# **Action statement**

Flora & Fauna Guarantee Act 1988

# Southern Brown Bandicoot (Isoodon obesulus obesulus)

#### Taxon ID: 61092

Southern 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**



Southern Brown Bandicoot. Image by Peter Menkhorst.



This habitat distribution model displays the indicative range of the Southern Brown Bandicoot based on occurrence records and likely habitat. See <u>NatureKit</u> for an interactive map. The Southern Brown Bandicoot also occurs outside of Victoria.

# **Conservation Status**

#### Endangered

Listing criteria: 4.1.1 of the Flora and Fauna Guarantee Regulations 2020.

This means that:

• The Southern Brown Bandicoot has undergone, is suspected to have undergone, or is likely to undergo in the immediate future, a severe reduction in population size.

## Corresponding International Union for the Conservation of Nature (IUCN) criteria: A2ace.

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 <u>Southern Brown</u> <u>Bandicoot Conservation Advice.</u>

# **Threats**

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

Threat	Description
Introduced Species	
Domestic pets	Roaming domestic pets (cats and dogs) may cause disturbance and mortality.
Feral pigs	• Feral pigs ( <i>Sus scrofa</i> ) change vegetation structure and facilitate the incursion of introduced plants and animals into the habitat of the Southern Brown Bandicoot. They can also compete for food resources used by Southern Brown Bandicoot.
Introduced herbivores	<ul> <li>Introduced herbivores such as rabbits (<i>Oryctolagus cuniculus</i>) and deer degrade habitat through herbivory, trampling, pugging of wet soils, increasing nutrient loads, erosion of waterway edges, and increasing the accessibility of habitat to introduced predators and introduced plants, and can also potentially limit food availability.</li> </ul>
Introduced plants	<ul> <li>Introduced plants can change the structure and composition of native habitats, resulting in changes to habitat extent and/or condition, including potential impacts to food resource availability.</li> </ul>
	<ul> <li>Introduced plant species of concern in Southern Brown Bandicoot habitat include transformer woody weeds such as Radiata Pine (<i>Pinus radiata</i>), Coast Wattle (<i>Acacia longifolia</i> subsp. <i>sophorae</i>), Sweet Pittosporum (<i>Pittosporum undulatum</i>) and Karamu (<i>Coprosma robusta</i>), which can overwhelm understory vegetation leading to simplification of floristics and loss of structure.</li> </ul>
Introduced predators	• Predation by foxes ( <i>Vulpes vulpes</i> ), and feral cats ( <i>Felis catus</i> ) contributes to mortality of native species and is likely the most serious threat to Southern Brown Bandicoot. Foxes have contributed to the decline and local extinction of Southern Brown Bandicoots across Victoria.
	<ul> <li>Cats prey upon Southern Brown Bandicoots, particularly juveniles, and spread disease. The parasitic disease, Toxoplasmosis, is carried and transmitted by cats and can be transmitted to bandicoots.</li> </ul>
Introduced rodents	<ul> <li>Introduced rat species can compete for food resources and cause direct mortality of Southern Brown Bandicoot through predation, particularly of juveniles. The prevalence of rodent impacts on Southern Brown Bandicoots is not well understood.</li> </ul>
Habitat loss, degradatio	n or modification
Barriers to movement	<ul> <li>Physical barriers to movement reduce access to habitat and opportunity for genetic exchange between populations.</li> </ul>
	• Land clearance, roads and urbanization can create barriers to Southern Brown Bandicoot movement and cause fragmentation of populations. Bandicoot movement has been highly constrained in some areas as a result of past land use changes.
Forestry operations	• 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.

