

Action statement

Flora & Fauna Guarantee Act 1988

Tall Astelia (*Astelia australiana*)

Taxon ID: 500296

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



Tall Astelia. Image from Atlas of Living Australia.



This habitat distribution model displays the indicative range of the Tall Astelia based on occurrence records and likely habitat. See [NatureKit](#) for an interactive map.

Conservation Status

Critically Endangered

Listing criteria: 4.1.1; 4.1.2(a),(b)(i,ii,iii,iv,v) of the Flora and Fauna Guarantee Regulations 2020.

This means that:

- The Tall Astelia has undergone, is suspected to have undergone, or is likely to undergo in the immediate future, a severe reduction in population size.
- 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.

Corresponding International Union for the Conservation of Nature (IUCN) criteria: A2ace+3ce+4ace; B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v).

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 [Tall Astelia Species Forecast Report](#) and [VicFlora](#).

Threats

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

Threat	Description
Habitat loss, degradation, or modification	
Forestry operations	<ul style="list-style-type: none"> Timber harvesting operations in native forest have the potential to remove or degrade habitat, compact soils, contribute to erosion and sedimentation, exacerbate the spread of introduced species, pathogens and parasites, and cause mortality of individuals. Altered hydrology, particularly from regenerating forests, can reduce the extent and condition of habitat for Tall Astelia.
Loss of key habitat features	<ul style="list-style-type: none"> A change in the optimal canopy cover for the species can result in either drying of habitat (too many canopy gaps) or reduced flowering (too few canopy gaps).
Altered hydrology	
Altered water regime	<ul style="list-style-type: none"> Changes to flow or water regimes may impact habitat suitability, recruitment and/or mortality, and ultimately site occupancy.
Fire	
Altered fire regimes	<ul style="list-style-type: none"> A hotter, drier climate may increase the likelihood or frequency of fire impacting habitat, with the potential to reduce habitat extent and/or condition. Forests regenerating after fire events relinquish higher quantities of soil water than mature forests, leaving less water to maintain the swampy conditions of the drainage lines favoured by Tall Astelia.
Bushfire	<ul style="list-style-type: none"> Bushfires can result in mortality and cause habitat degradation. Loss of preferred habitat through fire is highly likely to lead to loss of colonies, as Tall Astelia rarely occurs outside of Cool Temperate Rainforest. Past bushfire events in the wet forest habitats of Tall Astelia are considered responsible for some local extinctions.
Fire management activities	<ul style="list-style-type: none"> Fuel management operations are not usually applied in typical Tall Astelia habitat (wet forests) however individuals that occur, upslope of typical habitat, may be subject to fire management operations such as creation of fuel breaks which may remove habitat, cause mortality of individuals, and reduce regeneration.

