Action statement

Flora & Fauna Guarantee Act 1988

Whitfield Spider-orchid *(Caladenia cremna)*

Taxon ID: 507766

Action statements are developed under the *Flora and Fauna Guarantee Act 1988* (FFG Act). Their preparation and implementation complement the FFG Act strategy *Protecting Victoria's Environment – Biodiversity 2037* and its vision that "Victoria's biodiversity is healthy, valued and actively cared for".

Species and Distribution

Whitfield Spider-orchid. Image by Glen Johnson.

This habitat distribution model displays the indicative range of the Whitfield Spider-orchid based on occurrence records and likely habitat. See NatureKit for an interactive map.

Conservation Status

Critically Endangered

Listing criteria: 3.1.2(a), (b)(ii,iii,v); 3.1.3(b)(i,ii); 3.1.4 of the Flora and Fauna Guarantee Regulations 2020.

This means that:

- the Whitfield Spider-orchid's geographic distribution is extremely restricted; and
- it is restricted to a limited number of areas that are subject to the same threat or suite of threats that can impact all individuals present; and
- there is a continuing decline or reduction in:
  - its area of occupancy; and
  - the area, extent or quality of habitat; and
  - the number of mature individuals, and
- the total number of mature individuals is extremely low; and
  - the number is likely to continue to decline; and

- each subpopulation is extremely small; and
- most of the individuals are in one subpopulation.

Corresponding International Union for the Conservation of Nature (IUCN) criteria: B1ab(ii,iii,v)+2ab(ii,iii,v); C2a(i,ii); D**.**

More information on IUCN listing criteria can be found here: IUCN Red List criteria.

Species Information

Species information such as its description, distribution, ecology and references are provided in the Whitfield Spider-orchid Species Forecast Report and VicFlora.

Threats

Threats listed below have been identified through expert consultation and published literature.

Threat	Description
Population dynamics	
Lack of pollinators	• A lack of pollinators can limit reproduction for this species and may contribute to inbreeding depression. The main known pollinator for this species is a group of wasps knows as the thynnines.
Small population size	• Small population size places the Whitfield Spider-orchid at risk of significant impact from localised stochastic events, reduced genetic diversity and resilience.
Human disturbance	
Illegal take	• The Whitfield Spider-orchid is highly sought after by collectors. Illegal taking can cause mortality, habitat degradation and impact recruitment by compacting the soil and smothering the individuals.
Road and track construction or maintenance	• Roadside populations are vulnerable to disturbance from road run-off, smothering by dust, soil erosion, and weed and pathogen introduction during road maintenance and fire suppression activities. • Future road upgrades may threaten the species persistence at the only known wild site.
Trampling by humans	• Trampling including the accidental damage to individual plants and/or seedlings.
Native species	
Mammals	• Browsing by native species can cause mortality and reduce pollination.
Introduced species	
Introduced herbivores	• Introduced herbivores including deer species, and potentially feral pigs (*Sus scrofa*), can browse on or damage plants and may degrade habitat.
Introduced plants	• Following disturbances, introduced plants can out compete the species. Such disturbances are highly likely as the species occurs close to a roadside, at one location only.

Threat	Description
Climate change	
Altered rainfall and temperature regimes	• Altered rainfall, warmer temperatures and changed hydrology can affect growth and seedling germination including shorter flowering periods, changed pollinator flying periods and reduced time for germinants to establish.
Fire	
Altered fire regimes	• As the species only occurs in one location, one intense fire may potentially eliminate the species. • A hotter, drier climate may increase the frequency and intensity of fire impacting the Whitfield Spider-orchid habitat, with the potential to cause mortality and reduce habitat quality and/or extent. • Fires during the active growth phase of the species (autumn to spring) after the leaf emergence, but before seed is set, are likely to cause mortality of adult plants before tuber replacement occurs and reduce recruitment.

Conservation Objectives

Conservation objectives are informed by the conservation status and criteria under which the species was listed under the FFG Act. This provides a framework to understand how we can work towards recovery and improve the species' conservation status over time as per the objectives of the FFG Act.

The key objectives of this action statement are:

- Mitigate threats to populations and habitat to increase resilience, improve genetic fitness and minimise future population decline.
- Increase the Whitfield Spider-orchid's range and/or extent, by providing opportunities for natural movement.
- Increase the wild population size into at least 300 mature individuals.
- Establish at least two new viable populations within a suitable range.
- Increase knowledge of biology, ecology, distribution, demography, emerging threats, and conservation requirements.
- Support community participation and improve awareness of the Whitfield Spider-orchid and conservation of its habitat.

Conservation Actions

The actions below have been identified through expert consultation, published literature and spatial analysis. Landscape scale actions may mitigate threats for other species. For more information on where to undertake actions that benefit multiple species and identify the most beneficial locations to undertake actions for this species, please refer to NatureKit.

Action	Description
Artificial pollination	• Consider use of artificial pollination to assist in increasing population genetic diversity and reproductive success.
Avoid and/or mitigate impacts associated with fire management	• Ensure that species distribution data and ecological information is available and considered in fire management activities. • Undertake biodiversity values check prior to fuel management in areas of the species habitat, to confirm treatment suitability and timing.

