

# Action statement

*Flora & Fauna Guarantee Act 1988*

## Elegant Spider-orchid (*Caladenia formosa*)

Taxon ID: 504486

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



Elegant Spider-orchid. Image from Atlas of Living Australia.



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

### Conservation Status

**Critically endangered**

**Listing criteria:** 3.1.1 of the Flora and Fauna Guarantee Regulations 2020.

This means that:

- the Elegant Spider-orchid has undergone, is suspected to have undergone, or is likely to undergo in the immediate future, a very severe reduction in population size.

**Corresponding International Union for the Conservation of Nature (IUCN) criteria:** A2ace+3ce+4ace.

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 [Elegant Spider-orchid Species Forecast Report](#) and [Vicflora](#).

## Threats

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

Threat	Description
<b>Climate change</b>	
Altered rainfall and temperature regimes	<ul style="list-style-type: none"> <li>Altered rainfall and a warming climate can affect hydrological regimes and consequently growth and seedling germination, including shorter flowering periods, changed pollinator flying periods and reduced time for germinants to establish.</li> </ul>
<b>Fire</b>	
Altered fire regimes	<ul style="list-style-type: none"> <li>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 death of adult plants before tuber replacement occurs and reduce recruitment. The optimal fire regime for the species is not known.</li> <li>A hotter, drier climate may increase the likelihood or frequency of fire impacting Elegant Spider-orchid habitat, with the potential to cause direct mortality and reduce habitat quality and/or extent.</li> </ul>
Fire management activities	<ul style="list-style-type: none"> <li>Fire management operations such as creation of fuel breaks (soil disturbance, slashing) may remove habitat, cause mortality of individuals, and reduce regeneration.</li> </ul>
<b>Introduced species</b>	
Introduced herbivores	<ul style="list-style-type: none"> <li>Fallow Deer (<i>Dama dama</i>) and Red Deer (<i>Cervus elaphus</i>), rabbits (<i>Oryctolagus cuniculus</i>), hares (<i>Lepus europaeus</i>), and feral goats (<i>Capra hircus</i>) can browse on or damage plants and may degrade habitat.</li> </ul>
Introduced plants	<ul style="list-style-type: none"> <li>Introduced plants may directly out-compete Elegant Spider-orchids for resources, change the vegetation type and structure, and alter microhabitats. Specific species of concern include Bridal Creeper (<i>Asparagus asparagoides</i>), Common Olive (<i>Olea europaea</i>), Perennial Veldt Grass (<i>Erharta calycina</i>), African Box-thorn (<i>Lycium ferocissimum</i>) and South African Orchid (<i>Disa bracteata</i>).</li> </ul>
<b>Human disturbance</b>	
Firewood collection	<ul style="list-style-type: none"> <li>Firewood collection from areas where Elegant Spider-orchid occurs may lead to trampling / damage to individuals, soil compaction and habitat degradation with potential to impact population size.</li> </ul>
Illegal take	<ul style="list-style-type: none"> <li>Due to its rarity, illegal taking of the Elegant Spider-orchid may pose a significant threat.</li> </ul>
Recreational activities	<ul style="list-style-type: none"> <li>Mortality of individual plants, damage and destruction of habitat may occur from uncontrolled off-road vehicle, horse riding and trail bike use.</li> </ul>
Trampling by humans	<ul style="list-style-type: none"> <li>Accidental damage to individual adult plants and/or seedlings can occur when people walk through the habitat.</li> </ul>
<b>Native species</b>	
Birds	<ul style="list-style-type: none"> <li>Browsing by Emu (<i>Dromaius novaehollandiae</i>) may damage plants and limit seed set.</li> </ul>