Threat	Description
Human disturbance	
Road and track construction or maintenance	<ul style="list-style-type: none"> Roadside populations are vulnerable to loss or damage to individuals and habitat, because of direct impacts of road construction and maintenance works (e.g., grading/mowing/slashing/lopping) and indirect impacts from associated run-off, soil erosion, and potential weed and pathogen introduction. Management activities (e.g., slashing, invasive species management) along the transmission line track in proximity to the population located at Egg Rock are a known risk at that locality.
Trampling by humans	<ul style="list-style-type: none"> Trampling of habitat by humans can result in habitat degradation and may impact recruitment and/or mortality rates. Trampling resulting from monitoring activity or frequent visitation may pose a threat to individuals and populations via direct damage to plants or through disturbance to the root zone.
Pathogens and disease	
Disease	<ul style="list-style-type: none"> Threatened species with small populations and/or reduced genetic diversity are more susceptible to disease risk, both from known, and new/emerging diseases. It is possible that a pathogenic fungal disease caused by <i>Pythium</i> sp. which causes crown and root rot in young plants, may be the explanation for a lack of recruitment in many stands. These fungi have the potential to cause mortality, especially of seedlings, which could be a reason for the observed lack of recruitment in Tall Astelia.
Myrtle Wilt	<ul style="list-style-type: none"> Myrtle Wilt is a natural disease of Myrtle Beech (<i>Nothofagus cunninghamii</i>). It is caused by a fungus (<i>Chalara australis</i>) infecting plants through wounded tissue, and almost always causes mortality to the infected tree. This is a major threat to habitat throughout the Great Otway National Park and the Central Highlands where Myrtle Beech is the dominant or co-dominant canopy species. Myrtle Wilt threatens Tall Astelia habitat by causing mortality of the sheltering Myrtle Beech trees, opening the canopy, and contributing to drying of the wet forest.
Introduced species	
Introduced herbivores	<ul style="list-style-type: none"> Introduced herbivores including Sambar Deer (<i>Cervus unicolor</i>), European Fallow Deer (<i>Dama dama</i>), Red Deer (<i>Cervus elaphus</i>) and feral pigs (<i>Sus scrofa</i>) degrade habitat through herbivory, trampling, pugging, and wallowing in wet soils, increasing nutrient loads, erosion of waterway edges, and increasing the accessibility of habitat to introduced plants.
Introduced plants	<ul style="list-style-type: none"> Introduced plants can directly compete for resources or indirectly modify habitat conditions, hence reducing species abundance and diversity. Invasion by environmental weeds, especially Forest Blackberry (<i>Rubus polyanthemus</i>) is a threat for some populations, especially where gaps in the canopy, and disturbance of soil, allow establishment of weed species.

Threat	Description
Native species	
Problematic native plants	<ul style="list-style-type: none"> Increasing abundance, or area of occurrence, of some native plant species, including Scrambling Coral Fern (<i>Gleichenia microphylla</i>), may impact habitat condition. Suppression of Tall Astelia can especially be a problem along tracks and roadsides, where Myrtle Beech is impacted by Myrtle Wilt and where light becomes increasingly available, favouring the growth of other plant species.
Climate change	
Altered rainfall and temperature regimes	<ul style="list-style-type: none"> Climate change, increasing temperature and altered rainfall (both the drying of the sites and potential increased occurrence of flooding) are likely to magnify existing threats and may reduce the stability, extent, and condition of the wet forest habitat of Tall Astelia.
Extreme weather events	<ul style="list-style-type: none"> Climate change may increase the frequency and intensity of storms and flooding, increasing erosion and impacting habitat condition, and potentially causing mortality events. Increased storm events might impact canopy cover, contribute to loss of some Tall Astelia individuals, and depending on the amount of canopy lost, contribute to drying of habitat areas. Conversely, storms may benefit Tall Astelia, where loss of some canopy results in additional light needed to encourage flowering and reproduction.
Increased frequency and/or length of droughts	<ul style="list-style-type: none"> Drying and warming of the environment, including droughts, may lead to habitat changes, and impact recruitment and/or mortality rates.
Population dynamics	
Loss of genetic diversity	<ul style="list-style-type: none"> Small, greatly reduced, and/or isolated populations are at increased risk of loss of genetic diversity, which leads to a heightened risk of reduced recruitment and/or increased mortality rates. The long lifespan of Tall Astelia might exacerbate the effects of genetic drift and in-breeding. Isolated populations in the Otway Ranges, Egg Rock and Tomahawk areas are at higher risk.
Small population size	<ul style="list-style-type: none"> Small populations have lower resilience to the risk of stochastic events, and increased risk of genetic decline.

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 Tall Astelia's range and/or extent, by providing opportunities for natural movement.

- Increase knowledge of biology, ecology, distribution, demography, emerging threats, and conservation requirements.
- Support community participation and improve awareness of the Tall Astelia and conservation of its habitat.

