

Action statement

Flora & Fauna Guarantee Act 1988

Powerful Owl (*Ninox strenua*)

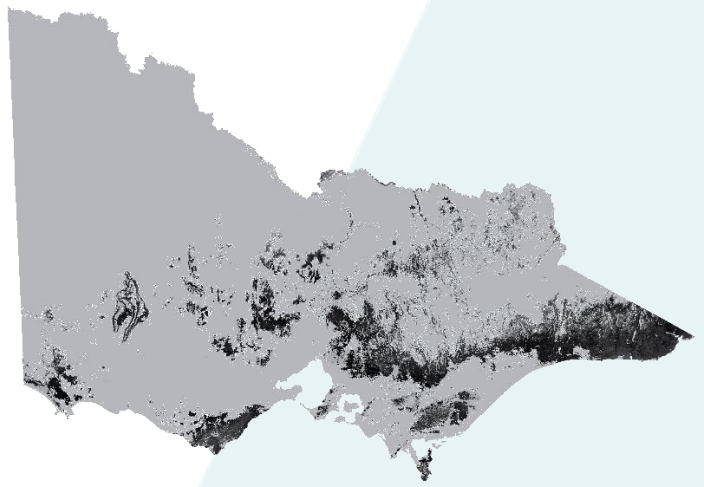
Taxon ID: 10248

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



Powerful Owl. Image by Dan Pendavingh.



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

Conservation Status

Vulnerable

Listing criteria: 5.1.3(b)(ii) of the Flora and Fauna Guarantee Regulations 2020.

This means that:

- The total number of Powerful Owl mature individuals is moderately low, the number is likely to continue to decline and most of the individuals are in one subpopulation.

Corresponding International Union for the Conservation of Nature (IUCN) criteria: C2a(ii).

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 [Powerful Owl Species Forecast Report](#).

Threats

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

Threat	Description
Climate change	
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 reduce prey availability, leading to elevated mortality rates and a reduction in breeding success.
Fire	
Altered fire regimes	<ul style="list-style-type: none"> A hotter, drier climate may increase the likelihood or frequency of fire impacting habitat (including hollow availability), with the potential to reduce habitat extent and/or condition. Fire management operations such as creation of fuel breaks (soil disturbance, slashing) may remove habitat and cause mortality of individuals. Fire may reduce the availability of hollows for roosting and nesting through hazardous tree removal or the direct impacts of fire. Fire may also reduce abundance of ground dwelling prey and mid-storey prey. Impacts depend on size and scale of fire. Nests within dry forest types are vulnerable to intense fire.
Bushfire	<ul style="list-style-type: none"> Bushfires can result in habitat degradation, mortality and reduce availability of hollow-bearing trees and food sources.
Fire management activities	<ul style="list-style-type: none"> Fire management operations such as creation of fuel breaks (soil disturbance, slashing) may remove habitat.
Habitat loss, degradation or modification	
Forestry operations	<ul style="list-style-type: none"> Timber harvesting operations in native forest may remove hollow-bearing trees, exacerbating the rate of decline of this key habitat feature. Timber harvesting operations in native forest may also impact mid-storey vegetation which supports prey.
Land use change	<ul style="list-style-type: none"> Expansion of urban development is contributing to habitat loss in some areas. The expansion of urban development into forested areas reduces the extent and quality of habitat and increases the risk of human disturbance to Powerful Owls and exposure to prey containing anticoagulant rodenticides.
Vegetation clearing or damage	<ul style="list-style-type: none"> Removal or damage to native vegetation results in a more fragmented landscape, with limited large hollow-bearing trees for nesting, reduced prey availability, fewer protected diurnal roosting sites and a loss of a breeding pair if critical breeding habitat is removed.
Human disturbance	
Recreational activities	<ul style="list-style-type: none"> Eager community members wishing to see the Powerful Owl may inadvertently damage habitat and alter the species' natural behaviour, potentially impacting recruitment and mortality rates and/or persistence at the site.
Road traffic	<ul style="list-style-type: none"> Individuals may suffer injury or direct mortality through collisions with road traffic.

Threat	Description
Pollutants and toxicants	
Pesticide use	<ul style="list-style-type: none"> Ingestion of prey containing chemicals such as anti-coagulant rodenticides can lead to toxic effects and mortality.
Introduced species	
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. This impacts both on native prey species for Powerful Owls and survival of early fledglings.
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, and reduced capacity to adapt to changing conditions.

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 knowledge of biology, ecology, distribution, demography, emerging threats, and conservation requirements.
- Support community participation and improve awareness of the Powerful Owl 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 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.
Community engagement and awareness	<ul style="list-style-type: none"> Engage citizen scientists in information gathering to inform improved management for the Powerful Owl. Continue to identify, promote, and support opportunities for community involvement in conservation efforts and behaviours that support a healthy environment.