Threat	Description
Vegetation clearing or damage	<ul> <li>Removal or damage to vegetation can cause loss of habitat and/or loss of key habitat features and lead to population fragmentation or decline and potential local population loss. Both native and/or introduced vegetation can provide important habitat for Southern Brown Bandicoot, including within smaller habitat patches such as narrow linear habitat along drainage channels, roads, shelter belts and railway lines.</li> </ul>
	<ul> <li>Southern Brown Bandicoot habitat is subject to ongoing small- and large-scale losses because of vegetation clearing or damage associated with land use change, construction, development and/or infrastructure including for agriculture, urbanisation, road construction and mining activities.</li> </ul>
Human disturbance	
Construction, development and/or infrastructure	<ul> <li>Construction and development may result in direct removal of habitat, or indirect impacts to habitat through changes to water regime, increased risk of weed incursion, and increased access to native habitats by introduced predators and domestic pets.</li> </ul>
Road and track construction or maintenance	<ul> <li>Roadside populations are vulnerable to loss or damage to individuals and habitat, as a result 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.</li> </ul>
	<ul> <li>Road and track networks can assist predator movement, create barriers to or influence bandicoot movement, fragment habitat, as well as cause direct mortality of Southern Brown Bandicoot via collisions with vehicles.</li> </ul>
Climate change	
Altered rainfall and temperature regimes	<ul> <li>Drying and warming of the environment, including droughts, may lead to habitat changes, and impact resource availability, recruitment and/or mortality rates.</li> </ul>
	<ul> <li>Climate change is likely to magnify existing threats and may reduce the stability, extent, and condition of habitat.</li> </ul>
	<ul> <li>Combined impacts of drought and fox predation significantly elevate the likelihood of local extinction.</li> </ul>
Extreme weather events	<ul> <li>Climate change may increase the frequency and intensity of storms and flooding, increasing erosion and impacting habitat condition, and potentially causing mortality events.</li> </ul>
Sea-level rise	Sea-level rise will lead to habitat alteration, shifting and/or loss.
	<ul> <li>Sea level rise is expected to lead to loss of Southern Brown Bandicoot habitat and impact habitat connectivity.</li> </ul>
Populations dynamics	
Loss of genetic diversity	• 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, as well as inbreeding depression. Low genetic diversity exposes populations to reduced adaptive potential to environmental changes, such as climate change.

Threat	Description
Population fragmentation	<ul> <li>Fragmentation of once connected populations into smaller, isolated populations increases the risk of genetic decline and associated changes to recruitment and/or mortality rates.</li> </ul>
Small population size	<ul> <li>Small populations have lower resilience to stochastic events and increased risk of genetic decline.</li> </ul>
	<ul> <li>Population sizes can fluctuate across the landscape in response to varying ecological conditions, however this is currently poorly understood.</li> </ul>
Fire	
Altered fire regimes	<ul> <li>Fires including planned burns that are too frequent or intense have the potential to cause direct mortality and reduce habitat extent and/or condition by opening of understorey vegetation that the animal uses for nesting and protection from predators, as well as affecting food availability.</li> </ul>
	• However, lack of fire can also negatively impact the species as the heathland and heathy woodland habitats of the Southern Brown Bandicoot require fire intervals of 10-20 years to maintain a healthy diversity of flora and abundance and diversity of food sources for the species. Further research is needed to understand how Southern Brown Bandicoots use different habitat types with different fire histories.
	<ul> <li>A hotter, drier climate may increase the likelihood, frequency, extent and/or intensity of fire and its impact on Southern Brown Bandicoot habitat and could lead to loss of refugia and local extinctions.</li> </ul>
Fire management activities	<ul> <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>
Human disturbance	
Incidental impacts from baiting/trapping	<ul> <li>Native species may suffer incidental impacts from baiting and/or trapping programs for introduced predators. In some circumstances, this has the potential to cause both injury and mortality of individuals.</li> <li>The non-target impact of traps set for introduced species, such as introduced</li> </ul>
	rodents and feral cats, are a potential threat to Southern Brown Bandicoots.
Recreational activities	<ul> <li>Recreational activities such as dog walking, horse-riding, trail bike riding, mountain biking and camping on public land, may damage habitat, increase risk of pathogen spread, and alter the behaviour of native species, including the Southern Brown Bandicoot, potentially impacting recruitment, and mortality rates, and/or persistence at a site.</li> </ul>
Pathogens and disease	
Phytophthora cinnamomi	<ul> <li>Infection by <i>Phytophthora cinnamomi</i> leads to plant mortality, reduced fitness, reduced recruitment/reproduction, and local population declines of many plant species. <i>Phytopthora cinnamomi</i> may contribute to loss of structural habitat and impact food sources for Southern Brown Bandicoot. Construction and maintenance of roads is a risk for spreading <i>Phytophthora cinnamomi</i>.</li> </ul>