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"> • Ensure that community distribution data and ecological information is available and considered in fire management activities. • Undertake biodiversity values check prior to fuel management in areas where the community occurs, to confirm treatment suitability and timing.
Collect and store reproductive material	<ul style="list-style-type: none"> • Undertake appropriate seed collection for long-term storage. Ensure that adequate supply and genetic diversity is secured for future reintroduction, and that essential information (such as dormancy) is known.
Community engagement and awareness	<ul style="list-style-type: none"> • Continue to identify, promote, and support opportunities for community involvement in conservation efforts. • Continue to raise landholder and broader community awareness of the importance of protecting habitat and managing threats.
Control introduced herbivores *	<ul style="list-style-type: none"> • Implement and maintain effective control of introduced herbivores in priority areas.
Control introduced plants *	<ul style="list-style-type: none"> • Implement and maintain effective control of introduced plants in priority areas and undertake revegetation with appropriate native species, where required.
Develop, update, and apply forestry protections	<ul style="list-style-type: none"> • Maintain prescriptions for the Tall Astelia under the <i>Code of Practice for Timber Production 2014 (as amended in 2022)</i> (the Code). • Where relevant, incorporate species-specific protection measures into plans and permits relating to timber harvesting operations in native forest on private land. • Apply the following additional permanent protection as recommended in the Victorian Government Threatened Species and Communities Risk Assessment (TSCRA): <ul style="list-style-type: none"> – <i>Forest zoning amendment</i> <p>Within the Central Highlands Regional Forest Agreement Region, the Secretary will establish Special Protection Zones to protect specific areas within the Tarago River catchment.</p>
Ecological fire regime *	<ul style="list-style-type: none"> • Implement fire management actions that promote an appropriate fire regime for Tall Astelia.
Genetic rescue	<ul style="list-style-type: none"> • Investigate options for improving resilience through enhancing genetic exchange via physically linking populations with enhanced habitat, translocation, or genetic management in an ex-situ setting.

Action	Description
Manage impacts from natural disaster events	<ul style="list-style-type: none"> Identify and implement recovery actions for vulnerable populations impacted by natural disaster events (e.g., significant bushfire or flood events).
Manage problematic native species	<ul style="list-style-type: none"> Implement and maintain appropriate control of problematic native species and manage habitat to minimise further impacts.
Manage public access	<ul style="list-style-type: none"> Manage public access to limit the risks of human disturbance.
Manage road and track works	<ul style="list-style-type: none"> Protect habitat from disturbances caused by road, track, bridge and ford construction and maintenance. Protect habitat from culvert works and works that alter the hydrology of adjacent populations.
Manage to provide an appropriate water regime	<ul style="list-style-type: none"> Manage to provide an appropriate flow regime that supports habitat and simulates natural flood cycles.
Minimise disease risk	<ul style="list-style-type: none"> Identify and manage the risks associated with pathogens and/or diseases, considering management options to limit exposure, infection, and impact of infection. Minimise damage to the crown or root system of Myrtle Beech to limit infection by the airborne and waterborne spores of Myrtle Wilt. Implement vehicle, tool, and footwear hygiene to minimise risk of <i>Phytophthora cinnamomi</i> introduction or spread.
Protect key habitat	<ul style="list-style-type: none"> Minimise alterations to hydrological regimes upstream or in surrounding landscapes. Protect all populations across its range, from Beenak-Upper Yarra region in south-central Victoria and in the Otway Ranges (south-western Victoria).
Research	<ul style="list-style-type: none"> Improve understanding of reproductive requirements and factors influencing recruitment success. Evaluate current reproductive status, seed bank status, longevity, fecundity & recruitment levels. Identify key stimuli for seed germination requirements. Determine why crowns rot following translocation due to <i>Pythium</i> infection. Determine the minimum viable population size to inform conservation objectives. Investigate habitat requirements of Tall Astelia to inform appropriate management actions. Investigate and determine a suitable fire regime that meets the Tall Astelia's ecological requirements and promotes its recovery.
Restoration and/or revegetation *	<ul style="list-style-type: none"> Undertake restoration and/or revegetation to increase habitat suitability and/or create new habitat areas. Apply ecological thinning approaches where necessary to ensure appropriate canopy gaps occur within Tall Astelia habitat to assist reproduction.

