

# PLAINS FACTS

EDITION 29 SUMMER 2025

## KARRKIYN WARBULLOC

STORY BY HANNAH WIGGS AND  
MADELEINE SLINGO, CCMA  
PHOTOGRAPHY: BLAIR GILSON

WE ARE THRILLED TO ANNOUNCE THAT WE ARE PARTNERING WITH WADAWURRUNG TRADITIONAL OWNERS ABORIGINAL CORPORATION TO CO-DELIVER THE KARRKIYN WARBULLOC PROJECT, PROTECTING AND RESTORING GRASSLANDS ACROSS THE VICTORIAN VOLCANIC PLAIN!

The project is based on Karrkiyn Warbulloc (Lava Stone Plain) on Wadawurrung Country, and provides an opportunity to continue focusing on Natural Temperate Grasslands and Grassy Eucalypt Woodlands across public and private land.

Karrkiyn Warbulloc will span five years, and support Wadawurrung and other land managers in the restoration of significant areas and threatened species through conservation agreements, flora species reintroduction and burning. Working together in these grasslands not only protects them from extinction, but also creates and maintains habitat for endangered animals such as the Plains Wanderer and Grassland Earless Dragon – recently rediscovered in Victorian grasslands after being presumed extinct.

To further enhance the health and ongoing management of the Plain, we are actively engaging with community members through knowledge and skills development and building custodianship of these rare ecological communities.

This project is funded by the Australian Government Natural Heritage Trust and delivered by Corangamite Catchment Management Authority, a member of the Commonwealth Regional Delivery Partners panel, in partnership with Wadawurrung Traditional Owners Aboriginal Corporation.

**Blair Gilson, WTOAC Wiyn Murrup Project Officer:**

"Karrkiyn Warbulloc is an incredibly important part of Wadawurrung Country; the grasslands were rich in resources, and we have always known how to care for them. When Country was healthy, there was enough food, animals and resources.

"We are excited to work with CCMA to bring health back to Karrkiyn Warbulloc. They really understand how important it is to incorporate cultural knowledge and practices into how we care for Country."



YOU YANGS BURN

# FREQUENT FLORAL HERBIVORY OF THE COMMON GOLDEN MOTH ORCHID, *DIURIS CHRYSOEPSIS*.

STORY BY REBECCA GRINTER  
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THE VICTORIAN VOLCANIC PLAINS SUPPORT A RICH DIVERSITY OF GRASSLAND AND GRASSY-WOODLAND DWELLING ORCHIDS<sup>1</sup>.

Unfortunately, many of these native orchid species are threatened, including several species from the Golden Moth group (*Diuris*)<sup>2,3,4</sup>. There are thirteen Golden Moth species, ten are listed as threatened either nationally or statewide, and three of the statewide listed species occur within the Plains; *Diuris basaltica* (critically endangered), *Diuris behrii* (endangered), and *Diuris gregaria* (critically endangered)<sup>3,4,5</sup>.

Whilst both *D. behrii* and *D. gregaria* have wider distributions across the basalt plains, *D. basaltica* is restricted to fragmented grasslands west of Melbourne<sup>5</sup>. The most common and widespread species of the group, *Diuris chryseopsis*, is the fourth and final Golden Moth present within grasslands of the Victorian Volcanic Plains (Image 1, 2)<sup>4,5</sup>.

Given that ~99 % of Victorian native grasslands have been significantly degraded and fragmented since European settlement suitable habitat for conserving and reintroducing grassland orchids is limited<sup>6</sup>. Further, factors limiting the reproductive success of Golden Moth orchids, such as floral herbivory (florivory), have not been studied.

This presents challenges and limitations to their successful management, habitat protection, and selection of sites for future conservation translocations.

To address this gap in the literature and help inform conservation and management issues for the numerous threatened Golden Moth species, I completed a detailed study on the common *D. chryseopsis* (Image 2)<sup>7</sup>. This study was undertaken at two of the largest known *D. chryseopsis* populations in remnant grassy woodlands near Stawell in Victoria.

*Inset: Rebecca Grinter with Diuris chryseopsis, September 2021. Lake Lonsdale Conservation Reserve, Western Victoria.*



EASTERN GREY KANGAROO WITH ORCHID IN ITS MOUTH. LAKE LONSDALE CONSERVATION RESERVE, WESTERN VICTORIA.