Toxoplasmosis	•	Toxoplasmosis (infection with the Toxoplasma gondii parasite) is spread by cats and can infect bandicoot species, in some cases causing illness and mortality. How this disease may affect the Southern Brown Bandicoot populations is unknown and requires further investigation.
Native species		
Over-abundant native mammals	•	Competition for resources with other native mammals can impact habitat, recruitment and/or mortality rates. This threat is exacerbated where native species become over-abundant, however, the extent of this impact is not well known.

## **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 Southern Brown Bandicoot range and/or extent, by providing opportunities for natural movement.
- Establish at least four 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 Southern Brown Bandicoot 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 <u>NatureKit</u>.

Action	Description	
Apply decision support tools for population management	<ul> <li>Apply relevant decision support tools (e.g., Population Viability Analysis, Specific Needs Assessment) to inform population and threat management decisions.</li> </ul>	
	• Develop and maintain a genetic database to identify genetic diversity and risks to populations and inform genetic management.	
Avoid and/or mitigate impacts associated with fire management	Ensure that distribution data and ecological information is available and considered in fire management activities.	
	<ul> <li>Undertake biodiversity values check prior to fuel management in areas of the species habitat, to confirm treatment suitability and timing.</li> </ul>	
Community engagement and awareness	<ul> <li>Continue to raise landholder and broader community awareness of the importance of protecting habitat, managing threats, and supporting habitat connectivity, especially on private land.</li> </ul>	

Action	Description
	<ul> <li>Work with key stakeholders to reduce threats and encourage behaviours that support a healthy environment, including encouraging strategic landscape-level fox control across all land tenures.</li> </ul>
	<ul> <li>Promote community awareness of the Southern Brown Bandicoot, its ecological benefits, and conservation of its habitat.</li> </ul>
	<ul> <li>Install signs to inform the community of the presence and importance of the Southern Brown Bandicoot.</li> </ul>
	<ul> <li>Promote responsible cat and dog ownership in locations where the Southern Brown Bandicoot is present.</li> </ul>
Conservation management planning	<ul> <li>Review and update, or develop, and implement relevant plans or planning tools to support conservation management for Southern Brown Bandicoot including identifying key habitat areas and priority areas for improving habitat connectivity.</li> </ul>
	<ul> <li>Consider future climate change impacts, including sea-level rises and extreme flooding events, on Southern Brown Bandicoot in planning for improvements to habitat connectivity.</li> </ul>
Control feral pigs *	<ul> <li>Implement and maintain effective control of feral pigs in priority areas across tenure.</li> </ul>
Control introduced herbivores *	<ul> <li>Implement and maintain effective control of introduced herbivores including rabbits and deer in priority areas across tenure.</li> </ul>
Control introduced plants *	<ul> <li>Implement and maintain effective control of introduced plants, especially transformer woody weeds, where they are demonstrated to be having a detrimental impact on Southern Brown Bandicoot population viability.</li> </ul>
	<ul> <li>Control of introduced plants may require a staged process to ensure Southern Brown Bandicoot habitat cover and connectivity is maintained throughout the control program.</li> </ul>
Control introduced predators *	<ul> <li>Implement and maintain effective control of foxes in priority areas across land tenures. This includes landscape scale fox control, as well as fox control immediately following fire where possible.</li> </ul>
	<ul> <li>Implement and maintain effective control of feral cats in priority areas using methods that will not adversely affect Southern Brown Bandicoot.</li> </ul>
	Consider the use of predator-proof enclosures if required.
Control introduced rodents	<ul> <li>Implement and maintain effective control of introduced rodents in priority areas using methods that will not adversely affect Southern Brown Bandicoot.</li> </ul>
Develop, update and apply forestry protections	• Maintain prescriptions for the Southern Brown Bandicoot 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.
	<ul> <li>Incorporate measures to protect relevant environmental values into timber harvesting plans for plantations.</li> </ul>
Ecological fire regime *	<ul> <li>Implement fire management actions that promote an appropriate fire regime for the species.</li> </ul>

