

Action statement

Flora & Fauna Guarantee Act 1988

Fat-tailed Dunnart (*Sminthopsis crassicaudata*)

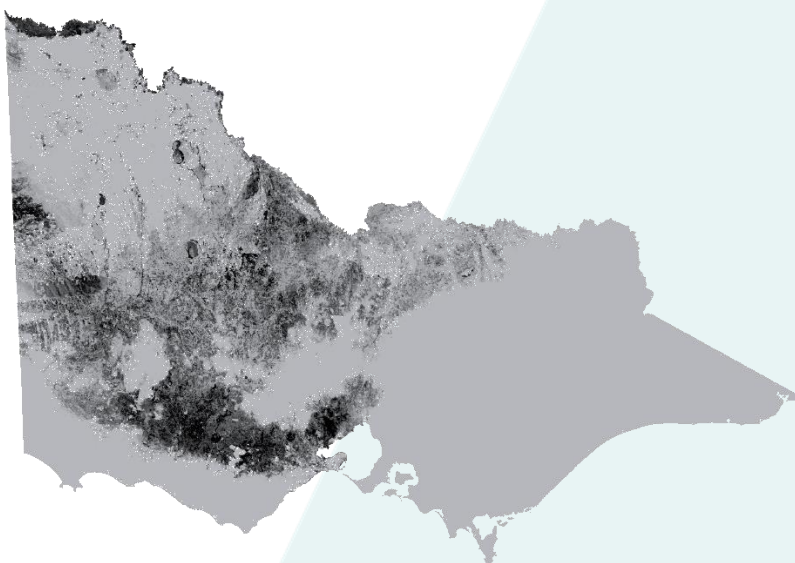
Taxon ID: 11072

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



Fat-tailed Dunnart. Image by Emily Scicluna.



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

Conservation Status

Vulnerable

Listing criteria: 5.1.1; 5.1.2(a), (b)(ii),(iii),(v) of the Flora and Fauna Guarantee Regulations 2020.

This means that:

- the Fat-tailed Dunnart has undergone, is suspected to have undergone, or is likely to undergo in the immediate future, a substantial reduction in population size; and
- its geographic distribution is 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.

Corresponding International Union for the Conservation of Nature (IUCN) criteria: A2ce; B2ab(ii,iii,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 [Fat-tailed Dunnart Species Forecast Report](#).

Threats

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

Threat	Description
Habitat loss, degradation or modification	
Excess biomass	<ul style="list-style-type: none"> The absence of disturbance such as appropriate fire regimes and/or grazing across both agricultural and grassland landscapes can result in accumulation of vegetation that changes the structure and composition of habitat, rendering it unsuitable for Fat-tailed Dunnarts.
Land use change	<ul style="list-style-type: none"> Land use change alters vegetation extent and condition. The shift from grazing to cropping may result in habitat changes that are likely to have irreversible impacts on the Fat-tailed Dunnart and other grassland species that have come to rely on grazing pastures. Urban development leads to loss and fragmentation of habitat.
Loss of key habitat features	<ul style="list-style-type: none"> Fat-tailed Dunnarts need inter-tussock spaces for movement, foraging and detection of potential predators, and are found most often where vegetation is sparse. They build their nests beneath shelter such as a rock or log/old fence post, which are at risk of removal. Loss of ecologically important habitat features such as rocks, soil cracks and inter-tussock spaces results in reduced habitat condition and/or extent, potentially impacting species persistence. Loss of invertebrate abundance and diversity leads to individual mortality and population decline. This loss can be attributed to pesticide use, invasive invertebrates, changes in the vegetation, and drought.
Reduced habitat connectivity	<ul style="list-style-type: none"> Loss of habitat connectivity reduces access to habitat and opportunity for genetic exchange between populations. Fat-tailed Dunnarts can persist in fragmented, agricultural grazing landscapes, however this is dependent on the availability of suitable shelter sites and habitat for foraging.
Vegetation clearing or damage	<ul style="list-style-type: none"> Native grassy ecosystems are subject to ongoing small and large losses as a result of land management activities associated with conversion of grazing to cropping, pasture de-rocking and use of agricultural chemicals. This cumulative impact can result in significant population decline.
Introduced species	
Introduced plants	<ul style="list-style-type: none"> Introduced plants change the structure and composition of native habitats, resulting in changes to habitat extent and/or condition, e.g., Chilean Needle-grass (<i>Nassella neesiana</i>), Serrated Tussock (<i>N. trichotoma</i>) and Canary Grass (<i>Phalaris aquatica</i>) occupy inter-tussock spaces preferred by Fat-tailed Dunnarts naturally maintained by native grasses.
Introduced predators	<ul style="list-style-type: none"> Predation by foxes (<i>Vulpes vulpes</i>) and feral cats (<i>Felis catus</i>) contributes to mortality of native species. Foxes and cats prey on Fat-tailed Dunnarts and compete for prey species.

