



# BRUSH-TAILED ROCK-WALLABY ACTION PLAN

IMPLEMENTATION  
PROGRESS REPORT  
2020





## Acknowledgment to Country

EPSDD acknowledge the Ngunnawal people as Canberra's first inhabitants and Traditional Custodians of Ngunnawal Country. We recognise the special relationship and connection that Ngunnawal people have with this Country. Ngunnawal people are a thriving people whose life and culture is connected unequivocally to this land in a way that only they understand and know, and is core to their physical and spiritual well-being. The past disconnection of the Ngunnawal people from Culture and Country has had long-lasting, profound and ongoing health and well-being effects on their life, cultural practices, families and continuation of their law/lore. We acknowledge the historic dispossession of the Ngunnawal people of Canberra and their surrounding regions. We recognise the significant contribution the Ngunnawal people make in caring for Country as for time immemorial they have maintained and will continue to maintain a tangible and intangible cultural, social, environmental, spiritual and economic connection to these lands and waters.

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## Produced by the

Environment, Planning and Sustainable Development Directorate.

This report was prepared by the ACT Conservator Flora and Fauna, Ian Walker, in accordance with the requirements of the Nature Conservation Act 2014 that requires the Conservator to report to the Minister every five years on an action plan (s. 108 (3)). The Minister is required to make the progress reports publicly accessible (s. 108 (4)).

This report was written by Sarah May, Threatened Species Program Manager, Tidbinbilla Nature Reserve and Jennifer Pierson, former Threatened Species Program Manager, Tidbinbilla Nature Reserve. The photos are attributed to Richard Turner.

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# BACKGROUND

## SPECIES DISTRIBUTION AND CONSERVATION STATUS

The Brush-tailed Rock-wallaby (*Petrogale penicillata*) was historically distributed throughout the temperate zone of the Great Dividing Range from western Victoria to southern Queensland. The species has declined substantially across its range, particularly in Victoria, ACT and NSW. Remaining populations are primarily small and fragmented, with many colonies containing just a few individuals (Woinarski and Burbidge 2016). In the ACT, the species is listed as Endangered; however, it has not been seen here for more than 60 years, with the last confirmed sightings at Tidbinbilla in 1959, and is likely locally extinct in the wild. Major causes for decline include hunting (historic), introduced predators and herbivores, wildfire, drought, human disturbance and disease.

The species is split into three recognised Evolutionarily Significant Units (ESUs): the Southern ESU; Central ESU; and a Northern ESU. There are fewer than 100 southern Brush-tailed Rock-wallabies remaining. In 2015, approximately 30–40 animals persisted in the wild in a single population comprising several ‘sites’ spread over 2km of gorge country in the Snowy River National Park, Gippsland ([Southern Brush-tailed Rock-wallaby Recovery Team 2014](#)). In July 2015, a reintroduced population in the Grampians had declined to four animals, with supplementation occurring in 2020 to reduce inbreeding.

The Brush-tailed Rock-wallaby has been subject to an intensive recovery program since 1996, co-ordinated by the Southern Brush-tailed Rock-wallaby Recovery Team. In the ACT, Tidbinbilla Nature Reserve was part of the initial team and has remained a committed partner in saving this species from extinction. Tidbinbilla Nature Reserve holds a large proportion of the Southern ESU in captivity and has been a significant contributor to ex-situ conservation and research that is helping to inform recovery of this species. This captive breeding program is based on East Gippsland animals which were removed from several very small colonies in the late 1990s. The very narrow genetic profile of these animals has been identified as a major problem and the recovery team has agreed to introduce some Central ESU Brush-tailed Rock-wallabies into the program to increase genetic robustness. Inbreeding remains a challenge in the wild population, with supplementation translocations beginning in 2020.

The Southern Brush-tailed Rock-wallaby Recovery Team is a voluntary collaboration of conservation organisations. Tidbinbilla Nature Reserve, Mt Rothwell Biodiversity Interpretation Centre, Zoos Victoria, Parks Victoria, Department of Environment, Land, Water and Planning (VIC) (DELWP), and Universities of Adelaide and Melbourne, are working together to save this highly threatened population from extinction.