Action	Description
Ex-situ management	<ul> <li>Establish and maintain ex-situ populations in suitable secure sites to service the conservation objectives of the Southern Brown Bandicoot if required, including for the purposes of reintroduction into suitable habitat.</li> </ul>
Genetic rescue	<ul> <li>Investigate options for improving resilience through enhancing genetic exchange via physically linking populations, translocation, or genetic management in an ex-situ setting.</li> </ul>
Identify and protect refuges	<ul> <li>Identify and protect habitat areas that provide important refugia from disturbance events (e.g., fire) or significant weather events (e.g., drought), as well as predators.</li> </ul>
Improve habitat connectivity	<ul> <li>Restore habitat and/or provide appropriate engineering solutions to improve connectivity between habitat patches, including where there is remaining privately-owned habitat neighbouring nature conservation reserves which can provide complementary refugia from fire.</li> </ul>
	<ul> <li>Improve habitat connectivity in peri urban and urban landscapes where habitat connectivity is limited, and dispersal is constrained.</li> </ul>
Install structural habitat	<ul> <li>Install structural habitat attributes where degradation or disturbance (e.g., as a result of fire or vegetation removal) have removed key habitat features, where required.</li> </ul>
Manage barriers to movement	<ul> <li>Consider the Southern Brown Bandicoot's needs and distribution in decision making around the establishment of new potential barriers to movement including roads and urban development.</li> </ul>
	<ul> <li>Consider opportunities to overcome the impacts of existing barriers to movement including opportunities to restore connectivity under or across roads or through habitat restoration in landscapes where habitat is fragmented.</li> </ul>
Manage public access	<ul> <li>Consider managing public access in key habitat areas for Sothern Brown Bandicoot to limit the risks of human disturbance from recreational activities.</li> </ul>
Manage road and track works	<ul> <li>Protect habitat from disturbances caused by road, track, bridge and ford construction and maintenance,</li> </ul>
Mitigate the risks posed by pathogens and disease	<ul> <li>Identify and manage the risks associated with pathogens and/or diseases, including toxoplasmosis, considering management options to limit exposure, infection, and impact of infection.</li> </ul>
Permanent protection *	<ul> <li>Investigate incentives, voluntary agreements, covenants and other permanent protection measures to protect and restore habitat.</li> </ul>
Protect key habitat	<ul> <li>Identify opportunities to manage threats of land use change and development, including programs to encourage protection and management of remaining habitat areas.</li> </ul>
	<ul> <li>Protect and actively manage important habitat including in reserves, on roadsides, along drainage lines and on private land.</li> </ul>
	Secure habitat, including habitat corridors, in peri-urban landscapes.
Research	<ul> <li>Increase understanding of genetic risks and management options, including the level of genetic diversity in small or isolated populations, or those populations in open-range ex-situ situations.</li> </ul>

