Action statement

Flora & Fauna Guarantee Act 1988

Crimson Spider-orchid *(Caladenia concolor)*

Taxon ID: 504347

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

Crimson Spider-orchid. Image by Neville Bartlett.

This habitat distribution model displays the indicative range of the Crimson Spider-orchid based on occurrence records and likely habitat. See NatureKit for an interactive map. The Crimson Spider-orchid also occurs outside Victoria.

Conservation Status

Endangered

Listing criteria: 4.1.2(a), (b)(i,ii,iii,iv,v); 4.1.3(b)(i); 4.1.4 of the Flora and Fauna Guarantee Regulations 2020.

This means that:

- its geographic distribution is highly restricted; and
- the distribution of the population or habitat is severely fragmented; 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 extent of occurrence; and
  - its area of occupancy; and
  - the area, extent or quality of habitat; and
  - the number of locations or subpopulations; and
  - the number of mature individuals; and
- the total number of mature individuals is very low, the number is likely to continue to decline and each subpopulation is very small.

Corresponding International Union for the Conservation of Nature (IUCN) criteria:
B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v); C2a(i); 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 Crimson Spider-orchid Species Forecast Report and VicFlora.

Threats

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

Threat	Description
Climate change	
Altered rainfall and temperature regimes	• Altered rainfall and hydrological regimes and warming climates can affect growth, seedling germination and result in shorter flowering periods, changed pollinator flying periods and reduced time for germinants to establish.
Fire	
Altered fire regime	• Fires (including planned burns) that occur during the active growth phase of the species (autumn, winter, 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. • A hotter, drier climate may increase the likelihood or frequency of fire impacting Crimson Spider-orchid habitat, with the potential to cause direct mortality and reduce habitat quality and/or extent.
Introduced species	
Introduced herbivores	• Deer, including Fallow Deer (*Dama dama*) and Red Deer (*Cervus elaphus*), feral pigs (*Sus scrofa*), feral goats (*Capra hircus*), rabbits (*Oryctolagus cuniculus*) and hares (*Lepus europaeus*) damage habitat by browsing, trampling, pugging, and/or foraging.
Introduced invertebrates	• Herbivory by introduced invertebrates such as the Black Portuguese Millipede (*Ommatoiulus moreleti*) and Redlegged Earth Mite (*Halotydeus destructor*) can damage the plant and reduce recruitment.
Introduced plants	• Introduced plants, including English Broom (*Cytisus scoparius*), St John's Wort (*Hypericum perforatum*), Blackberry (*Rubus fruitcosus* spp. agg.) and annual grasses such as Sweet Vernal-grass (*Anthoxanthum odoratum*), Panic Veldt-grass (*Ehrharta erecta*) and Cocksfoot (*Dactylis glomerata*) out-compete the Crimson Spider-orchid for resources, change the vegetation type and structure, and alter microhabitats.
Native species	
Birds	• White-winged Choughs (*Corcorax melanorhamphos*) can impact the species by consuming tubers.
Mammals	• Grazing by macropods and possums may damage plants and limit seed set, particularly after fire.

Threat	Description
Native flora outside of natural range	• Early Black-wattle (*Acacia decurrens*), growing outside its natural range, may directly out-compete Crimson Spider-orchids for resources, change the vegetation type and structure, and alter microhabitats.
Problematic native plants	• Native shrubs such as *Kunzea* spp. and *Cassinia* spp. can alter vegetation structure, lead to direct competition, and change habitat conditions for associated fungi and pollinators.
Habitat loss, degradation or modification	
Land use change	• Land clearing and land use change associated with residential development, agriculture, and plantations may cause mortality of plants, reduce habitat quality and extent, and increase fragmentation. • Loss and damage to habitat through land use change, e.g., to agriculture, urban development, and plantations, may cause mortality of plants, reduce habitat quality and extent, and increase fragmentation.
Livestock	• Grazing and trampling by livestock, particularly during the above ground active phase for the species, can physically damage plants, limit seed set and cause direct mortality. • Trampling by livestock can also lead to habitat degradation from vegetation and soil disturbance, compaction and weed invasion.
Human disturbance	
Construction, development and/or infrastructure	• Construction, development and/or infrastructure impacts can cause direct mortality of Crimson Spider-orchid and loss of or damage to habitat,
Illegal take	• Illegal taking of the Crimson Spider-orchid may pose a threat to due to its rarity.
Recreational activities	• Mortality of individual plants, damage and destruction of habitat may occur from illegal off-road vehicle and trail bike use.
Road and track maintenance	• Roadside populations are vulnerable to disturbance from run-off, soil erosion, and weed and pathogen introduction during road maintenance and fire suppression activity.
Pollutants and toxicants	
Litter	• Rubbish dumping has potential to cause physical damage and/ or lead to mortality of plants. Dumping of garden waste can introduce new weed species.
Population dynamics	
Lack of pollinators	• The loss of surrounding plant species and diversity can result in a lack of pollinators, which can reduce reproduction for this species. The main known pollinator for this species is a group of wasps knows as the thynnines.
Loss of genetic diversity	• Low plant numbers create a risk of genetic decline. Inbreeding depression due to limited or absent natural pollination is also a threat to the species.
Small population size	• Small subpopulations are highly susceptible to stochastic events causing major decline or local extinction.