The Brush-tailed Rock-wallaby is listed as:

- **Vulnerable** under the International Union for Conservation of Nature's (IUCN) Red List of Threatened Species, the Commonwealth [Environment Protection and Biodiversity Conservation Act 1999](#) (EPBC Act), and the [Nature Conservation Act 1992 \(QLD\)](#)
- **Endangered** under the [Biodiversity Conservation Act 2016](#) (NSW) and the [Nature Conservation Act 2014](#) (ACT)
- **Threatened** under the [Flora and Fauna Guarantee Act 1988](#) (VIC)
- **Critically Endangered** on the Advisory List of Threatened Vertebrate Fauna in Victoria (2013), that reflects the status of the Southern ESU population.

The [Nature Conservation \(Brush-tailed Rock-Wallaby\) Action Plan 2015](#) is in force from 9 May 2015. This is the first five-yearly implementation progress report for this version of the Action Plan.

# CONSERVATION

## OBJECTIVE

The main conservation objective of this action plan is to contribute to the maintenance of long-term, viable wild populations of the species across its former range, including the ACT.

The objective is being achieved through the following strategies:

- **Protection**
  - > Identifying and protecting habitat critical to survival of the species in the ACT.
  - > Establishment of an insurance population of the Southern ESU that will also serve as a source of animals for reintroductions and research at Tidbinbilla NR.
- **Survey, monitoring and research**—Promoting and participating in a program of survey, monitoring, and research, aimed at better understanding the ecology of the species and identifying and managing causes of population decline.
- **Regional co-operation**—Co-operating with state and local government agencies in formulating and implementing conservation measures.
- **Community engagement**—Increasing community awareness of the need to protect the species and its habitat and supporting related community-based conservation action.

# PRIORITIES

As the species is listed as Endangered (and likely locally extinct in the wild) in the ACT, the priorities for conservation in the ACT relate to the following:

1. Supporting the extralimital conservation of the species through involvement in state and national recovery teams.
2. Research into the processes that led to the eventual local extinction of the species in the ACT and region within the context of a potential reintroduction.

The ACT has primarily contributed through the conservation colony at Tidbinbilla NR. Contributions include animals for reintroductions, as well as significant scientific and technical expertise to the recovery of the species in other jurisdictions. Continued involvement in the recovery program will be beneficial in the reintroduction of the species in the ACT.

# SUMMARY

The Southern Brush-tailed Rock-wallaby Recovery Team aims to prevent extinction and increase genetic robustness by establishing a captive insurance population of at least 200 adults that will meet the demands of reintroduction efforts while maintaining genetic diversity.

**Breeding program:** Tidbinbilla NR is currently undertaking a southern Brush-tailed Rock-wallaby breeding program specifically designed to improve the genetic robustness of this ESU. These animals will be the founding animals for a new enclosure (Safe Haven) at Tidbinbilla NR.

**Safe Haven:** In partnership with Zoos Victoria, the Threatened Species Commissioner's Office and the Victorian DELWP, a 120ha feral predator-free enclosure (Safe Haven) capable of holding a population of 100–200 animals is being constructed at Tidbinbilla NR. A partner site has been established at Mt Rothwell Biodiversity Interpretation Centre (Victoria) will also hold more than 100 animals.

**Outcome:** The Safe Haven at Tidbinbilla NR will help prevent extinction of the southern Brush-tailed Rock-wallaby by:

1. maintaining a genetically robust insurance population
2. providing a source of animals for reintroductions into the wild
3. providing numerous opportunities for research that will aid reintroduction efforts (e.g. reintroduction techniques, habitat and resource use, social dynamics, trends in genetic diversity over time)
4. providing better opportunities for community outreach and education.

# PROGRESS AGAINST INTENDED MANAGEMENT ACTIONS

## Survey, Monitoring and Research

### OBJECTIVE

Continue to survey NNP for the distribution and population attributes of pest predator species

### ACTIONS

Continue to support vertebrate pest surveys undertaken by Conservation Planning and Research and the ACT Parks and Conservation Service

### INDICATOR

Data relating to the distribution and population attributes of pest predator species is available and suitable for analysis

### PROGRESS

1. Camera surveys are conducted pre- and post-ground baiting within the management and conservation zones for wild dogs in Namadgi National Park (NNP).
2. Trapper records of dogs/foxes trapped throughout NNP.
3. Seasonal spotlight surveys for rabbits and predator species.
4. Trials of acoustic monitoring of wild dogs are currently being undertaken.
5. Anecdotal evidence suggests that the recent extensive wildfire through NNP may have altered traditional predator movement patterns, with future monitoring necessary to confirm the implications of this.

