Action statement

Flora & Fauna Guarantee Act 1988

Coastal Leek-orchid *(Prasophyllum litorale)*

Taxon ID: 503889

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

Coastal Leek-orchid. Image by Marc Freestone

Coastal Leek-orchid Victorian Biodiversity Atlas (VBA) records since 1970. See NatureKit for an interactive map. The Coastal Leek-orchid also occurs outside Victoria, but it is possible that the only other occurrence, in South Australia, is extinct.

Conservation Status

Critically endangered

Listing criteria: 3.1.3(a), 3.1.3(b)(i) of the Flora and Fauna Guarantee Regulations 2020.

This means that:

- the total number of mature individuals is very low; and
- the number is expected to continue to decline at a very high rate; and
- each subpopulation is extremely small.

Corresponding International Union for the Conservation of Nature (IUCN) criteria: C1+C2a(i).

More information on IUCN listing criteria can be found here: IUCN Red List of Threatened Species

Species Information

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

Threats

The threats below have been identified through expert consultation and published literature.

Threat	Description
Climate change	
Increased frequency or length of droughts	• Prolonged and intense drought stress increases the risk of adult mortality and recruitment failure.
Sea-level rise	• Populations at low elevations, such as Bridgewater Lakes and possibly also Swan Lake, are threatened by coastal instability and sea level rise resulting in coastal erosion and infiltration of salt water into freshwater water tables.
Fire	
Altered fire regime	• Changes to fire ecology of coastal heaths may threaten the species, especially where heaths become too dense and remain unburnt for many years. • Fire during the growth phase of the species can result in mortality of adult plants. Use of fire should only be applied during the dormant phase of the species (February to May).
Introduced species	
Introduced invertebrates	• Introduced Mediterranean Coastal Snails (*Theba pisana*) graze on the plants.
Rabbits	• Rabbits (*Oryctolagus cuniculus*) browse the plants.
Weeds	• Myrtle-leaf Milkwort (*Polygala myrtifolia*) is a significant threat as it has invaded considerable areas of the coast. • Competition from the invasive Western Cape Bridal Creeper (*Asparagus asparagoides* Western Cape form), St John's Wort (*Hypericum perforatum*), Patterson's Curse (*Echium plantagineum*), and Pyp Grass (*Ehrharta villosa)* threaten the Coastal Leek-orchid while Pine (*Pinus* spp.) and African Boxthorn (*Lycium ferocissimum*) are also competitive weeds of concern.
Native species	
Macropods	• All sites are subject to over-grazing by Black-tailed Wallabies (*Wallabia bicolor*) and Eastern Grey Kangaroos (*Macropus giganteus*).
Native flora species outside of natural range	• Invasion by Coast Wattle (*Acacia longifolia* subsp. *sophorae*) and Coast Tea-tree (*Leptospermum laevigatum*) leads to broadscale changes to coastal plant communities.
Habitat loss, degradation or modification	
Changes in soil moisture	• Significant hydrological modification across the range of the species, results in drying of the soil, induces changes in vegetation structure and fire behaviour and facilitates invasion of drought-tolerant shrubs such as Coast Wattle and Coast Tea tree.

Threat	Description
Habitat loss, degradation or modification	
Recreational activities	• Long-term changes to coastal plant communities have occurred through damage and destruction by uncontrolled off-road vehicle use, especially dune buggies and motor bikes. Slashing and trampling by campers also causes damage.
Population dynamics	
Fragmentation	• A considerable amount of potential habitat near the coast between Portland and Nelson has been historically cleared for agricultural development and pine plantations, resulting in fragmentation of surviving subpopulations in these districts. • The Dutton Way subpopulation, at the eastern limit of the species' range, has not been seen since 1991.

Conservation Objectives

Conservation objectives are informed by the conservation status and criteria in 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 total wild population size to at least 250 individuals.
- Establish at least three new viable subpopulations within its historic range.
- Increase knowledge of biology, ecology, distribution, demography and conservation requirements.
- Support community participation and improve awareness of the Coastal Leek-orchid and conservation of coastal heath environments.

