfall. Not one Wandoo was in sight. To the north, west and east there are peaty swamps. Later in the afternoon we sighted two more plants in wet peaty soil beside the track. On the balance of what all the orchid books state and the second location I am inclined to identify these as *Calochilus uliginosus* (Swamp Beard), however, I stand to be corrected.

Further into the reserve through swampy country we found *Thelymitra paludosa* (Plain Sun), *Thely. cornicina* (Lilac Sun), *Thely. crinita* (Blue Lady), *Thely. macrophylla* (Scented Sun), *Thely. vulgaris* (Slender Sun), *Caladenia flava* subsp. *flava* (Cowslip), *Disa bracteata* (South African), *Elythranthera brunonis* (Purple Enamel) and *Microtis media* subsp. *media* (Common Mignonette). Amongst these orchids were hundreds of *Cal. barbarossa* (Common Dragon). Most *Thely. flexuosa* (Twisted Sun) had gone to seed. Over the creek we found many *Caladenia longicauda* in seed. One *Thely. crinita* with the pink tuft colour form was sighted. The last of the *Diuris longifolia* (Purple Pansy) and *Cal. pectinata* (King Spider) were still in flower as were the *Lyperanthus serratus* (Rattle Beaks).

Back at the cars we had a late morning tea and half of our lunch. Off on the second leg for the morning. Along this track we added *Cal. cairnsiana* (Zebra), *Pterostylis* sp. 'robust' (Caldyanup Snail), *Cryptostylis ovata* (Slipper) in bud and the most robust of *Microtis media* subsp. *densiflora* (Dense Mignonette). Conditions must have been perfect for these large specimens. Returning back to the cars we finished our lunches and left the pesky mozzies behind.

Our second stop was in a large moist depression within roadside bush. Initial scanning for orchids was disappointing until a call from the actual bush beckoned us to view stunning *Cal. lobata* (Butterfly), our highlight for the day. Back in the depression, dozens of *Ely. emarginata* (Pink Enamel) were found. The last of *Cal. brownii* (Karri Spider) and *Cal. redacta* (Tangled Spider) were added to the list, however, *Thely. benthamiana* (Leopard Orchid) were still in bud. A few of the above-mentioned Sun Orchids were sighted here too.

The final tally for the day was pleasing, especially the Beard and Butterfly orchids as they are not regularly seen on our field trips.

# WANOSCG members assist in surveying for an endangered orchid

- Jon Warren

12<sup>th</sup> October 2021 – East of Collie

A recent request from Bunbury DBCA for assistance surveying the threatened orchid *Drakaea confluens* (Late hammer orchid) resulted in 16 WANOSCG members meeting at Collie. After a short wait for some who were held up by yet another sudden closing of the Forest Highway we headed off with Andrew and Tayla from DBCA to the eastern realms of Collie.

After some quick introductions to what the *D. confluens* may or may not look like we were off like a flock of chickens released from a hen house. However out of chaos came order as one after another of these late flowering, difficult to see, hammers were located.



*Drakaea confluens* (Late hammer orchid)



*Diuris micrantha* (Dwarf bee orchid)

The first pass concentrated on the edges of the sandy track. Where, apart from *D. confluens*, a group of hybrids possibly between *D. confluens* and *D. gracilis* was located. A possibility that was supported with the location of a *D. gracilis* later in the afternoon. Being sandy country *Paracleana nigrita* (Flying Duck) was also well represented.

After lunch we split into two groups with one group heading further up the track to survey a ridge where they located 48 leaves and buds that were strong possibilities as being *D. confluens*.

Meanwhile back at the first location the group headed south from the track into the bush following the sandy soil and located a few more specimens. In the total the area around the track resulted in 20 flowers, 14 buds, 32 leaves and 3 eaten specimens. Our DBCA colleagues were very excited as they had only been able to find single figure numbers for that location in the past.

On the way back we had another stop to explore some country that Andrew from DBCA had thought looked promising from an aerial map survey. Much to his delight we found 10 flowers, 1 bud and 1 leaf but better still was the fact that it was a new population of *D. confluens*.

In true orchid hunting spirit we then had to go to another site as it wasn't yet dark and did a quick survey for *Diuris micrantha* (Dwarf bee orchid) where 32 of the dainty gems were spotted.

Our DBCA colleagues were well impressed with the WANOSCG member's spotting ability and are keen to use us again. A more formal field/camping trip over a weekend in late September early October is planned for 2022

# *Thelymitra dedmaniarum* Survey – Ian Puddey

Sunday 31st October 2021

Approximately 20 WANOSCG members and 4 DBCA personnel met at the Gidgegannup bakery for a briefing from Andrew Brown before setting off in search of the elusive and endangered *Thelymitra dedmaniarum* – the Cinnamon sun orchid. The epithet '*dedmaniarum*' honours Carlotta Maud Dedman and Winifred Hilda Dedman, who collected the species at Toodyay in 1934. Since then it has become increasingly difficult to locate and largely restricted to reserves and private bushland in the Gidgegannup area.

Any WANOSCG field trip that starts at a country bakery has to be a success by definition, but the day was a contrast of frustration and delight. The frustration came from the absence of any sightings of the target orchid all morning despite breaking up into several small groups and carrying out comprehensive surveillance at 3 separate stops in bushland where many historical sightings have previously been made. This was in spite of the burn in this area earlier in the year and the plentiful rainfall we have received. The delight came from being able to enjoy the beauty of the bushland with the Wooroloo Brook gurgling by and some other orchid finds which included plentiful *Diuris setacea* (Bristly donkey orchids), some impressive stands of *Microtis alba* (White mignonette), *Thelymitra graminea* (Shy sun orchid) and both *Caladenia marginata* (White fairies) and *Elythranthera emarginata* (Pink enamels) still hanging on.