Action	Description
Action	Description
	<ul> <li>Investigate and determine a suitable fire regime that meets the Southern Brown Bandicoot's ecological requirements and promotes its recovery.</li> </ul>
	<ul> <li>Improve understanding of population dynamics (e.g., sex ratios, recruitment, causes of mortality) to inform management priorities.</li> </ul>
	<ul> <li>Improve understanding of the Southern Brown Bandicoot's movements and/or dispersal and habitat requirements, including minimum habitat thresholds, and how the species occupies the landscape through time.</li> </ul>
	<ul> <li>Investigate the impacts of known threats and potential management actions, including the potential impacts of overabundant native herbivores.</li> </ul>
	<ul> <li>Investigate Southern Brown Bandicoot's ecological requirements that are relevant to population persistence. In particular, understanding the thresholds of threat pressure that allows population persistence at a self-sustaining level at key points in time (e.g., during drought or periods of high predator numbers).</li> </ul>
	<ul> <li>Improve understanding of how to translocate individuals into an established population.</li> </ul>
	<ul> <li>Improve understanding of the ecological role the Southern Brown Bandicoot plays within the ecosystem and how this can promote the species' conservation.</li> </ul>
	<ul> <li>Improve understanding of the relationship between the Southern Brown Bandicoot's activity patterns and predator avoidance behaviour, habitat cover, and the predation pressure exerted by foxes, cats and rats, to improve introduced vertebrate control programs.</li> </ul>
	<ul> <li>Improve understanding of the threshold of predator control, and effectiveness of different predator control methods, which will permit a self-sustaining population under different environmental conditions.</li> </ul>
	<ul> <li>Investigate the success of artificial bandicoot refuges, including thermal suitability and use over time.</li> </ul>
	<ul> <li>Investigate the use of drones using thermal imagery and high-resolution cameras to undertake population monitoring.</li> </ul>
	<ul> <li>Investigate use of plantations by Southern Brown Bandicoot and effects of plantation operations on the species and its habitat.</li> </ul>
Restoration and/or revegetation *	<ul> <li>Undertake habitat restoration and/or revegetation to increase habitat suitability, create new habitat areas and help facilitate movement.</li> </ul>
	<ul> <li>Consider the expected impacts of climate change when identifying priority areas, and plant species, for restoration and/or revegetation projects.</li> </ul>
Survey and monitoring	<ul> <li>Monitor populations at known sites and other suitable locations to assess distribution, population trends and habitat condition, and to identify critical population and inform management needs.</li> </ul>
	Monitor the impact of threats to inform management interventions.
	<ul> <li>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.</li> </ul>
	Monitor for evidence of disease, particularly toxoplasmosis.
Translocation	<ul> <li>Design and implement translocation programs to meet the objectives of the action statement, if required.</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
Community engagement and awareness	<ul> <li>Engagement of local residents and development of materials, activities and management guidelines for Southern Brown Bandicoot conservation undertaken as part of the Southern Brown Bandicoot Outreach Program led by the Royal Botanic Gardens Cranbourne.</li> </ul>
	<ul> <li>Community and stakeholder education and knowledge sharing on Southern Brown Bandicoot facilitated through Landcare groups and community organisations.</li> </ul>
	<ul> <li>Promoting custodianship of Southern Brown Bandicoot to primary producers by Basalt to Bay Landcare Network.</li> </ul>
	Cardinia Shire Council and Casey Shire Council 'Gardens for Wildlife Program' advocates for Southern Brown Bandicoot Habitat.
Conservation and management planning	<ul> <li>A Population Viability Analysis model has been developed for the Southern Brown Bandicoot to help prioritise management options and research.</li> </ul>
	<ul> <li>A state-wide genetic rescue strategy to improve the genetic fitness of Southern Brown Bandicoot populations is being developed to help address the problems associated with the fragmented distribution of Victoria's populations.</li> </ul>
	<ul> <li>'Guidelines for best-practice management of modified habitats for Southern Brown Bandicoots' published in 2019 to assist land managers in protecting and enhancing Southern Brown Bandicoot populations, particularly when they occur in modified and/or linear habitats.</li> </ul>
	<ul> <li>Southern Brown Bandicoot Sub-Regional Species Strategy developed in 2014 under the Melbourne Strategic Assessment.</li> </ul>
	<ul> <li>Ten-year Implementation Plan for the Southern Brown Bandicoot Sub-Regional Species Strategy developed in 2016 under the Melbourne Strategic Assessment.</li> </ul>
	<ul> <li>Threatened Species Plan developed for Phillip Island which includes a proposal to reintroduce the Southern Brown Bandicoot to the fox-free island.</li> </ul>
	<ul> <li>Development of a shire wide Biolink corridor plan within the Cardinia Shire Council area that defines key Southern Brown Bandicoot habitats in the landscape.</li> </ul>
	<ul> <li>Development of Frankston City Council Biodiversity Action Plan 2021-2036.</li> </ul>
	<ul> <li>Major review undertaken of Southern Brown Bandicoot habitat under Distinctive Areas and Landscapes for the Bass Coast Western Port Woodlands.</li> </ul>
	<ul> <li>The Southern Brown Bandicoot Protection Program was established as an offset for the Peninsula Link.</li> </ul>
	<ul> <li>A Southern Brown Bandicoot translocation strategy developed for West Gippsland and implemented into offset sites.</li> </ul>
Control introduced predators	<ul> <li>Fox control and management has continued over the past decade as part of the Southern Ark and Glenelg Ark programs.</li> </ul>
	<ul> <li>Maintenance of predator-proof fencing and ongoing predator control undertaken at the Royal Botanic Gardens Cranbourne.</li> </ul>
	Predator proof fencing maintained at Mount Rothwell.