### OBJECTIVE

Ascertain the effectiveness of pest predator species control programs in NNP and Tidbinbilla Nature Reserve (TNR)

### ACTIONS

Measure and report efficacy and efficiency of current pest predator control programs in NNP and TNR

### INDICATOR

Data relating the pest predator control programs are available and suitable for analysis

### PROGRESS

1. Electronic records of baiting/spotlighting and camera surveys are maintained.
2. Facilitated a variety of researchers from Arthur Rylah Institute, University of Canberra, ANU and NSW DPI to undertake predator research within NNP.

# PROGRESS AGAINST INTENDED MANAGEMENT ACTIONS

## OBJECTIVE

A better understanding of mechanisms that caused local and regional extinctions of the species is developed and used to ascertain the steps necessary for a potential reintroduction program.

The captive colony at TNR has been utilised for several research projects that have contributed to a greater understanding of reproduction, mate choice and genetics of the species. This colony has the capacity to continue to be used in this manner, further contributing to the conservation of the species.

## ACTIONS

1. An assessment of the relative importance of threatening processes leading to the local extinction of the species
2. Ecologically and economically sustainable abatement measures for introduced predators such as foxes and cats
3. A better understanding of the most appropriate fire regime to maximise resources for the species
4. Habitat modelling to ascertain the best habitat for the species locally
5. The interactions between top predators (dingoes and wild dogs) and introduced predators (foxes and cats)
6. Reintroduction biology – optimal methodologies for the species

## INDICATOR

An improved understanding of the ecology of the species in a local context, especially in the area of continued threat processes, is documented

## PROGRESS

1. No additional knowledge has been gained regarding the relative importance of threatening processes leading to the local extinction of the species.
2. Records are kept of presence/absence from camera observations of wild dog/dingo monitoring across NNP that indicate that cats and foxes occupy all areas of NNP. Cats cannot be adequately controlled over large areas and foxes can only be controlled outside the dingo conservation zone. However, foxes and cats are not currently part of comprehensive targeted control programs throughout NNP. While conference attendance/reviews of current literature have maintained the knowledge base of monitoring/control developments, the limited resources of the vertebrate pest management team have not extended to apply further developments.
3. No additional knowledge has been gained regarding the appropriate fire regime to maximise resources. Although there are records following the 2003 fires across the park, the recent 2020 event has totally changed a massive area of NNP and the impact on predator species will only be known as monitoring adapts and continues.
4. A recent review, **The southern Brush-tailed Rock-wallaby: translocation strategy and site selection** (G. Coulson 2019) discusses knowledge gained through recent translocations and recommends using a combination of remote sensing, field assessments and consideration of logistic factors. ACT Government is currently entering a partnership with VIC DELWP to collaborate with Federation University to conduct a site selection study for Victoria and ACT using these recommendations.

# PROGRESS AGAINST INTENDED MANAGEMENT ACTIONS

5. No additional knowledge has been gained regarding the interactions of dingoes/wild dogs and introduced predators in the local habitat type. Most knowledge on this topic is from arid regions; however, there is still a lot of work being undertaken in the NSW Northern Tablelands by Ballard et al. which is applicable to the current situation in NNP.
6. A recent review, **The southern Brush-tailed Rock-wallaby: translocation strategy and site selection** (G. Coulson 2019) discusses knowledge gained through recent translocations in Victoria. Recommendations include conducting Population Viability Analyses (PVAs) using updated vital rates based on knowledge from the Grampians reintroduction and monitoring data in East Gippsland. Other recommendations include criteria for success being derived from a Population Viability Analysis PVA, and monitoring programs designed to assess the criteria.
7. Methodologies for animal translocation continue to be tested.