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	• 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 seedbanking. Ensure collection of both seed and mycorrhizal fungi for storage and ex situ propagation. • Build an ex-situ breeding population representative of the genetic diversity remaining in the species, to be used for seed orcharding and subsequently establishment of plants for translocations.

Action	Description
Community engagement	• Raise awareness of Coastal Leek-orchid and the importance of protecting its habitat in the local community, particularly in regard to subpopulations in parks and reserves. • Inform and consult with landowners and managers of sites where there are known subpopulations to mitigate the risk of unintentional damage to subpopulations, such as non-target effects of weed control or inappropriate fire regimes and 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.
Control introduced invertebrates*	• Implement and deliver invasive Mediterranean Coastal Snail control programs across the range of the species.
Control rabbits *	• Reduce rabbit population densities by maintaining effective control programs.
Control weeds*	• Identify and remove weeds and manage sites to prevent introduction of invasive weeds that threaten the species' habitat including Myrtle-leaf Milkwort and Western Cape Bridal Creeper. • Design and implement a plan to manage the invasion of Coast Wattle and Coast Tea-tree. • Provide information and support to land managers in areas with suitable habitat regarding the control and spread of weeds and invasive native species.
Establish exclusion fencing	• Erect exclusion fencing and gates around important sites to protect individual plants from human disturbance and herbivore destruction.
Investigate land management options	• Investigate formal conservation arrangements, management agreements and covenants on private land and, for crown and private land, investigate voluntary inclusion in reserve tenure if possible.
Manage access	• Control access routes on public land to manage public access at known sites.
Monitoring and surveys	• Identify populations that are the most important for conservation. • Assess population size, distribution, and ecological requirements of the species, and the relative impacts of threatening processes. • Undertake survey work in suitable and potential habitat to locate any additional populations, particularly in remote and largely inaccessible parts of the south coast. • Conduct pre- and post-burn monitoring to provide further information on how Coastal Leek-orchid responds to fire over time. (Prior to undertaking this, trial these activities on a common, closely related species of *Prasophyllum* in similar habitat.)
Research	• Determine the genetic diversity of the remaining plants across the range of the species, to inform appropriate seed collection. • Determine if there is gene flow between subpopulations and whether the species is suffering from any negative effects of small population size. • Determine the species' pollinator(s) their presence at existing sites and potential translocation sites prior to translocation.

Action	Description
	• Assess drought tolerance, susceptibility and interactive effects of multiple synergistic disturbances such as drought, fire and changes to groundwater quality through saltwater intrusion.
Translocation	• Investigate options for linking, supplementing or establishing additional subpopulations.
Undertake ecological burning	• Implement a suitable fire regime that meets the Coastal Leek-orchid's ecological requirements and promotes the species' recovery.

**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	• Reproductive material was collected in 2015 from the population in Discovery Bay Regional Park and sent to the Royal Botanical Gardens Victoria for storage as part of the Victorian Seed Bank Conservation project. • Limited mycorrhizal fungal collection was undertaken in 2017 and 2018 by RBGV and Australian National University, investigating the fungal associations and propagation methods of *Prasophyllum* spp. A small germination trial was undertaken, with approximately 30 seedlings germinated via symbiotic propagation.
Conservation planning	• An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Conservation Advice was developed by Victoria in 2022.
Control weeds	• In 2015 Conservation Volunteers Australia undertook woody weed control of pines and Coast Tee-tree at the Discovery Bay Limestone Ridge.
Monitoring and surveys	• In 2015 the Victorian Government commissioned a targeted survey for the species within the Discovery Bay Coastal Park. A total of 44 individual plants was located across four separate sites including Swan Lake, South of Browns Road, Quarry Road & South of Sandy Hill Road.

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

- Coastal Leek-orchid Species Forecast Report.
- EPBC Act Conservation Advice – Coastal Leek-orchid (*Prasophyllum littorale*)
- Victoria's changing climate – understanding the impacts of climate change in Victoria
- Commonwealth Threat Abatement Plans
- Flora and Fauna Guarantee Regulations 2020

- IUCN Red List criteria descriptions

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 useful advice about required approvals, land 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.

Interested parties are encouraged to work together across community, government, private and public land managers and Traditional Owners to undertake these actions and secure funding for their implementation.

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 weeds and introduced 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

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