Past action	Description
	Ongoing fortnightly fox baiting undertaken in the Grampians National Park.
	<ul> <li>Fox control undertaken over past decade at St Helens on plantation, agricultural and reserve land.</li> </ul>
	<ul> <li>Fox and cat control undertaken since 2014 at Wonthaggi Heathlands and Adams Creek Nature Conservation Reserve as part of the 10-year funded Southern Brown Bandicoot Protection Program.</li> </ul>
	<ul> <li>Trapping and baiting undertaken for foxes in high-value conservation areas over the past decade.</li> </ul>
	<ul> <li>Canid Pest Ejectors trialled as part of the Southern Brown Bandicoot Protection Program offset for the Peninsula Link (now discontinued).</li> </ul>
Develop, update, and apply forestry	<ul> <li>The Southern Brown Bandicoot has a current species-specific prescription in the Code:</li> </ul>
protections	<ul> <li>In the Portland-Horsham Forest Management Area: Protect gully lines and patches of dense vegetation in areas where this species is known to occur and that are currently not protected through Special Protection Zones or Special Management Zones.</li> </ul>
	• The risk of forestry operations was assessed for the Southern Brown Bandicoot in 2020 under the Victorian Government Threatened Species and Communities Risk Assessment. Additional permanent protections were not found to be required.
Install structural habitat	<ul> <li>Creation and deployment of "Bandicoot Motels" (artificial refuges) at St Helens Flora Reserve and habitats on adjoining farmland and nearby road reserve.</li> </ul>
Manage barriers to movement	<ul> <li>Successful development of trial Southern Brown Bandicoot culverts under roadways in Koo Wee Rup, City of Casey, and Royal Botanic Gardens Cranbourne.</li> </ul>
Research	<ul> <li>Research undertaken into disease risk and detection, especially Toxoplasmosis, around Cranbourne to Koo Wee Rup area.</li> </ul>
	<ul> <li>Collection of genetic information undertaken for the Bushfire Biodiversity Response and Recovery Program.</li> </ul>
	<ul> <li>Research undertaken into the ecology of the Southern Brown Bandicoot in peri- urban Melbourne, including population ecology and demographics, movement, diet and response to habitat disturbance within narrow linear strips of habitat along roads, drains and railway lines and use of novel habitat.</li> </ul>
	<ul> <li>Project currently undertaken to identify Victorian Southern Brown Bandicoot populations suffering from loss of genetic diversity. This project will also create genetically mixed safe haven populations which will be introduced into at-risk wild populations to restore genetic diversity.</li> </ul>
Restoration and/or	Site-scale revegetation of Southern Brown Bandicoot habitat.
revegetation	<ul> <li>Establishment of vegetation offset sites which provide habitat for the Southern Brown Bandicoot.</li> </ul>
	Creation of new public open space reserves in south-east Melbourne.
	Habitat replanting for south central meta-populations.