We then moved on to enjoy lunch together at a nearby picnic area which was a beautiful spot with an excellent walking trail and a further extension of the Wooroloo Brook as well as impressive views for those fit enough to climb the granite slopes.

After lunch we once again broke up into groups and carried out further surveillance at known historical sights. This revealed a single *T. dedmaniarum* specimen in flower, one close to opening and one in bud. Two non-flowering leaves were also identified. Ongoing careful surveillance and management of the risks to this orchid by our ADORP volunteers and DBCA staff will clearly be essential given the serious decline in its numbers.



The search continues



*Thelymitra dedmaniarum* (Cinnamon sun orchid)  
- image by Ian Puddey



*Microtis alba* (White mignonette orchid) - image by Ian Puddey

## President's Report – Jon Warren

At the start of my time as President I mentioned that one of my goals was to reduce administration. Unfortunately ill-health got in the way and, apart from some minor adjustments and a small reduction in administration time at general meetings, I don't feel I have managed to make much of a difference.

With this in mind, I am willing to put up my hand to take on the President's role again in 2022 however I think it only right that I share with members my intentions in regard to reducing administration and making general meetings more relaxed and enjoyable.

In 2022 I am planning to trial the following changes:

1. Reduce the number of general meetings
2. Replace some general meetings with workshops
3. Increased use of electronic media for communication.

Workshops will be planned around:

1. A Speaker and/or a fun orchid themed activity
2. Announcements (eg field trips, etc)
3. Personal field trip reports
4. There will be no minutes or admin reports, etc.

The overall approach meets the requirements of our constitution.

The outstanding quiz Dave Lawson ran this year is one example of the type of fun and learning experience activity that could be organised.

Another could be 'What is This?' activity where members submit photographs of orchids they have had trouble or found challenging to identify. Working in groups, possible identities would be discussed thus learning more about how to identify orchids. Another theme along these lines could be 'mutant, hybrid or just plain weird'.

This is just a broad outline of some of the ideas I have been mulling over in regard to the way WANOSCG operates and an approach which I think will reduce administration requirements and improve meetings.

If you are liking the direction I want to take the club, think about joining us on the management committee or at the very least think about some new activities we can undertake at our meetings and workshops and discuss with myself or other committee members.

Wishing you all a joyful festive season and a healthy and wise new year full of orchid surprises.



The remarkable beauty in our bush comes from more than just our orchids!!

Cheryl and I had planned to travel to South Australia in September for a family reunion for Cheryl and her 6 siblings. However, due to the epidemic, her family had to remain in their respective 5 states. Having set aside time from my work schedule in the middle of spring, there was only one option that any long-time WANOSCG members could consider!

A lunch stop at Quairading's Nookaminnie Rock Nature Reserve, a couple of kilometres west of town (with picnic tables and a drop toilet) revealed a *C. uliginosa* subsp. *uliginosa*, our first find of the trip, only metres from the picnic area. The reserve has a walk trail up to the summit of the rock, with views over town and the local district. We had a day trip to the reserve in 2019. It has a beautiful spread of wildflowers, including orchids.

Our first night was at the former Kwolyin townsite's camp area. The Shire of Bruce Rock has provided a well-appointed and popular facility, especially when the short-term camping is free. A walk to the top of a nearby granite outcrop revealed the usual two offenders: *Pr. gracile* and *Th. antennifera*. The shire has provided a large notice board displaying a range of local wildflowers, including orchids. We noted that three or four orchids were misnamed!

We then joined Robyn Campbell's well-researched Corrigin-Kondinnin-Kulin field trip, already eloquently documented by Graham Warren in the October bulletin.

Monday saw us heading east with morning tea at Jilikin Rock (loved the sculptures along the "Tin Horse Highway"). *C. chapmanii*, *C. doutchiae*, *C. roei* found. Much later, in the Lake Cronin area east of Hyden, *C. paradoxa* was found in a burnt area. While regrowth is slow after wildfire in this area, the lack of weeds allows native vegetation to flower at its best as it recovers.

We spent two nights at The Breakaways (free) campsite. The Breakaways are a colourful semicircle of cliffs caused by millennia of erosion in the salt-lake system. The season had been kind to the limited variety of orchids found: a very productive *Pt. mutica* (17 flowers/buds); *Th. petrophila* (?-in bud); and another *Pterostylis* (?-in bud, with rosette, very fleshy stem planning for a big year).

The following days brought a change in the weather with wind (and wild camels!) before a couple of days of rain. Due to the rain and unknown road conditions, the planned trip to Cape Arid was deferred to another year. Instead, we spent a couple of nights at DBCA's almost cushy Lucky Bay campground. The sun came out but the wind persisted. Of note was a *C. decora*, battered by the wind just a few dozen metres from the ocean.

A few days later, a visit to the Ravensthorpe Wildflower Exhibition was worthwhile. We spent the night at the rather run-down Hopetoun Caravan Park before venturing to the Fitzgerald River National Park. While the park has a huge range of wildflowers, access has been limited to the periphery due to concerns of dieback impact. We last visited the park about 30 years ago, after wildfire burnt a large area of it. We found an amazing variety of *Prasophyllums* and *Caladenias* back then but it was very disappointing for us this time.