Threat	Description
Introduced rodents	<ul style="list-style-type: none"> Both Brown Rats (<i>Rattus norvegicus</i>) and Black Rats (<i>Rattus rattus</i>) compete with and prey on Fat-tailed Dunnarts. The introduced House Mouse (<i>Mus musculus</i>) competes for food and nest sites, especially during mouse plagues.
Population dynamics	
Small population size	<ul style="list-style-type: none"> Small populations have lower resilience to the risk of stochastic events, and increased risk of loss of genetic diversity, which leads to a heightened risk of reduced recruitment and/or increased mortality rates.
Fire	
Altered fire regimes	<ul style="list-style-type: none"> Recent declines in roadside planned burns across on the Victorian Volcanic Plains (VVP) may lead to increased biomass, loss of inter-tussock spaces and population decline and alter vegetation structure and habitat quality.
Climate change	
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. Dunnart populations tend to crash following flooding and above average rainfall, this may be a consequence of a lack of refuge options across the landscape aligned with land use change.
Pathogens and disease	
Parasites	<ul style="list-style-type: none"> Toxoplasmosis (infection with the <i>Toxoplasma gondii</i> parasite) may impact susceptible individuals, impacting recruitment and/or mortality. Neosporosis (infection with <i>Neospora</i> spp. protozoal parasites) may impact susceptible individuals, impacting recruitment and/or mortality.
Human disturbance	
Incidental impacts from baiting/trapping	<ul style="list-style-type: none"> Native species may suffer incidental impacts from baiting and/or trapping programs. This has the potential to cause both injury and mortality of individuals. Fat-tailed Dunnarts dig and make nests under partly buried rocks and may access buried 1080 baits. While 1080 is used to target specific invasive predators, there is a possible risk to native carnivores. Dunnarts will also eat non-meat products (e.g., oats) and may thus be susceptible to rodent baiting programs on farmland.

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 and minimise future population decline.
- Increase the Fat-tailed Dunnart'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 Fat-tailed Dunnart and conservation of native grassland and grassy woodland 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
Biomass management	<ul style="list-style-type: none"> • Regularly undertake ecologically appropriate and culturally sensitive disturbance activities to maintain suitable habitat structure through reduction of the biomass of Kangaroo Grass (<i>Themeda triandra</i>) and other native and exotic grasses.
Community engagement and awareness	<ul style="list-style-type: none"> • Engage with Traditional Owner knowledge to understand historic distribution of Fat-tailed Dunnarts across Victoria and to identify potential sites for reintroductions. • Continue to raise landholder and broader community awareness of the importance of protecting habitat and managing threats. Work with local communities to maintain responsible pet ownership practices.
Control introduced plants*	<ul style="list-style-type: none"> • Implement and maintain effective control of introduced plants in priority areas to maintain suitable habitat structure.
Control introduced predators*	<ul style="list-style-type: none"> • Implement and maintain effective control of feral cats, foxes and introduced rodents in priority areas.
Ex situ management	<ul style="list-style-type: none"> • Investigate the need for ex situ management and translocation of Victorian populations to support long-term persistence.
Install structural habitat	<ul style="list-style-type: none"> • In key locations, install structural habitat attributes (e.g., rocks, artificial shelters such as tiles; fallen timber) as appropriate.
Permanent protection *	<ul style="list-style-type: none"> • Investigate incentives, voluntary agreements, covenants, and other permanent protection measures to protect and restore habitat in key locations.
Protect key habitat	<ul style="list-style-type: none"> • Ensure that species distribution data and ecological information is available and considered in planning for developments, land use changes and utilities maintenance. Ensure that incremental losses of habitat are considered when understanding the impact of potential losses. • Identify opportunities to manage threats of land use change and development, including programs to encourage protection and management of remaining habitat areas, and to increase habitat heterogeneity and connectivity.
Research	<ul style="list-style-type: none"> • Increase understanding of genetic risks and management options. Determine genetic diversity, population connectivity and degree of isolation. • Investigate options for improving resilience through enhancing genetic exchange. Options may include physically linking populations with enhanced habitat, translocation, or genetic management in an ex-situ setting. • Investigate the impacts of disease and identify potential management actions. • Undertake genetic studies to determine levels of genetic variation between the Victorian/south-east South Australian populations (south of the Murray River) and the populations north of the Murray River.