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, increase genetic fitness and minimise future population decline.
- Increase the Crimson Spider-orchid's range and/or extent, by providing opportunities for natural movement.
- Increase the wild population size in Victoria to at least 250 mature individuals.
- Increase knowledge of biology, ecology, distribution, demography, emerging threats, and conservation requirements.
- Support community participation and improve awareness of the Crimson 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 seed set and improving genetics at existing populations where pollinators are absent or natural pollination is low.
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.
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	• Raise awareness of the Crimson Spider-orchid and the importance of protecting its habitat in the local community. • Increase landholder awareness of the Crimson Spider-orchid, known locations, and impacts of livestock grazing, non-target effects of introduced plant control, machinery use, and inappropriate fire regimes for the species. • Provide guidance on the changes to grazing that may be required to support the recovery of the species. This may include fencing plants or excluding grazing during the orchid's growing season. • Encourage these key stakeholders to contribute to the implementation of conservation management actions. • Identify, promote, and support opportunities for community education and involvement in conservation efforts. • Engage with local and state agencies to share survey data and knowledge on the species' occurrence.

Action	Description
Compliance and enforcement	• Undertake risk-based compliance and enforcement activities to limit the impacts of illegal taking, illegal rubbish dumping and illegal recreational activities to the species.
Control introduced herbivores*	• Implement effective management and control of deer, feral goats, feral pigs, and rabbits.
Control introduced invertebrates*	• Implement effective management and control of introduced invertebrates including Black Portuguese Millipede and Redlegged Earth Mite.
Control introduced plants*	• Implement effective management and control of introduced plants, including woody weeds, perennial and exotic annual grasses.
Develop, update and apply forestry protections	• Maintain prescriptions for this species under the Code of Practice for Timber Production 2014 (as amended in 2022) (the Code). • Where relevant, incorporate species-specific protection measures into plans and permits relating to timber harvesting operations in native forest on private land.
Ecological fire regime	• Implement fire management actions that promote an ecologically appropriate fire regime for the Crimson Spider-orchid.
Establish and maintain fencing	• Maintain existing fencing and consider caging or fencing any new or currently unfenced populations and/or individual plants to minimize impact of introduced and native herbivores where required.
Ex-situ management	• Advance ex-situ breeding to maintain genetic diversity and support seed orcharding and subsequent plant establishment for future translocations.
Manage problematic native species	• Implement effective control of problematic native plants including those growing outside of their natural range where they threaten Crimson Spider-orchid.
Manage public access	• Reduce potential for damage from human recreation activity by re-directing or closing vehicle tracks and trails close to populations where possible. For vehicle tracks or trails that cannot be moved, consider other options for protection.
Manage road and track works	• Protect plants near roads prior to and during road maintenance activities.
Permanent protection	• Investigate incentives, voluntary agreements, covenants and other permanent protection measures to protect and restore habitat.
Research	• Investigate the ecological requirements of the Crimson Spider-orchid, including associated pollinator and mycorrhizal fungi and microsite conditions that are relevant to recruitment and persistence, particularly in the context of climate change and increases in fire frequency. • Investigate and determine a suitable fire regime that meets the ecological requirements of the Crimson Spider-orchid and promotes its recovery. • Determine the presence of the species' pollinators at existing sites and potential translocation sites prior to translocation. • Clarify the taxonomy of the species to ascertain its current and former distribution and population size, especially in Melbourne's north-east.

Action	Description
	• Investigate options for linking, supplementing, or establishing additional subpopulations via translocation. • Identify climate refuges that may be suitable translocation sites. • Undertake a population viability analysis to determine management options to promote the species recovery across its range.
Restoration and/or revegetation	• Revegetate or restore cleared or degraded land at all known locations. • Explore opportunities for habitat enhancement through revegetation with species that encourage presence of the native pollinators of Crimson Spider-orchid.
Survey and monitoring	• Monitor population size, distribution, the relative impacts of threatening processes and the effectiveness of management actions. • Survey suitable and potential habitat to locate any additional populations. Enter and maintain records in the Victorian Biodiversity Atlas (VBA).

**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 has been undertaken to increase likelihood of seed production and reduce risk of cross pollination with other Caladenia species.
Control introduced plants	• Control of introduced plants has been undertaken on council land to protect plants, and local councils have supported landowners to control introduced plants through grants.
Develop, update and apply forestry protections	• The Crimson Spider-orchid has current species-specific prescriptions in the Code: – In the Central Highlands Forest Management Areas (FMA): Protect populations from disturbance where possible. Consult with a botanist to determine if management actions are required to protect occurrences in the vicinity of prescribed burning activities. – In the North East FMAs: Apply a management area of 200 m radius over populations. Conduct a site inspection and detailed planning in consultation with the Department to ensure the species is adequately protected during timber harvesting operations. • 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	• Fences were established at two known populations to exclude herbivores. • Fencing/caging was established to protect suspected plants in Wattle Glen, Cottles Bridge and St Andrews.
Ex-situ management	• Reproductive material has been collected and sent to the Royal Botanical Gardens Victoria, Victorian Conservation Seedbank.

Past action	Description
Survey and monitoring	• Monitoring has been undertaken at some sites to determine if plants emerge, flower and pollinate.

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

- Crimson Spider-orchid Species Forecast Report
- Threatened Species Assessment report – Crimson Spider-orchid (*Caladenia concolor*)
- Commonwealth Species Profile and Threats database
- Threatened Species and Communities Risk Assessment
- Victoria's changing climate – understanding the impacts of climate change on Victoria
- Code of Practice for Timber Production 2014
- Genetic Risk Index
- 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.

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Accessibility

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