This was followed by a couple of nights at Mt Trio Bush Camp adjacent to the Stirling Range. The Stirlings were at their best with orchids seemingly wherever we stopped. *Caladenia* territory: *C. cairnsiana*; *C. longicauda* subsp. *eminens*; *C. arrecta*; *C. plicata*; *C. barbarossa*; *C. falcata*; *C. polychroma* and *Pt.* (small, slim bird); *Lp. menziesii*; *Di. decremента*; *Di. longifolia*; *Cy. sericea*.

A stay at an Emu Point Caravan Park revealed *C. latifolia* within a couple of metres of the beach. We ventured out to Perkins Beach where *C. applanata* subsp. *applanata* were found.

The last two nights of our trip were spent at my cousin's property north of Denmark. We approached this via Rocky Gully and Nornalup Road. At our lunch stop, deep in Mt Roe National Park, we found *C. pectinata*; *C. macrostylis*; *C. plicata*; *Cy. sericea*; *Pt. crispula*. The roads became notably rougher (and muddier at times) as we travelled south and east toward Denmark. Forging the Kent River this year was not for the faint hearted. Fortunately, the seals on the camper-trailer's storage compartments did their job when the wheels dipped into hollows in the crossing's rock base.

Returning to Perth, I found that the installation of our latest sculptural artwork had been delayed, so perhaps we could have spent another week in the wilds!



*Caladenia uliginosa* subsp. *uliginosa*  
- Darting Spider Orchid



*Caladenia plicata* - Crab-lipped Spider Orchid



*Caladenia macrostylis* - Leaping Spider Orchid



The Breakaways Campsite

# WA Native Orchids Flowering in November

From the WANOSCG database – from our registrar, Ramón Newmann, detailing from the available literature and updated on an ongoing basis, orchids flowering for the month of November. Study the chart and answer the quiz on Pages 31-32.

North South WA	Cons Status	Common Name	Species	Flowering Start	Flowering Finish	Oct	Nov	Dec	Distribution
S	P3	Coastal Spider Orchid	Caladenia abbreviata	15-Oct	01-Dec	y	y	y	Yallingup to William Bay, coastal
S	P2	Boranup Spider Orchid	Caladenia ambusta	15-Oct	15-Nov	y	y	y	Margaret River, SW of
S		Forest Mantis Orchid	Caladenia attingens subsp. attingens	30-Sep	01-Nov	y	y	y	Mandurah to Albany
S		Common Dragon Orchid	Caladenia barbarossa	01-Sep	15-Nov	y	y	y	Bindoon to Esperance
S		Karri Spider Orchid	Caladenia brownii	01-Oct	15-Dec	y	y	y	Dunsborough to Albany
S		Mustard Orchid	Caladenia caesarea subsp. caesarea	15-Sep	15-Nov	y	y	y	Stirling Range to Boyup Brook
S		Zebra Orchid	Caladenia cairnsiana	01-Aug	01-Nov	y	y	y	Esperance to Lancelin
S	T	Christine's Spider Orchid	Caladenia christineae	15-Sep	01-Nov	y	y	y	Mt Barker to Bridgetown
S		Club-tipped Spider Orchid	Caladenia corynephora	30-Nov	01-Feb	y	y	y	Dunsborough to Albany
S	T	Cossack Spider Orchid	Caladenia dorrienii	15-Sep	01-Nov	y	y	y	Kojonup to Boyup Brook, also West Dale
S		Stumpy Spider Orchid	Caladenia ensata	15-Sep	15-Nov	y	y	y	Albany to Augusta
S	P1	Semaphore Spider Orchid	Caladenia evanescens	01-Nov	30-Nov	y	y	y	Albany to Peaceful Bay
S	T	Giant Spider Orchid	Caladenia excelsa	15-Sep	01-Nov	y	y	y	Dunsborough to Karridale