Threat	Description
Mammals	<ul style="list-style-type: none"> <li>Grazing by macropods including kangaroos, wallabies and possums may damage plants and limit seed set.</li> </ul>
Native flora outside of natural range	<ul style="list-style-type: none"> <li>Sallow Wattle (<i>Acacia longifolia</i>) and Golden Wreath Wattle (<i>Acacia saligna</i>), growing outside their natural range, may directly out-compete Elegant Spider-orchids for resources, change the vegetation type and structure, and alter microhabitats.</li> </ul>
<b>Pollutants and toxicants</b>	
Litter	<ul style="list-style-type: none"> <li>Rubbish dumping has potential to cause physical damage and/ or lead to mortality of plants. Dumping of garden waste can introduce new weed species.</li> </ul>
Pesticide use	<ul style="list-style-type: none"> <li>The off-site impacts of chemicals used on land adjacent to populations is not well understood, but may lead to direct mortality of plants, or a reduction in pollinator populations.</li> </ul>
<b>Habitat loss, degradation or modification</b>	
Land use change	<ul style="list-style-type: none"> <li>Land clearing and a change in land use from grazing to cropping or hardwood plantations, may cause mortality of plants, reduce habitat quality and extent, and increase fragmentation.</li> </ul>
Livestock	<ul style="list-style-type: none"> <li>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 of the Elegant Spider-orchid.</li> <li>Trampling by livestock can lead to vegetation and soil disturbance, compaction and facilitation of weed invasion which damage habitat.</li> </ul>
Mining	<ul style="list-style-type: none"> <li>Mining, including exploration drilling on public land, has potential to cause habitat degradation or loss due to direct and indirect impacts.</li> </ul>
<b>Population dynamics</b>	
Fragmentation	<ul style="list-style-type: none"> <li>The Elegant Spider-orchid was almost certainly once more widespread and abundant, but much of its habitat has been cleared with surviving subpopulations highly fragmented.</li> </ul>
Loss of genetic diversity	<ul style="list-style-type: none"> <li>The Elegant Spider-orchid is known to hybridise with several other <i>Caladenia</i> species, which may result in the loss of some genes specific to this species.</li> </ul>
Small population size	<ul style="list-style-type: none"> <li>Very small subpopulations are highly susceptible to stochastic events causing major decline or local extinction within a very short time frame.</li> </ul>

## 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 Elegant Spider-orchid's range and/or extent, by providing opportunities for natural movement.

- Establish at least two new viable populations within its historic range.
- Increase knowledge of biology, ecology, distribution, demography, emerging threats, and conservation requirements.
- Support community participation and improve awareness of the Elegant Spider-orchid.

## Conservation Actions

The actions below have been identified through expert consultation, published literature and spatial analysis. Actions are listed in alphabetical order to allow all interested parties to prioritise based on their context, capacity and capability. 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
Avoid and/or mitigate impacts associated with fire management	<ul style="list-style-type: none"> <li>• Ensure that species distribution data and ecological information is available and considered in fire management activities.</li> <li>• Undertake biodiversity values check prior to fuel management in areas of the species habitat, to confirm treatment suitability and timing.</li> </ul>
Build resilience by translocation / gene mixing	<ul style="list-style-type: none"> <li>• Investigate options for supplementing, linking, or establishing additional subpopulations. Include consideration of predicted future climate conditions and presence of known hybridizing species.</li> </ul>
Collect and store reproductive material	<ul style="list-style-type: none"> <li>• Maintain seed storage in appropriate institutions. Representative samples of seeds from all natural populations should be collected and stored.</li> <li>• Maintain mycorrhizal fungibank collection and storage.</li> </ul>
Community engagement and awareness	<ul style="list-style-type: none"> <li>• Identify, promote, and support opportunities for community education and involvement in conservation efforts.</li> <li>• Inform and consult with landholders and land managers where there are known subpopulations to mitigate the risk of unintentional damage. This includes non-target effects of introduced plant control, machinery use, or inappropriate fire regimes. Encourage these key stakeholders to contribute to the implementation of conservation management actions.</li> <li>• Increase landholder awareness of the Elegant Spider-orchid and impacts of livestock grazing to 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.</li> </ul>
Compliance and enforcement	<ul style="list-style-type: none"> <li>• Undertake risk-based compliance and enforcement activities to limit the impacts of illegal firewood collection, illegal take, illegal rubbish dumping and illegal recreational activities, to the species.</li> </ul>
Control introduced herbivores*	<ul style="list-style-type: none"> <li>• Implement effective management and control of introduced herbivores including deer species, rabbits, hares and feral goats.</li> </ul>
Control introduced plants *	<ul style="list-style-type: none"> <li>• Implement effective management and control of introduced plants that threaten the Elegant Spider-orchid.</li> </ul>
Develop, update and apply forestry protections	<ul style="list-style-type: none"> <li>• Maintain prescriptions for this species under the <i>Code of Practice for Timber Production 2014 (as amended in 2022)</i> (the Code).</li> <li>• Where relevant, incorporate species-specific protection measures into plans and permits relating to timber harvesting operations in native forest on private land.</li> </ul>