Action	Description
Survey and monitoring	<ul style="list-style-type: none"> Undertake targeted field surveys to confirm the extent of all known populations and seek to discover previously undetected populations based on predicted habitat and ecological information. Undertake surveys of known habitat including floristic and microclimate information. Monitor populations at known sites and other suitable locations to assess distribution, population trends and habitat condition. Monitor the impact of threats, including introduced herbivores, to inform management interventions.
Translocation	<ul style="list-style-type: none"> Design and implement a translocation program to meet the objectives of the action statement. Increase the range and extent of the Otway Ranges population by investigating translocations to other suitable sites, for example at Arkins Creek, Aire Crossing area, and Phillips Track near Triplet Falls.

**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"> A small (213 seeds) vouchered collection of Tall Astelia seeds, from the Central Highlands, has been stored at the National Herbarium of Victoria, Melbourne, as part of the Victorian Conservation Seedbank project.
Control introduced herbivores *	<ul style="list-style-type: none"> Deer control work has been undertaken at various locations, including within Bunyip State Park area and nearby Tall Astelia habitat to the north. Six projects, including one in the Otway's, are helping protect threatened species and restore landscapes across the state by managing the impact of feral pigs.
Develop, update, and apply forestry protections	<ul style="list-style-type: none"> The Tall Astelia has a current species-specific prescription in the Code: <ul style="list-style-type: none"> In the Central Highlands Forest Management Areas (FMAs): Apply a 100 m buffer around each Tall Astelia colony. Discovery of a previously unknown colony during harvesting operations will not necessarily cause harvesting to cease, but every reasonable effort will be made to protect it. Where Tall Astelia occurs within Cool Temperate Rainforest or Riparian Thicket EVCs, apply a 100 m buffer around the EVC. Buffer widths may be smaller in cases where existing roads or ridgelines occur within the 100 m. Upstream of Tall Astelia colonies, apply a minimum vegetated buffer of 40 m between the valley floor, or 'wetted zone' and adjacent logging coupes. Where there is no discernible valley floor extend the buffer zone 40 m from the creek itself. Apply a 40 m buffer around isolated plants growing on road batters. No roads or snig tracks may be constructed through Tall Astelia colonies. Avoid constructing roads or snig tracks through Tall Astelia buffers. Any roads or snig tracks that do cross Tall Astelia buffers must be located as far upstream from the Tall Astelia colony as possible, and sedimentation of the Tall Astelia colony must be prevented. Where Tall Astelia occurs on

Past action	Description
	<p>seepage zones immediately below a coupe, snig tracks must be designed to minimise alteration to the site's normal drainage patterns.</p> <ul style="list-style-type: none"> – In the Otways FMA: Apply a 100 m buffer around each Tall Astelia colony. Discovery of a previously unknown colony during harvesting operations will not necessarily cause harvesting to cease, but every reasonable effort will be made to protect it. • The risk of forestry operations was assessed for the Tall Astelia in 2020 under the Victorian Government TSCRA. Additional permanent protections were recommended in 2022 and are being implemented.
Translocation	<ul style="list-style-type: none"> • Translocation of individuals has occurred in the Otway Ranges rainforest to help mitigate the risk of bushfire. This included genetic analysis across the species range to understand the within- and between-site gene flow dynamics of Tall Astelia to inform its future translocation management.

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

- [Tall Astelia Species Forecast Report](#)
- [Threatened Species Assessment report – Tall Astelia \(*Astelia australiana*\)](#)
- [Commonwealth Species Profile and Threats database](#)
- [Threatened Species and Communities Risk Assessment](#)
- [Code of Practice for Timber Production 2014](#)
- [Victorian Deer Control Strategy](#)
- [Victoria's changing climate – understanding the impacts of climate change in Victoria](#)
- [Commonwealth Threat Abatement Plans](#)
- [Genetic Risk Index](#)
- [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 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 \(environment.vic.gov.au\)](https://environment.vic.gov.au/action-statements)

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 \(environment.vic.gov.au\)](https://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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