S		Pointing Spider Orchid	Caladenia exstans	15-Sep	01-Nov	y	y	y	Esperance to Israelite Bay
S		Cowslip Orchid	Caladenia flava subsp. flava	01-Jul	01-Dec	y	y	y	Geraldton to Israelite Bay
S		Karri Cowslip Orchid	Caladenia flava subsp. sylvestris	01-Oct	15-Dec	y	y	y	Bunbury to Albany
S		Cherry Spider Orchid	Caladenia gardneri	15-Sep	01-Nov	y	y	y	Yallingup to William Bay
S	T	Granite Spider Orchid	Caladenia granitora	15-Sep	01-Nov	y	y	y	Albany to Cheyne Beach
S	T	Pink Spider Orchid	Caladenia harringtoniae	15-Sep	01-Nov	y	y	y	Albany to Nannup
S		Sugar Candy Orchid	Caladenia hirta subsp. hirta	31-Aug	01-Nov	y	y	y	Arrowsmith to Albany
S		Funnel-tipped Spider Orchid	Caladenia infundibularis	30-Sep	30-Nov	y	y	y	Dunsborough to Northcliffe
S	P4	Smooth-tipped Spider Orchid	Caladenia integra	30-Sep	15-Nov	y	y	y	Tenterden to Clackline
S		Pink Fairy	Caladenia latifolia	01-Aug	01-Nov	y	y	y	Kalbarri to Israelite Bay
S		Butterfly Orchid	Caladenia lobata	30-Sep	15-Nov	y	y	y	Bunbury to the Stirling Ranges
S	T	Lodge's Spider Orchid	Caladenia lodgeana	31-Oct	01-Dec	y	y	y	Augusta to Margaret River
S	P1	Late White Spider Orchid	Caladenia longicauda subsp. extrema	15-Oct	01-Nov	y	y	y	Manjimup (NE of)
S		Clubbed Spider Orchid	Caladenia longiclavata	01-Sep	01-Nov	y	y	y	Perth to Albany
S		Leaping Spider Orchid	Caladenia macrostylis	01-Aug	01-Nov	y	y	y	Albany to Bindoon
S		White Fairy Orchid	Caladenia marginata	30-Sep	30-Nov	y	y	y	Jurien Bay to Israelite Bay
S		Pink Fan Orchid	Caladenia nana subsp. unita	01-Oct	30-Nov	y	y	y	Perth to Bremer Bay
S		Swamp Spider Orchid	Caladenia paludosa	01-Sep	01-Dec	y	y	y	Gingin to Gracetown, coastal plain
S	P1	Augusta Spider Orchid	Caladenia pholcoidea subsp. augustensis	01-Nov	01-Dec	y	y	y	Near Augusta
S		Albany Spider Orchid	Caladenia pholcoidea subsp. pholcoidea	15-Nov	01-Jan	y	y	y	Albany (East of) to Augusta
S		Crab-tipped Spider Orchid	Caladenia plicata	01-Sep	01-Nov	y	y	y	Nannup to Hopetoun
S	P2	Dark-tipped Spider Orchid	Caladenia postea	01-Oct	01-Nov	y	y	y	York to the Brookton Hwy
S	T	Carbanup King Spider Orchid	Caladenia procera	01-Sep	01-Nov	y	y	y	Carbanup to Busselton, and Crooked Brook
S		Ray Spider Orchid	Caladenia radiata	01-Oct	01-Dec	y	y	y	Yarloop to Albany
S		Christmas Spider Orchid	Caladenia serotina	30-Oct	01-Jan	y	y	y	Perth to Bremer Bay
S		Splendid Spider Orchid	Caladenia splendens	01-Sep	01-Nov	y	y	y	Gingin to Frankland
S		Scott River Spider Orchid	Caladenia thincicola	01-Sep	01-Nov	y	y	y	Cape Naturaliste to the Warren River
S		Darting Spider Orchid	Caladenia uliginosa subsp. uliginosa	30-Sep	01-Nov	y	y	y	Boddington to Mt Barker, also north to Beverley
S	P2	Late Spider Orchid	Caladenia ultima	01-Nov	01-Dec	y	y	y	Lake Muir-Stirling Range area
S	T	Majestic Spider Orchid	Caladenia winfieldii	01-Oct	30-Nov	y	y	y	Manjimup (SE of)
S		Summer Spider Orchid	Caladenia x aestantha	30-Nov	31-Jan	y	y	y	Albany to Augusta, south coast
S		Dusky Fairy Orchid	Caladenia x erminea	01-Sep	30-Nov	y	y	y	Esperance to the Leeuwin-Naturaliste Ridge
S		Protruding Spider Orchid	Caladenia x exserta	01-Sep	30-Nov	y	y	y	York to Rocky Gully