Past action	Description
	<ul> <li>Currently establishing habitat connectivity corridors that link the Royal Botanic Gardens Cranbourne population to suitable habitat outside of the Urban Growth Boundary.</li> </ul>
	Revegetation and habitat restoration works undertaken on land adjoining St Helens Flora Reserve in 2021.
Survey and monitoring	• A large landscape-scale camera monitoring program targeting critical weight range mammals and predator species is being implemented at over 700 sites within East Gippsland with deployments in 2016-17, 2021, and 2022. Targeted Southern Brown Bandicoot monitoring was undertaken at 60 sites within the Mueller-Wingan area.
	<ul> <li>Ongoing monitoring of Southern Brown Bandicoot population at Royal Botanic Gardens Cranbourne.</li> </ul>
	<ul> <li>First of 5-yearly camera trapping surveys undertaken in Southern Brown Bandicoot Management Area as part of the Melbourne Strategic Assessment program published.</li> </ul>
	<ul> <li>Monitoring for Southern Brown Bandicoots at The Pines Flora and Fauna Reserve in 2019-2020 and 2021-2022.</li> </ul>
	<ul> <li>Annual camera monitoring for Southern Brown Bandicoots and foxes in the Wonthaggi Heathlands and Adams Creek Nature Conservation Reserve from 2014-2021 as part of the ten-year Southern Brown Bandicoot Protection Program.</li> </ul>
	<ul> <li>A Terrestrial and Freshwater Biodiversity Impact Assessment was undertaken, inclusive of a targeted survey for Southern Brown Bandicoot, during the Golden Beach Gas Project, Gippsland Lakes, in 2019-2020.</li> </ul>
	<ul> <li>On-going broad-scale camera trapping survey undertaken in south central region since 2012 to monitor Southern Brown Bandicoot, predators, competitors and associated ground fauna.</li> </ul>
	<ul> <li>Landscape scale camera monitoring across 90,000Ha in south-west Victoria through the Glenelg Ark Project, with 240 cameras deployed annually since 2012 at six sites. Three sites baited for foxes and three not baited (control sites).</li> </ul>
	<ul> <li>Camera trap monitoring in Bass Coast 2014-2022 through Southern Brown Bandicoot Environment Protection and Biodiversity Conservation Act Offset.</li> </ul>
	<ul> <li>Ongoing remote camera monitoring undertaken at St Helens Flora Reserve and adjoining land since 2012.</li> </ul>
Translocation	<ul> <li>Potential sites for new populations within the Southern Brown Bandicoot's historical range have been identified, including The Pines Flora and Fauna Reserve, sites in the Mornington Peninsula region (e.g., The Briars, Tootgarook Swamp, Greens Bush), and potentially Phillip and French Islands.</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**

- Southern Brown Bandicoot Species Forecast Report
- Southern Brown Bandicoot Conservation Advice
- <u>Code of Practice for Timber Production 2014</u>
- <u>Threatened Species and Communities Risk Assessment</u>
- <u>Commonwealth Species Profile and Threats database</u>
- Victoria's changing climate understanding the impacts of climate change in Victoria
- <u>Commonwealth Threat Abatement Plans</u>
- Genetic Risk Index
- Flora and Fauna Guarantee Regulations 2020
- <u>IUCN Red List criteria descriptions</u>

## **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: <u>Action</u> <u>statements (environment.vic.gov.au)</u>

To identify the relevant Traditional Owners, use the <u>Aboriginal Cultural Heritage Register and Information System</u> (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 <u>threatened.species@deeca.vic.gov.au</u>

# **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 <u>Protecting Victoria's Environment –</u> <u>Biodiversity 2037</u>.
- 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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