My aims were to quantify the extent of *D. chryseopsis* florivory, and identify the herbivores. Given that *D. chryseopsis* produces one, non-regenerating flowering stem annually, I was interested to see if removal of these flowering stems by herbivores significantly reduced seasonal reproductive capacity across the orchid populations.

By monitoring over two thousand tagged *D. chryseopsis* plants I identified that ~46 % of the plants had been grazed by vertebrate herbivores. Over 77 % of these grazing events occurred within the first one-to-two weeks of peak flowering. Video footage showed five species grazing *D. chryseopsis* plants. Eastern grey kangaroos grazed the highest quantity of orchids (~42 %), followed by European brown hare (~29 %), swamp wallaby (~13 %), common brushtail possum (~9 %), and European rabbit (~7 %).

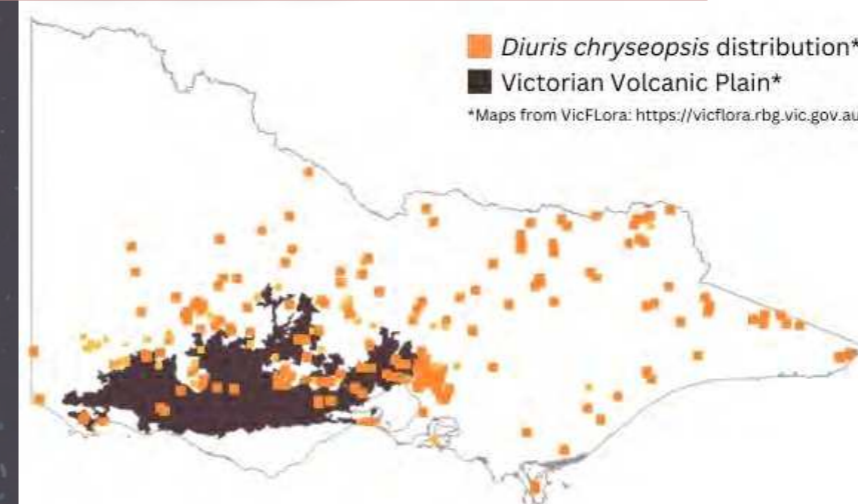
In Australia, this study is the first to quantify that grazing pressures from overabundant native and introduced herbivores can significantly threaten an orchid population in grassland environments<sup>8</sup>. Further research is required to determine if domestic stock similarly graze native orchid species, and to what extent, particularly given many of our native orchids of the Plains occur on private land. This study highlights the importance of identifying the herbivore species and their grazing extent to ensure that targeted herbivore management, including population reductions or herbivore exclusion infrastructure (e.g. fences), can be implemented effectively.

Finally, these findings suggest that florivory may similarly be a significant threat to our threatened Golden Moths across the Plains.



*DIURIS CHRYSOEPSIS*, LAKE LONSDALE CONSERVATION RESERVE, WESTERN VICTORIA.

VICTORIAN DISTRIBUTION OF *DIURIS CHRYSOEPSIS* OVERLAPS WITH THE VICTORIAN VOLCANIC PLAINS.



## ACKNOWLEDGEMENTS AND REFERENCES

*Acknowledgements and References Text - Accessible via QR code:*



NEEDLE IN A HAYSTACK

# SEARCHING FOR THREATENED SPECIES

STORY BY HANNAH WIGGS (CCMA), LIDIJA VELJANOVSKI (WTOAC) AND CANDICE PARKER (GREENING AUSTRALIA)

WE ARE THRILLED TO ANNOUNCE THAT WE ARE PARTNERING WITH WADAWURRUNG TRADITIONAL OWNERS ABORIGINAL CORPORATION (WTOAC) AND GREENING AUSTRALIA TO PROTECT ICONIC SPECIES IN THE GRASSLANDS OF WADAWURRUNG COUNTRY. THE TARGET SPECIES ARE ENDANGERED PLANTS THAT HOLD CULTURAL SIGNIFICANCE FOR WADAWURRUNG TRADITIONAL OWNERS.

We have had a busy spring of treasure hunting for tiny endangered plants, which often feels like looking for a needle in a very, very large haystack! Excitingly, we have now found populations of all six species.