WANOSCG DATABASE 12.04.2021

NOVEMBER WA Orchid FLOWERING CHART 1/4

12/04/21



North South WA	Cons Status	Common Name	Species	Flowering Start	Flowering Finish	Oct	Nov	Dec	Distribution
S		Southern Forest Spider Orchid	Caladenia x hypata	01-Sep	30-Nov	y	y	y	Bridgetown to Mt Barker
S		Swamp Beard Orchid	Calochilus uliginosus	01-Oct	30-Nov	y	y	y	Gingin to Albany
S	P3	Small Helmet Orchid	Corybas abditus	01-Oct	01-Nov	y	y	y	Gingin to Mt Manypeaks with isolated populations near Esperance
S		Slipper Orchid	Cryptostylis ovata	30-Sep	15-Jun	y	y	y	Perth to Albany with isolated populations east of Esperance
S		Powder-blue China Orchid	Cyanicula ashbyae	15-Sep	01-Nov	y	y	y	Pingrup to Beacon
S		Blue China Orchid	Cyanicula gemmata	01-Aug	01-Nov	y	y	y	Kalbarri to Israelite Bay
S		Pale China Orchid	Cyanicula gertrudiae	01-Sep	30-Nov	y	y	y	Yallingup to Albany, coastal
S		Granite China Orchid	Cyanicula nikulinskyae	01-Sep	01-Nov	y	y	y	Fitzgerald River National Park to Israelite Bay, also inland to Mt Ridley
S	P1	Esperance China Orchid	Cyanicula sp. 'Esperance'	01-Sep	01-Nov	y	y	y	Esperance to Israelite Bay
N		Native cymbidium	Cymbidium canaliculatum	01-Sep	30-Nov	y	y	y	Halls Creek to Broome and north to Kununurra
S		Gnat Orchid	Cyrtostylis tenuissima	01-Sep	30-Nov	y	y	y	Perth to east of Esperance
SAfr		South African Orchid	Disa bracteata	01-Oct	30-Nov	y	y	y	Geraldton to Israelite Bay
S		Giant Donkey Orchid	Diuris amplissima	01-Sep	01-Nov	y	y	y	Capel to Mt Barker, also at Mt Dale
S		Tall Bee Orchid	Diuris carinata	01-Oct	15-Nov	y	y	y	Gingin to Mt Barker
S		Elegant Donkey Orchid	Diuris concinna	15-Sep	01-Dec	y	y	y	Cape Arid to Fitzgerald River National Park
S	T	Tall Donkey Orchid	Diuris drummondii	30-Nov	01-Jan	y	y	y	Perth to Walpole, scattered populations to Northampton
S	P1	Arrowsmith Bee Orchid	Diuris eburnea	01-Oct	15-Nov	y	y	y	Arrowsmith River, banks of
S		Late Donkey Orchid	Diuris emarginata	01-Nov	01-Jan	y	y	y	Augusta to Albany
S		Little Esperance Bee Orchid	Diuris immaculata	01-Sep	01-Nov	y	y	y	Esperance (NE of) to Cape Arid
S		Dark Bee Orchid	Diuris insignis	01-Oct	30-Nov	y	y	y	Mt Barker to Manjimup
S		Nanny Goat Orchid	Diuris laevis	01-Oct	30-Nov	y	y	y	Bunbury to Albany
S		Bee Orchid	Diuris laxiflora	01-Sep	01-Nov	y	y	y	Gingin to Esperance
S		Purple Pansy Orchid	Diuris longifolia	01-Sep	15-Dec	y	y	y	Albany to Perth
S		Darling Range Donkey Orchid	Diuris ostrina	01-Oct	15-Nov	y	y	y	Bindoon to Armadale, inland to Brookton and south to Waroona
S		Swamp Bee Orchid	Diuris pauciflora	15-Oct	15-Dec	y	y	y	Augusta to Esperance
S		Granite Bee Orchid	Diuris picta	30-Sep	30-Nov	y	y	y	Lake King to Menzies
S		Bristly Donkey Orchid	Diuris setacea	15-Sep	01-Jan	y	y	y	Esperance to Kalbarri
S		Augusta Bee Orchid	Diuris sp. 'Augusta'	01-Oct	01-Dec	y	y	y	Augusta
S	T	Late Hammer Orchid	Drakaea confluens	30-Sep	15-Nov	y	y	y	Boyup Brook to Stirling Range
S	T	Glossy-leaved Hammer Orchid	Drakaea elastica	01-Oct	30-Nov	y	y	y	Ruabon to Cataby, coastal plain
S		Purple Enamel Orchid	Elythranthera brunonis	01-Aug	01-Nov	y	y	y	Kalbarri to Israelite Bay
S		Pink Enamel Orchid	Elythranthera emarginata	15-Sep	15-Dec	y	y	y	Jurien Bay to Ravensthorpe
S		Intermediate Enamel Orchid	Elythranthera x intermedia	01-Oct	30-Nov	y	y	y	Perth to Albany
S		Babe-in-a-Cradle	Epiblema grandiflorum	01-Nov	31-Jan	y	y	y	Gingin to Esperance
S		Slender Bunny Orchid	Eriochilus tenuis	01-Sep	01-Dec	y	y	y	Perth to Albany
N	P3	Kimberley grass orchid	Eulophia bicallosa	01-Aug	31-Dec	y	y	y	Kimberley region, King Leopold Range to Kalumburu
S		Potato Orchid	Gastrodia laciata	15-Nov	15-Jan	y	y	y	Bunbury to Albany
S		Rabbit Orchid	Leptoceras menziesii	01-Sep	01-Nov	y	y	y	Geraldton (North of) to Israelite Bay
S		White Mignonette Orchid	Microtis alba	01-Oct	15-Jan	y	y	y	Dongara to Israelite Bay
S		Scented Mignonette Orchid	Microtis alboviridis	01-Nov	31-Dec	y	y	y	Bunbury to Esperance
S		Swamp Mignonette Orchid	Microtis atrata	01-Sep	30-Nov	y	y	y	Jurien Bay to Israelite Bay
S		Sweet Mignonette Orchid	Microtis brownii	01-Nov	15-Jan	y	y	y	Perth to Esperance
S		Cupped Mignonette Orchid	Microtis cupularis	01-Sep	30-Nov	y	y	y	Perth to Thomas River, east of Esperance
S		Granite Mignonette Orchid	Microtis graniticola	01-Sep	01-Nov	y	y	y	Mullewa to Balladonia
S		Dense Mignonette Orchid	Microtis media subsp. densiflora	01-Oct	31-Jan	y	y	y	Perth to Albany
S		Common Mignonette Orchid	Microtis media subsp. media	30-Aug	31-Jan	y	y	y	Shark Bay to Eyre

