



Royal Botanic Gardens Victoria and citizen scientist discover three new rare orchid species in Victoria

16 June 2026 — More than half of Victoria's native orchids are now threatened with extinction, but with the help of citizen scientists, Royal Botanic Gardens Victoria (RBGV) is working to identify and preserve these through a combination of world-leading research and hands-on conservation.

Robert Mitchell, a citizen scientist, discovered three new species of sun orchids (*Thelymitra*) in Victoria, alongside three additional species, newly recorded in the state, during walks in a Frankston green space during COVID-19 lockdowns. Not recognising them, he notified botanists from Royal Botanic Gardens Victoria, who using spirit and dried specimens from the State Botanical Collection, were able to ascertain they were new species.

The Royal Botanic Gardens Victoria Orchid Conservation Program, the biggest program of its kind in the world, is applying this knowledge to actively recover species like this, that are on the brink of extinction. The program collects seed, studies pollination biology and mycorrhizal fungi, and uses symbiotic propagation techniques to grow orchids in large numbers before reintroducing them into their natural habitats. The Program is entirely funded through grants and donations, and ongoing support will be critical to ensure these unique plants continue to survive in the wild.

Dr Noushka Reiter, Principal Scientist Conservation at RBGV, says the scale of the challenge is significant, but so is the opportunity for impact. “*The RBGV orchid conservation program brings hope to these endangered species. We are collecting seed, researching their unique pollinators and mycorrhizal fungi, and symbiotically propagating large numbers of plants so we can return them to the wild. This work is about rebuilding populations from the ground up. It’s about understanding every part of the orchid life cycle and using that knowledge to give these species a future.*”

The discoveries highlight just how much of Victoria’s biodiversity remains hidden, even as it faces increasing pressure. The genus itself includes more than 110 recognised species, many of which are difficult to study because they flower only under very specific conditions.

Victoria is home to more than 400 orchid species, yet over 200 are at risk of extinction due to habitat destruction, invasive weeds and introduced animals. Many of these plants are highly specialised, relying on precise environmental conditions, specific pollinators and microscopic fungi in the soil to survive, which makes them especially vulnerable habitat destruction and degradation.

The applied conservation research conducted at RBGV takes an integrated approach, examining habitat, distribution and identification of mycorrhizal fungi, pollinators, genetic diversity, and symbiotic propagation in the laboratory to support successful species reintroduction.

Citizen science platforms such as iNaturalist also play a vital role, helping researchers by flagging new sightings of threatened species and, in some cases, species previously unknown to science. Not far from these new discoveries on the Mornington Peninsula, is the critically endangered *Thelymitra reflexa* (Reflexed Sun Orchid) which has been reduced to less than a couple of hundred individuals due to severe habitat fragmentation. RBGV scientists have successfully symbiotically propagated this species in the thousands and if funding can be secured will be able to reintroduce this species in the coming years

Another critically endangered species, *Caladenia robinsonii* (Frankston Spider Orchid), is already showing signs of recovery. Conservation efforts thus far have supplemented an existing wild population, established two additional sites. One of which involved reintroducing more than 1,000 plants across nine subpopulations. This success has relied on detailed research into pollinator identity and distribution, fungal partnerships, propagation techniques and habitat selection.

In western Victoria, *Thelymitra mackibbinii* (Brilliant Sun-Orchid) had dwindled to only a handful of plants across the Box-Ironbark forests. Through collaboration with conservation partners, more than 500 plants have now been reintroduced to the wild, with many successfully flowering, setting seed and producing new seedlings. A further 500 plants are scheduled for reintroduction next year.



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Despite these successes, the work is far from over. Some newly described species are already critically endangered; *Thelymitra aurorae* (Wyong Sun Orchid), for example, is currently known from a single population of around 200 plants in an area smaller than one hectare, leaving it highly vulnerable to disturbance and climate change.

The program underscores both the fragility and resilience of Victoria's native orchids: while many species are on the brink, targeted science and conservation action can bring them back.

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Link to paper: https://cdn.rbv.vic.gov.au/media/1oieydel/muelleria-44-mitchell-thelymitra-34-52.pdf?_gl=1*_gun168*_ga*MTY3MzgWmJY4MC4xNzU1MTQ5NzY5*_ga_411R6RSV9N*czE3NzkyNDg0NTYkbzE2JGcwJHQxNzc5MjQ4NDU2JGo2MCRsMCRoMA

Images and media release:

<https://www.dropbox.com/scl/fo/0igief5bz5x20smxhcku1/AAAdyNsw0J4QG369qvtjw1yE?rlkey=4y1dvp2zdrztccmiqookkv1i5&st=i192xlhy&dl=0>

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Experts available for interview:

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Chris Russell, Director and Chief Executive of Royal Botanic Gardens Victoria

Dr Alastair Robinson, Manager Biodiversity Services and leading orchid researcher

Robert J. Mitchell, citizen scientist

Background information

About Royal Botanic Gardens Victoria:

Royal Botanic Gardens Victoria is one of the world's leading botanic gardens and a centre of excellence for horticulture, science and engagement. Thanks to our knowledge, expertise, drive and innovation, we are renowned for our science, our horticulture, and our innovative learning and engagement programs.

We are focused on our mission to safeguard plants for the wellbeing of people and the planet toward a vision where all life is sustained and enriched by plants.

The organisation encompasses two diverse sites at Melbourne and Cranbourne and the State Botanical Collection housed at the National Herbarium of Victoria. Royal Botanic Gardens Victoria is managed by the Royal Botanic Gardens Board Victoria, which is responsible to the Minister for Environment.