Action	Description
Survey and monitoring	<ul style="list-style-type: none"> Undertake targeted field surveys to confirm the range and extent of the species in Victoria and seek to discover previously undetected populations, based on predicted habitat and ecological information. Improve knowledge on detection probability and detection techniques through this survey effort. Monitor populations at known sites and other suitable locations to collect long term population data, assess distribution, population trends and habitat condition.

**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
Biomass management	<ul style="list-style-type: none"> Ecological grazing to maintain suitable habitat structure has been applied across public and private land on the Patho and Avoca Plains.
Community engagement and awareness	<ul style="list-style-type: none"> Community members have been involved in grassland fauna surveys north of the Great Dividing Range. Education and awareness raising of Fat-tailed Dunnarts and other grassland fauna has been undertaken at local schools and landholder forums.
Control introduced predators	<ul style="list-style-type: none"> Fox control is undertaken as part of general biodiversity management in some habitat areas, principally on public land.
Ex situ management	<ul style="list-style-type: none"> DEECA and Parks Victoria refurbished captive breeding pens at Serendip Sanctuary to house mammals as small as Fat-tailed Dunnarts. This critical infrastructure is available to be used for captive breeding or translocation projects in future. A long-term captive breeding program with animals from populations south of the Murray River, has been held at La Trobe University, with completed research including mate choice, behaviour, cognition, morphology, and a trial reintroduction to their former range. Captive animals are currently held by the University of Melbourne (research) and Zoos Victoria (display and awareness raising).
Install structural habitat	<ul style="list-style-type: none"> Artificial shelter/nesting sites (tiles, log piles) have been provided at Terrick Terrick National Park (TTNP).
Permanent protection	<ul style="list-style-type: none"> Approximately 1000 ha of grassland habitat has been placed under covenant in priority locations on the Northern Plains and VVP. Trust for Nature has acquired nearly 3000 ha of grassland and woodland on the lower Avoca Plains near Bael.
Protect key habitat	<ul style="list-style-type: none"> The VVP linear reserves project ran began in 2014 and maintained and enhanced grassy ecosystems through burning and weed control. This contributed to persistence of the Fat-tailed Dunnart on key road reserves.
Survey and monitoring	<ul style="list-style-type: none"> Since 2019, surveys at >40 Victorian sites with historical records of Fat-tailed Dunnarts, have failed to find individuals and uncovered few at occupied sites. Monitoring of Fat-tailed Dunnarts and their habitat structure has been undertaken at TTNP since 2010, and at Bael Nature Conservation Reserve since 2016.
Translocation	<ul style="list-style-type: none"> A 2020 reintroduction of 180 Fat-tailed Dunnarts into the La Trobe Wildlife Sanctuary saw a small number of animals survive for over 12 months post-

Past action	Description
	release, with offspring observed in 2022. However, this translocation was ultimately deemed unsuccessful due to high predation rates from black rats, and added pressure from fox and cat incursions after the sanctuary's predator-proof fence was compromised.

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

- [Fat-tailed Dunnart Species Forecast Report](#)
- [Final Recommendation Report – Fat-tailed Dunnart \(*Sminthopsis crassicaudata*\)](#)
- [Commonwealth Species Profile and Threats database](#)
- [Victoria's changing climate – understanding the impacts of climate change on Victoria](#)
- [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 \(environment.vic.gov.au\)](http://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.



© The State of Victoria Department of Energy, Environment and Climate Action August 2023



This work is licensed under a Creative Commons Attribution 4.0 International licence. You are free to re-use the work under that licence, on the condition that you credit the State of Victoria as author. The licence does not apply to any images, photographs or branding, including the Victorian Coat of Arms, the Victorian Government logo and the Department of Energy, Environment and Climate Action (DEECA) logo. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>

ISSN 1448-9902 (online)

Disclaimer

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

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