WANOSCG DATABASE 12.04.2021

NOVEMBER WA Orchid FLOWERING CHART 2/4

12/04/21



# WA Native Orchids Flowering in November cont'd

North South WA	Cons Status	Common Name	Species	Flowering Start	Flowering Finish	Oct	Nov	Dec	Distribution
S		Dark Mignonette Orchid	<i>Microtis orbicularis</i>	31-Aug	31-Dec	y	y		Dongara to Cape le Grand, east of Esperance
S	P4	Beautiful Mignonette Orchid	<i>Microtis pulchella</i>	01-Nov	31-Jan	y	y		Augusta to Mt Manypeaks
S		Brockman's Duck Orchid	<i>Paracaleana brockmanii</i>	15-Oct	15-Jan	y	y		Perth to Albany
S		Little Duck Orchid	<i>Paracaleana disjuncta</i>	01-Oct	01-Dec	y	y		Margaret River to Israelite Bay
S	T	Sandplain Duck Orchid	<i>Paracaleana dixonii</i>	31-Oct	01-Dec	y	y		Moore River National Park to Dongara
S	P2	Darling Range Duck Orchid	<i>Paracaleana ferricola</i>	30-Sep	15-Nov	y	y		Darling Range (above Kelmescott)
S	P1	Slender-leaved Duck Orchid	<i>Paracaleana gracilicordata</i>	15-Oct	30-Nov	y	y		Waroona to Brookton Hwy
S	P1	Granite Duck Orchid	<i>Paracaleana granitica</i>	15-Oct	30-Nov	y	y		Armadale (South of)
S		Midget Duck Orchid	<i>Paracaleana lyonsii</i>	30-Sep	30-Nov	y	y		Murchison River (North of) to Southern Cross
S	P2	Esperance Duck Orchid	<i>Paracaleana parvula</i>	01-Oct	30-Nov	y	y		Condingup to Israelite Bay
S		Christmas Leek Orchid	<i>Prasophyllum brownii</i>	01-Nov	15-Jan	y	y		Perth to Esperance
S		Swamp Leek Orchid	<i>Prasophyllum drummondii</i>	01-Oct	31-Dec	y	y		Three Springs to Israelite bay
S		Tall Leek Orchid	<i>Prasophyllum elatum</i>	15-Aug	01-Nov	y	y		Kalbarri to Israelite Bay
S		Humped Leek Orchid	<i>Prasophyllum gibbosum</i>	30-Sep	15-Jan	y	y		Bunbury to Esperance
S		Bronze Leek Orchid	<i>Prasophyllum giganteum</i>	30-Sep	15-Nov	y	y		Kalbarri to Israelite Bay
S		Yawning Leek Orchid	<i>Prasophyllum hians</i>	31-Aug	15-Nov	y	y		Dongara to Israelite Bay
S		Laughing Leek Orchid	<i>Prasophyllum macrostachyum</i>	15-Sep	31-Jan	y	y		Dongara to Cape le Grand
S		Fragrant Leek Orchid	<i>Prasophyllum odoratissimum</i>	30-Sep	15-Nov	y	y		Augusta to Toolinna Cove, coastal areas, also near Balladonia
S		Dainty Leek Orchid	<i>Prasophyllum plumiforme</i>	01-Sep	01-Nov	y	y		Kalbarri to Israelite Bay
S		King Leek Orchid	<i>Prasophyllum regium</i>	15-Oct	31-Dec	y	y		Perth to Albany
S		Late Swamp Leek Orchid	<i>Prasophyllum</i> sp. 'late swamps'	01-Nov	31-Dec	y	y		Augusta to Israelite Bay
S		South Coast Leek Orchid	<i>Prasophyllum</i> sp. 'south coast'	30-Sep	15-Dec	y	y		Broke Inlet to Israelite Bay
S		Southern Fringed Leek Orchid	<i>Prasophyllum</i> sp. 'southern'	01-Nov	31-Dec	y	y		Augusta to Albany
S		Striped Leek Orchid	<i>Prasophyllum</i> sp. 'striped'	15-Sep	01-Nov	y	y		Perth to Busselton
S		Hairy Rufous Greenhood	<i>Pterostylis ciliata</i>	15-Sep	15-Nov	y	y		Beverley to Esperance
S	P1	Elegant Rufous Greenhood	<i>Pterostylis elegantissima</i>	15-Oct	30-Nov	y	y		Goomallin to Salmon Gums
S	P2	Tuart Rufous Greenhood	<i>Pterostylis frenchii</i>	31-Oct	01-Dec	y	y		Mandurah to Capel
S		Clubbed Snail Orchid	<i>Pterostylis glebosa</i>	15-Aug	30-Nov	y	y		Eneabba to Walpole
S		Insect-lipped Rufous Greenhood	<i>Pterostylis insectifera</i>	30-Sep	30-Nov	y	y		Between Karroun Hill, Ravensthorpe and Norseman
S		Karri Snail Orchid	<i>Pterostylis karri</i>	01-Aug	01-Nov	y	y		Margaret River to Walpole
S		Ravensthorpe Rufous Greenhood	<i>Pterostylis leptochila</i>	30-Sep	30-Nov	y	y		Ongerup to Munglinup
S		Ruddy Hood	<i>Pterostylis perculata</i>	15-Sep	15-Nov	y	y		Stirling Range to Thomas River east of Esperance
S		Painted Rufous Greenhood	<i>Pterostylis picta</i>	15-Sep	15-Dec	y	y		Between Moora, Woodanilling and Esperance
S		Rufous Greenhood	<i>Pterostylis roensis</i>	15-Sep	30-Nov	y	y		Mt Jackson to Balladonia
S		Granite Bird Orchid	<i>Pterostylis saxosa</i>	30-Sep	01-Nov	y	y		Albany to Shannan
S		Late Bird Orchid	<i>Pterostylis serotina</i>	31-Oct	30-Nov	y	y		Albany, Dardanup to Augusta
S		Bloated Bird Orchid	<i>Pterostylis</i> sp. 'bloated'	01-Oct	30-Nov	y	y		Augusta to Mt Barker
S		Bearded Bird Orchid	<i>Pterostylis turfosa</i>	30-Sep	30-Nov	y	y		Bunbury to East Mt Barren
S		Pink Beaks	<i>Pyrorchis forrestii</i>	30-Oct	15-Dec	y	y		Augusta to Albany
S		Elbow Orchid	<i>Spiculaea ciliata</i>	01-Oct	31-Jan	y	y		Kalbarri to Grasspatch
S		Leopard Orchid	<i>Thelymitra benthamiana</i>	01-Sep	30-Nov	y	y		Northampton to Israelite Bay
S		Blue Sun Orchid	<i>Thelymitra canaliculata</i>	31-Oct	31-Dec	y	y		Augusta to Albany
S		Blue Lady Orchid	<i>Thelymitra crinita</i>	01-Sep	31-Dec	y	y		Bindoon to Esperance
S		Swamp Sun Orchid	<i>Thelymitra cucullata</i>	01-Oct	30-Nov	y	y		Perth to Condingup
S	T	Cinnamon Sun Orchid	<i>Thelymitra dedmaniarum</i>	31-Oct	30-Nov	y	y		Gidgegannup in the Darling Range
S		Chestnut Sun Orchid	<i>Thelymitra fuscolutea</i>	01-Nov	28-Feb	y	y		Perth to Mt Ragged