Action	Description
Collect and store reproductive material	• Develop a targeted seed collection program for seed banking. Ensure collection of both seed and mycorrhizal fungi for storage and ex-situ propagation.
Community engagement and awareness	• Identify, promote, and support opportunities for community education and involvement in conservation efforts. • Raise awareness of the Whitfield Spider-orchid and the importance of protecting its habitat in the local community. • Inform and consult with landholders and land managers to mitigate the risk of unintentional damage to subpopulations. This includes non-target effects of weed control, machinery use, or inappropriate fire regimes. Encourage these key stakeholders to contribute to the implementation of conservation management actions. • Engage with local and state agencies to share survey data and knowledge on species occurrence. • Provide information and support to land managers in areas with suitable habitat regarding the control and spread of weeds and invasive native species.
Compliance and enforcement	• Undertake risk-based compliance and enforcement activities to limit the impacts of illegal taking of the Whitfield Spider-orchid.
Control introduced herbivores*	• Implement effective management and control of introduced herbivores including deer species and feral pigs.
Control introduced plants*	• Implement effective management and control of introduced plants.
Ecological fire regime	• Implement fire management actions that promote an ecologically appropriate fire regime for the Whitfield Spider-orchid.
Establish and maintain fencing	• Manage herbivory by maintaining wire guards around plants.
Ex-situ management	• Maintain ex-situ living collection. Include mature plants, representative of each remaining genetic diversity.
Protect key habitat	• Ensure that the known population is protected from disturbance associated with road widening and maintenance.
Research	• Investigate the species' ecological requirements that are relevant to persistence, particularly in the context of climate change. • Investigate and determine a suitable fire regime that meets the ecological requirements of the Whitfield Spider-orchid and promotes its recovery. • Determine the species' pollinator(s), and their presence at existing sites and potential translocation sites prior to translocation.
Survey and monitoring	• Implement a monitoring program to assess population demography, habitat condition and threats. • Comprehensively search suitable habitat, map important populations, and enter records to the Victorian Biodiversity Atlas to identify new populations and prevent potential impacts from roading, quarrying and infrastructure development that could occur in these areas.

Action	Description
Translocation	• Establish at least two new viable populations, at a sufficient distance from the existing subpopulation that they are unlikely to be impacted by the same threat or suite of threats if feasible.

**Indicates landscape-scale actions that may deliver benefits to multiple species*

Past Actions

The key conservation management actions listed below have been delivered in the past 10 years.

Past action	Description
Artificial pollination	• Artificial pollination of three plants was undertaken to increase likelihood of seed production in 2019.
Develop, update an apply forestry protections	• The risk of forestry operations was considered for this species in 2020 under the Victorian Government Threatened Species and Communities Risk Assessment. Additional permanent protections were not found to be required.
Establish and maintain fencing	• Wire guarding was placed on all four plants on site to protect from native and exotic herbivores implemented in 2019.
Ex-situ management	• Reproductive material was collected and sent to the Royal Botanical Gardens Victoria (RBGV), Victorian Conservation Seedbank in 2019. • Collection and cultivation of fungi associated with the Whitfield-Spider orchid has been undertaken at the RBGV Cranbourne Gardens. • Ex-situ cultivation has been undertaken at the RBGV Cranbourne Gardens.
Survey and monitoring	• Population monitoring has been undertaken and demographic information collected by the Victorian Government, RBGV and the community since 2019. • Targeted field surveys have been undertaken by the Victorian Government, RBGV and the community since 2019 to determine the distribution and abundance of the known population.

Decision Support Tools

Decision making for conservation actions is supported through the following Victorian Government tools which may be of assistance in choosing the most appropriate or beneficial actions for biodiversity:

- Choosing actions for nature: NatureKit
- Biodiversity Knowledge Framework

Further Information

- Whitfield Spider Orchid Species Forecast Report
- Threatened Species Assessment report – Whitfield Spider-orchid (*Caladenia cremna*)
- Commonwealth Species Profile and Threats database
- Victoria's changing climate – understanding the impacts of climate change on Victoria
- Genetic Risk Index
- Commonwealth Threat Abatement Plans

- Flora and Fauna Guarantee Regulations 2020
- IUCN criteria summary

Get Involved and Take Action

If you are interested in supporting this species' recovery, there are some important things you need to consider.

The Department of Energy, Environment and Climate Action (DEECA) is committed to engaging and partnering with Traditional Owners on how they wish to be involved in the planning and implementation of actions for this species. Steps must be taken to avoid harm and where appropriate ensure actions can deliver cultural benefits.

You can find advice about required approvals, land manager and/or owner permissions, options and incentives for private land conservation, and engagement with Traditional Owners and public land managers here: Action statements (environment.vic.gov.au)

To identify the relevant Traditional Owners, use the Aboriginal Cultural Heritage Register and Information System (ACHRIS) Welcome to Country and Acknowledgements Map.

You can also register your interest in taking action so we can connect you to other people or organisations working to help us secure the future for this species at threatened.species@deeca.vic.gov.au

Reporting Actions

Activity data is critical to monitoring the implementation and progress of actions and evaluating action statements. These data are also used to:

- Determine progress towards achieving the contributing targets for Protecting Victoria's Environment – Biodiversity 2037.
- Inform the five-yearly State of the Environment Report.

For guidance on reporting actions undertaken on this species, refer to Activity Data.

Submitting Monitoring Data

The Victorian Biodiversity Atlas (VBA) provides a foundational dataset showing where biodiversity occurs across the Victorian landscape and how it may have changed over time. As a core input for decision support tools that inform conservation action, public land management, research activities and reporting, we encourage all participants in the delivery of on-ground actions to submit species records and observations, including for introduced plants and animals, as they carry out their projects.

For further information see: Victorian Biodiversity Atlas (environment.vic.gov.au)

Sign up and begin submitting your data today at: https://vba.biodiversity.vic.gov.au/

Acknowledgment

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.

ISSN 1448-9902 **(online)**

Accessibility

If you would like to receive this publication in an alternative format, please telephone the DEECA Customer Service Centre on 136186, email customer.service@delwp.vic.gov.au or via the National Relay Service on 133 677 www.relayservice.com.au. This document is also available on the internet at www.environment.vic.gov.au