Action	Description
	<ul style="list-style-type: none"> • Work with key stakeholders to reduce threats from human disturbance, including the impacts of rodenticides.
Compliance and enforcement	<ul style="list-style-type: none"> • Undertake risk-based compliance and enforcement activities to limit the impacts of recreational activities to the Powerful Owl and illegal removal of native vegetation.
Conservation management planning	<ul style="list-style-type: none"> • Work with key stakeholders to prepare an action statement for the potentially threatening process <i>Poisoning of native wildlife by anticoagulant rodenticides</i>.
Control introduced predators *	<ul style="list-style-type: none"> • Implement and maintain effective management and control of feral cats and foxes in priority areas.
Develop, update and apply forestry protections	<ul style="list-style-type: none"> • Maintain prescriptions for the Powerful Owl 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. • Establish and actively maintain a network of special protection zones and special management zones in State Forest in accordance with the requirements for the Powerful Owl in the Department of Energy, Environment and Climate Action's (DEECA) accountability framework.
Protect key habitat*	<ul style="list-style-type: none"> • Ensure that Powerful Owl distribution data and ecological information is available and considered in planning for developments, land use changes and utilities maintenance. Ensure that incremental losses are included in consideration of potential losses.
Research	<ul style="list-style-type: none"> • Determine suitable nest box or artificial hollow design for Powerful Owls. Investigate and trial artificial hollows in areas where natural hollows are lacking or in decline. • Review existing special protection zones and special management zones to determine their effectiveness in terms of large forest owl occupation.
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.
Survey and Monitoring	<ul style="list-style-type: none"> • Monitor the impact of threats to inform management interventions. This includes assessing the impact of secondary poisoning from anticoagulated rodenticides on Powerful Owls. • Monitor populations at known sites and other suitable locations to identify key nest and roosting sites, 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
Avoid and/or mitigate impacts associated with fire management	<ul style="list-style-type: none"> Developed a comprehensive Natural Values tool for use by land managers dealing with fire or potentially disruptive processes affecting FFG listed items and other significant natural values. The tool is a spatial representation of Natural Values and supplied to land managers in both electronic and hard copy formats. The objective is to minimise the impact of land management activities (including fire suppression) on these items. Powerful Owl habitat protected from intense and frequent planned burning where possible. Known nest and roost trees protected (where possible) from fire.
Community engagement and awareness	<ul style="list-style-type: none"> Volunteer groups have been involved in monitoring for Powerful Owls.
Develop, update and apply forestry protections	<ul style="list-style-type: none"> The risk of forestry operations was assessed for the Powerful Owl in 2020 under the Victorian Government Threatened Species and Communities Risk Assessment. Additional permanent protections were not found to be required. The Powerful Owl has current species-specific prescriptions in the Code requiring the application of a protection area and management area around recently and frequently used nesting or roosting sites unless already protected. A network of special protection zones and special management zones has been established in State Forest in accordance with the requirements for the Powerful Owl in DEECA's accountability framework.
Protect key habitat	<ul style="list-style-type: none"> Known Powerful Owl habitat protected on public land through providing biodiversity input into planning processes and application of planning scheme zones. Reduced the threat of habitat loss, especially large hollow-bearing trees, by June 2015 through the 'Large Owls of the Goldfields Project.' This project included field survey, determination of priority habitat zones, mapping and creation of Powerful Owl Management Areas and other protection and management zones.
Research	<ul style="list-style-type: none"> Dietary studies undertaken in major habitat types and urban areas occupied by the Powerful Owl to determine foraging habitat, prey preferences and availability. GPS tracking conducted in the territories of 40 Powerful Owls to inform planning and understand habitat requirements in different landscape types (urban, forest and agricultural). Tested Powerful Owls for prevalence of toxins (heavy metals, agricultural chemicals and rodenticides). Demonstrated high exposure to second-generation anticoagulant rodenticides. Modelled habitat suitability across greater Melbourne to demonstrate areas of high importance including roosting habitat (nest habitat was modelled previously). Established thresholds for the degree of urbanisation that can occur before habitat becomes unsuitable. Genetic analysis undertaken to determine level of diversity and relatedness.
Survey and monitoring	<ul style="list-style-type: none"> Surveys undertaken as part of the West Regional Forest Agreement to improve estimation of population size and the location of breeding populations.

Past action	Description
	<ul style="list-style-type: none">• Surveys undertaken in Melbourne, Mornington Peninsula, Otways and Brisbane Ranges in collaboration between Deakin University and citizen scientists to monitor breeding.• Surveys undertaken at priority locations (including existing Powerful Owl Management Areas and Special Protection Zones) to establish the distribution of individuals and breeding pairs and key habitat features (e.g., roosting and breeding sites).• Assessed post-fire status of populations using spotlighting and call playback.• Prioritised areas for protection from future fires and salvage harvesting.

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

- [Powerful Owl Species Forecast Report](#)
- [Threatened Species Assessment report – Powerful Owl \(*Ninox strenua*\)](#)
- [Commonwealth Species Profile and Threats database](#)
- [Threatened Species and Communities Risk Assessment](#)
- [Code of Practice for Timber Production 2014](#)
- [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://www.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 \(environment.vic.gov.au\)](#)

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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