WANOSCG DATABASE 12.04.2021

NOVEMBER WA Orchid FLOWERING CHART 3/4

12/04/21

North South WA	Cons Status	Common Name	Species	Flowering Start	Flowering Finish	Oct	Nov	Dec	Distribution
S		Shy Sun Orchid	<i>Thelymitra graminea</i>	01-Oct	30-Nov	y	y		Perth to Esperance
S		Plum Orchid	<i>Thelymitra mucida</i>	15-Sep	30-Nov	y	y		Three Springs to Albany
S		Western Azure Sun Orchid	<i>Thelymitra occidentalis</i>	01-Sep	30-Nov	y	y		Cranbrook to Eyre
S		Plain Sun Orchid	<i>Thelymitra paludosa</i>	01-Nov	31-Jan	y	y		Bunbury to Esperance
S		Granite Sun Orchid	<i>Thelymitra petrophila</i>	15-Aug	01-Nov	y	y		Mullewa to SA
S		Freckled Sun Orchid	<i>Thelymitra sargentii</i>	01-Sep	30-Nov	y	y		Murchison River (North of) to Kalgoorlie (East of)
S		Yellow Sun Orchid	<i>Thelymitra</i> sp. 'Denmark'	15-Oct	15-Nov	y	y		Denmark area
S	P3	Orange Sun Orchid	<i>Thelymitra</i> sp. 'Ongerup'	01-Nov	30-Nov	y			Woodanilling to east of Jerramungup
S		South Coast Sun Orchid	<i>Thelymitra</i> sp. 'south coast'	15-Oct	30-Nov	y	y		Margins of swamps between Walpole and Bremer Bay
S	T	Star Orchid	<i>Thelymitra stellata</i>	30-Sep	01-Nov	y	y		Three Springs to Pinjarra, also near Corrigin
S		Custard Orchid	<i>Thelymitra villosa</i>	01-Sep	30-Nov	y	y		Northampton to Israelite Bay
S	P3	York Sun Orchid	<i>Thelymitra yorkensis</i>	01-Nov	15-Dec	y	y		York (SW of) to Beverley, scattered populations
S		Mauve Rare Orchid	<i>xCyanthera glossodiodes</i>	01-Sep	01-Nov	y	y		Mt Barker to Margaret River

## November Flowering Orchids Quiz

- Which November-flowering *Caladenia* is the only Western Australian spider orchid to have a clubbed labellum apex?
  - Caladenia longiclavata*
  - Caladenia lobata*
  - Caladenia ensata*
  - Caladenia infundibularis*
  - Caladenia plicata*
  - Caladenia corynephora*
- Which *Caladenia* species flowers in November and is one of the 4 members of the King Spider Orchid complex without a red apex to the labellum?
  - Caladenia busselliana*
  - Caladenia interjacens*
  - Caladenia lodgeana*
  - Caladenia leucochila*
- Identify the 3 *Microtis* species in the photographs on pages 31 and 32.



4. Which November flowering orchid is one of the last members of the *Caladenia longicauda* complex to flower in Western Australia (usually from November to early January)?

- |  |                                 |
|--|---------------------------------|
| A. <i>Caladenia longicauda</i> subsp. <i>extrema</i>     | E. <i>Caladenia christineae</i> |
| B. <i>Caladenia pholcoidea</i> subsp. <i>pholcoidea</i>  | F. <i>Caladenia excelsa</i>     |
| C. <i>Caladenia pholcoidea</i> subsp. <i>augustensis</i> | G. <i>Caladenia corynephora</i> |
| D. <i>Caladenia uliginosa</i> subsp. <i>uliginosa</i>    | H. <i>Caladenia serotina</i>    |

5. Which late-flowering spider orchids were first discovered by WANOSCG member, Greg Bussell?

- |  |                                 |
|--|---------------------------------|
| A. <i>Caladenia longicauda</i> subsp. <i>extrema</i>     | E. <i>Caladenia lobata</i>      |
| B. <i>Caladenia pholcoidea</i> subsp. <i>pholcoidea</i>  | F. <i>Caladenia excelsa</i>     |
| C. <i>Caladenia pholcoidea</i> subsp. <i>augustensis</i> | G. <i>Caladenia busselliana</i> |
| D. <i>Caladenia ambusta</i>                              | H. <i>Caladenia serotina</i>    |

6. Four pink spider orchids are found in the lower SW of Western Australia. Which 3 can still be flowering in November?

- |                                   |                                |
|-----------------------------------|--------------------------------|
| A. <i>Caladenia gardneri</i>      | C. <i>Caladenia winfieldii</i> |
| B. <i>Caladenia harringtoniae</i> | D. <i>Caladenia startiorum</i> |

7. Which is usually one of the last members of the Wispy Spider Orchid complex to flower each year (sometimes to early December) and usually in areas burnt by summer fire?