The target species are Matted-flax lily (*Dianella amoena*), Small milkwort (*Comepsperma polygaloides*), Plains yam daisy (*Microseris scapigera*), Button wrinklewort (*Rutidosia leptorhynchoides*), White sunray (*Leucochrysum albicans* subsp. *Tricolour*) and Hairy tails (*Ptilotus erubescens*).

The next stage is to wait with bated breath whilst the plants get ready to seed, and to swoop in to collect seeds when they are ready to drop.

This is to create a genetically diverse and robust seedbank for endangered plants at WTOAC's nursery, where a seed propagation area will be set up so we can bolster wild populations of the plants in the future.



DIANELLA AMONEA



PTILOTUS ERUBESCENS



COMPESPERMA POLYGALOIDES

DIANELLA AMOENA



THE WADAWURRUNG GRASSLAND SEEDBANK PROJECT WAS SUPPORTED BY THE VICTORIAN GOVERNMENT'S ICON SPECIES PROGRAM 2023-2025.

# SEARCHING FOR A HOME

SOME OF OUR SUNSHINE DIURIS ARE NOW LOOKING FOR A HOME IN INTACT THEMEDA AND HERB RICH GRASSLANDS OF THE VICTORIAN VOLCANIC PLAINS. WE ARE KEEN TO FIND SUITABLE LAND TO INTRODUCE ~ 1,000 SUNSHINE DIURIS AS A START.

Do you have a property that contains over 40Ha of intact grasslands? Would you be happy for us to conduct pollinator surveys to ensure the bee pollinators of this orchid are present before planting?

Orchids are arguably the most beautiful and charismatic plants on the planet. But importantly they rely on many other species in the environment in order to thrive. The majority of orchids species have only one or few pollinator species, which they require in order to set seed.

Interestingly, all orchids form a symbiotic partnership with a mycorrhizal fungus (literally meaning fungus root) in order to germinate in the wild, as their tiny seeds need help from the mycorrhizal fungi to form their first leaves and provide supplementary nutrition.

Sadly, orchids are also the most threatened family of plants. In Victoria we have ~ 400 species of orchids of which nearly half are threatened with extinction.

In remnant grasslands within the suburbs of Melbourne remains the last populations of one of the world's most beautiful orchids, 'the Sunshine Diuris', known to scientists as *Diuris fragrantissima*. The Sunshine Diuris has two leaves, which emerge in March from a dormant underground tuber, followed by a single flowering stem of up to 12 flowers in October - November, that are white with purple suffusions. The flowers of this species as the scientific name suggests are fragrant, to my nose smelling like chocolate lilies.

The Sunshine Diuris is now considered Critically Endangered, though was once found in its thousands. The catastrophic reduction in this species is due to almost complete habitat destruction post European colonization.

I have been privileged to work with a team of researchers and volunteers at the Royal Botanic Gardens Victoria to study the

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genetic diversity, mycorrhizal fungi and pollinators of this critically endangered orchid.

We have now grown this species from seed with its full genetic diversity and a range of its essential symbiotic fungal species. We have determined the two main native bee pollinators of the species.

One of our shade houses at the RBGV Orchid Conservation program is now packed to the brim with Sunshine Diuris and in late Spring the aroma is intoxicating.

Are you keen to become a custodian of this species into the future? If this is you, please contact [noushka.reiter@rbg.vic.gov.au](mailto:noushka.reiter@rbg.vic.gov.au) and [madeleine.slingo@ccma.vic.gov.au](mailto:madeleine.slingo@ccma.vic.gov.au).



PHOTOGRAPHY BY NOUSHKA REITER



PTILOTUS ERUBESCENS<sup>2</sup>

# SPECIES SPOTLIGHT

STORY AND PHOTOS BY CANDICE PARKER, GREENING AUSTRALIA

ALTHOUGH IT HAS BEEN A DRY SEASON, THE GRASSLAND ALWAYS SEEM TO SPRING INTO COLOUR.