Action	Description
Ecological fire regime	<ul style="list-style-type: none"> <li>Implement fire management actions that promote an ecologically appropriate fire regime for the Elegant Spider-orchid.</li> </ul>
Establish and maintain fencing	<ul style="list-style-type: none"> <li>Maintain existing fencing and consider caging or fencing any new or currently unfenced populations and/or individual plants where required to minimise impact of livestock and introduced and native herbivores where required.</li> </ul>
Ex-situ management	<ul style="list-style-type: none"> <li>Maintain ex-situ living collection. Include mature plants, representative of each known population and genetic diversity remaining across populations.</li> </ul>
Manage problematic native plants	<ul style="list-style-type: none"> <li>Implement effective control of native plants growing outside of their natural range where they threaten Elegant Spider-orchid.</li> </ul>
Permanent protection	<ul style="list-style-type: none"> <li>Investigate incentives, voluntary agreements, covenants, and other permanent protection measures to protect and restore habitat.</li> </ul>
Protect key habitat	<ul style="list-style-type: none"> <li>Protect populations from adverse land use changes.</li> </ul>
Research	<ul style="list-style-type: none"> <li>Investigate the ecological requirements, of Elegant Spider-orchid and associated pollinator and mycorrhizal fungi, that are relevant to persistence, particularly in the context of climate change.</li> <li>Investigate and determine a suitable fire regime that meets the ecological requirements of the Elegant Spider-orchid and promotes its recovery.</li> <li>Undertake review of existing monitoring data for Elegant Spider-orchid and use to inform management needs.</li> <li>Undertake genetic assessment of wild and existing ex-situ collections to ensure breeding program is fit for purpose.</li> <li>Investigate the impacts of altered hydrology and any chemical use including at <i>Eucalyptus</i> plantations on land adjacent to the habitat of Elegant Spider-orchid.</li> </ul>
Survey and monitoring	<ul style="list-style-type: none"> <li>Comprehensively survey suitable and potential habitat to locate any additional populations and enter records to the Victorian Biodiversity Atlas (VBA).</li> <li>Monitor population size, distribution, the relative impacts of threatening processes and the effectiveness of management actions.</li> </ul>

*\*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
Collect and store reproductive material	<ul style="list-style-type: none"> <li>Reproductive material has been collected and sent to the Royal Botanical Gardens Victoria for storage as part of the Victorian Seed Bank Conservation project.</li> </ul>
Develop, update, and apply forestry protections	<ul style="list-style-type: none"> <li>The Elegant Spider-orchid has a current species-specific prescription in the Code: <ul style="list-style-type: none"> <li>In the Portland-Horsham Forest Management Area: Manage occurrences in consultation with the Department unless already protected.</li> </ul> </li> </ul>

Past action	Description
	<ul style="list-style-type: none"> <li>The risk of forestry operations was assessed for this species in 2020 under the Victorian Government Threatened Species and Communities Risk Assessment. Additional permanent protections were not found to be required.</li> </ul>
Manage problematic native plants	<ul style="list-style-type: none"> <li>Control of outside of natural range native <i>Acacia</i> species has been undertaken at Meereek State Forest to reduce impacts on Elegant Spider-orchid.</li> </ul>
Survey and monitoring	<ul style="list-style-type: none"> <li>Long-term population monitoring has been undertaken.</li> </ul>

## 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

- [Elegant Spider-orchid Species Forecast Report](#)
- [Threatened Species Assessment report – Elegant Spider-orchid \(\*Caladenia formosa\*\)](#)
- [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](#)
- [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](mailto: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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