- |   |                                |
|---|--------------------------------|
| A. <i>Caladenia dorrienii</i>                       | D. <i>Caladenia evanescens</i> |
| B. <i>Caladenia abbreviata</i>                      | E. <i>Caladenia ultima</i>     |
| C. <i>Caladenia caesarea</i> subsp. <i>caesarea</i> | F. <i>Caladenia postea</i>     |

8. What is the largest flowering *Diuris* in WA?

9. Which *Diuris* species flowering in November is distinguished by its spirally twisted leaves?

10. Which orchid flowering in November is unable to photosynthesise and therefore heavily reliant on mycorrhizal fungi to provide nutrients?

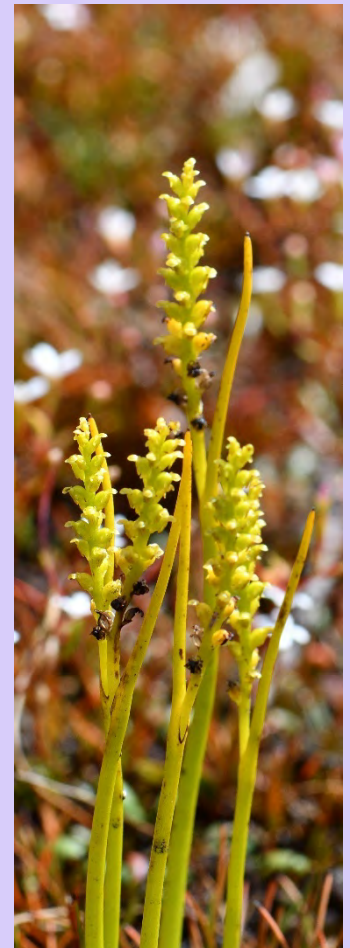
11. Which November flowering *Thelymitra* species is named after the mouldy bloom on its column?

12. Which November flowering *Thelymitra* species have blotched or spotted flowers?

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| A. <i>Thelymitra cucullata</i>    | E. <i>Thelymitra sargentii</i>   |
| B. <i>Thelymitra canaliculata</i> | F. <i>Thelymitra dedmaniarum</i> |
| C. <i>Thelymitra villosa</i>      | G. <i>Thelymitra tigrina</i>     |
| D. <i>Thelymitra mucida</i>       | H. <i>Thelymitra yorkensis</i>   |

13. Which of the following is one of the last members of the King Spider Orchid complex to flower each year preferring cool, moist sites and flowering well into December?

- |                              |                              |
|------------------------------|------------------------------|
| A. <i>Caladenia brownii</i>  | C. <i>Caladenia lodgeana</i> |
| B. <i>Caladenia gardneri</i> | D. <i>Caladenia paludosa</i> |





## Answers to Quiz:

1. F - *Caladenia corynephora* – Club-lipped spider orchid.
2. C - *Caladenia lodgeana* – Lodge’s spider orchid. The other 3 – *Caladenia busselliana* - Bussell’s spider orchid; *Caladenia interjacens* – the Walpole spider orchid and *Caladenia leucochila* - Collie spider orchid - finish flowering in October.
3. In descending order – *Microtis cupularis* – Cupped mignonette orchid; *Microtis atrata* - Swamp mignonette orchid; *Microtis media* subsp. *media* – Common mignonette orchid.
4. B - *Caladenia pholcoidea* subsp. *pholcoidea* – Albany spider orchid.
5. C, D, G - *Caladenia pholcoidea* subsp. *augustensis* - Augusta spider orchid - discovered in 1992; *Caladenia ambusta* - Boranup spider orchid - discovered in 2000; *Caladenia busselliana* - Bussell’s spider orchid - finishes flowering in October - was discovered by Greg in 1990.
6. A, B C - *Caladenia gardneri* - Cherry spider orchid; *Caladenia harringtoniae* - Pink spider orchid; *Caladenia winfieldii* - Majestic spider orchid. The fourth - *Caladenia startiorum* - Start’s spider orchid - finishes flowering in October.
7. E - *Caladenia ultima* - Late spider orchid.
8. *Diuris amplissima* - Giant donkey orchid.
9. *Diuris setacea* - Bristly donkey orchid.
10. *Gastrodia lacista* - This orchid species cannot make chlorophyll.
11. *Thelymitra mucida* - Plum orchid.
12. A, C, E, G - *Thelymitra cucullata* - Swamp sun orchid; *Thelymitra villosa* - Custard orchid; *Thelymitra tigrina* - Tiger orchid; *Thelymitra sargentii* - Freckled sun orchid.
13. D - *Caladenia paludosa* - Swamp spider orchid.

## Bulletin Articles

Please send Bulletin contributions to the editor – at [Wanoscg.newsletter@gmail.com](mailto:Wanoscg.newsletter@gmail.com). Due date for articles for the next issue will be Monday, 28<sup>th</sup> February, 2022.

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