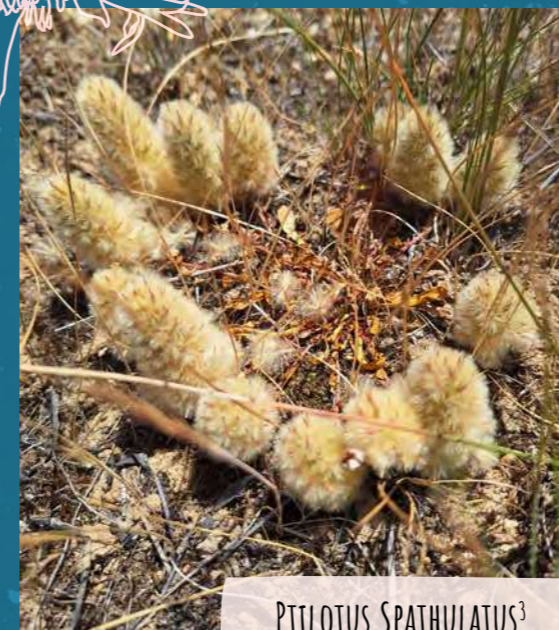
Of the most dazzling is the flowerheads from the *Ptilotus* genus. In Australia we have 107 species of *Ptilotus* with 10 of these occurring in Victoria (FloraVic website). Half of these species are listed under the FFG as endangered or critically endangered, some with only a few known populations.

Within the Victorian Volcanic Plains there are 3 species *Ptilotus macrocephalus*, *Ptilotus spathulatus* and *Ptilotus erubescens* that we have been keeping an eye out for, all within varying sizes of fluffy flowerheads.

These species also have large taproots, allowing them to die back after seeding and re-sprouting during spring when conditions are favourable.

## CAPTIONS

- 1: *Ptilotus macrocephalus* (Featherheads) can reach up to 50cm in height.
- 2: *Ptilotus erubescens* (Hairy Tails) can grow to 25cm tall and is listed as Critically Endangered under the FFG Act.
- 3: *Ptilotus spathulatus* (Pussy Tails) - a small herb to 10cm tall.



PTILOTUS SPATHULATUS<sup>3</sup>

## SEASON HIGHLIGHT:

A HIGHLIGHT ON THE GRASSLAND TRAIL IS THE CRESSY TROTting TRACK, HOME TO MANY AMAZING WILDFLOWERS, THIS SEASON THERE WAS A FIELD OF CAESIA CALLIANTHA (BLUE-GRASS LILY) ON DISPLAY.



BLUE GRASS LILLY

# BREATHING NEW LIFE THROUGH CULTURAL FIRE

STORY BY BLAIR GILSON, WTOAC AND MADELEINE SLINGO, CCMA

TUCKED AWAY BEHIND A SUGARGUM PLANTATION AT THE BASE OF THE YOU YANGS ON WADAWURRUNG COUNTRY, LIES A HIDDEN GEM OF GRASSY EUCALYPT WOODLAND HUGGING THE BANKS OF HOVELLS CREEK.

At first sight, this woodland may not appear to be anything special, with a healthy population of boneseed and areas of other overgrown introduced plants.

However, with a little bit of tender love and care over the last few years, new life has been breathed into this site. This "new life" has largely been provided through cultural fire by Wadawurrung Traditional Owners.

There have been cool burns conducted at this four-hectare site annually from 2021 – 2023, all within the autumn season window. However, upon noticing the increasing veldt grass (*Eirharta*) coverage through regular seasonal monitoring of the site, experimental early Spring burns were undertaken this year.

In October 2024, the Wiyn Murrup team conducted two beautiful burns, the burns went slow and life was put into the country. The animals knew where to go to get out of the way of the fire and the tree leaves danced in the smoke. Wadawurrung people had another great opportunity to walk on country, burning, laughing and having fun in the bush.

The Wadawurrung burning goes hand in hand with a power of work in weed control undertaken by the Gobata Dja (Caring for Country) Team at the Wadawurrung Traditional Owners Aboriginal Corporation.

This involved two days of hand-pulling and some chemical control of weeds, including

boneseed (*Chrysanthemoides monilifera*) and serrated tussock (*Nassella trichotoma*).

To top it off, the team at Wadawurrung have taken this post-burn opportunity to spread seeds of local plants at the same site – seeds harvested from their very own nursery at Bostock. This included both Spear Grass (*Austrostipa*) and Wallaby Grass (*Rytidosperma*) species.

Wadawurrung plan to build the connection to this site over the coming years through further on-ground works, continued monitoring and cultural fire.

## YOU YANGS BURN



Australian Government



CORANGAMITE CMA



Wadawurrung

This project is funded by the Australian Government Natural Heritage Trust and delivered by the Corangamite CMA, a member of the Commonwealth Regional Delivery Partners Panel, in partnership with Wadawurrung Traditional Owners Aboriginal Corporation.