OBJECTIVE	ACTIONS	INDICATOR
Through collaboration with researchers in other jurisdictions and institutions, maximise experience and learning for application to a potential reintroduction in the ACT	Continue to collaborate with local and interstate researchers on reintroduction projects	An improved and contemporary understanding of the requirements of reintroduction of the taxon locally is documented

## PROGRESS

Several research collaborations with researchers in the ACT and other jurisdictions are ongoing or have been conducted. These research projects are evaluating several different aspects of Brush-tailed Rock-wallaby biology in the context of reintroductions:

- Habitat selection of the Brush-tailed Rock-wallaby (*Petrogale penicillata*) in the absence of introduced predators—a collaborative Honours project between TNR and the University of Canberra—was completed in 2018. Research confirmed that in addition to rocks, the selection of trees for basking and shelter is important, emphasising the requirement of structural complexity in habitat.
- Genetic rescue of the southern Brush-tailed Rock-wallaby: is there genomic evidence it is reducing inbreeding?—a collaborative Honours project between TNR, VIC DELWP and the University of Canberra—was initiated in 2019. With delays experienced due to COVID-19, the completion of the project is anticipated for late 2021.
- Brush-tailed Rock-wallaby reintroduction site assessment in Victoria and ACT—a collaborative Master's research project between TNR, VIC DELWP and Federation University—was initiated in 2020 and completion is anticipated for late 2022.



# PROGRESS AGAINST INTENDED MANAGEMENT ACTIONS

## Regional Co-operation

### OBJECTIVE

Through engagement with the national and state recovery teams, continue to contribute to the conservation of the taxon across its current and former range

### ACTIONS

1. Encourage and support scientific and technical staff to maintain positions on the National and Victorian Brush-tailed Rock-wallaby Recovery Teams.
2. Maintain contact with the NSW Brush-tailed Rock-wallaby Recovery Team and seek opportunities to assist with the recovery of the taxon in southern NSW.
3. The ACT Government, through TNR will continue to support the breeding programs for the species across its range, particularly the sESU. Opportunities to be more actively involved in the cESU recovery effort will be pursued with NSW agencies.

### INDICATOR

1. Scientific and technical staff are members of the national and state recovery teams.
2. The ACT Government through its agencies has regular dialogue with the NSW Recovery Team and assists with conservation efforts in southern NSW.
3. TNR has the facilities and skilled staff to continue to breed animals for release into the wild.

### PROGRESS

1. TNR's Senior Wildlife Officer and Brush-tailed Rock-wallaby Program Leader are members of the Southern Brush-tailed Rock-wallaby Recovery Team, and key members of the captive sub-group. TNR Wildlife Team Leader/Brush-tailed Rock-wallaby Program Leader has also served as the captive convener 2017–19. TNR hosted the Recovery Team meeting in 2017 and is planning to again in March 2021.
2. TNR's Senior Wildlife Officer has been in contact with the NSW Recovery Team Leader, geneticist and studbooker keeper over the last three years to coordinate breeding efforts among the groups.
3. TNR's breeding program has strengthened the focus towards improving reintroduction success. The breeding program is working with the Southern Brush-tailed Rock-wallaby Recovery Team on creating a genetically robust population that serves as a source for reintroductions in Victoria and has potential to be a source for the ACT.
4. The program is collaborating with Dr Andrew Weeks (University of Melbourne) and Mt Rothwell, on a genetic rescue program to integrate genes from the Central ESU while maintaining the maximum southern gene diversity possible. TNR is leading the intensive-paired breeding necessary to accomplish the genetic rescue program.

# PROGRESS AGAINST INTENDED MANAGEMENT ACTIONS

5. In 2017, TNR joined in partnership with the Southern Brush-tailed Rock-wallaby Recovery Team, Zoos Victoria and the Threatened Species Commissioner's office to build a second, large free-range breeding site for this population. The goal of the site is to improve reintroduction success through:
    - building an insurance population of at least 100 genetically robust individuals
    - incorporating evolutionary processes into breeding program through natural selection pressures
    - providing surplus individuals for experimental translocations while securing a genetically rescued population
    - reducing operational demands of intensive breeding while producing more animals.
  6. In 2018, Dr Maxine Piggot (ANU) completed a Captive Breeding Operational Plan detailing the breeding necessary to create a genetically rescued founding population. The breeding program is underway, but has experienced delays due to the evacuation of animals in response to the threat of fire in January 2020:
    - breeding group (BG) 1 is complete
    - BG 4 is in progress
    - BG 2 is in the process of being re-established
    - BG 3 is on hold until other breeding groups are complete
    - BG 5 + 6 are waiting for identification of suitable central animals.
  7. Fence construction (5km predator-proof fencing) for the Safe Haven was completed in 2020. Pest (native and introduced) animal management and land management will occur in the next 12 months in preparation for the introduction of founding Brush-tailed Rock-wallabies (anticipated timeframe is December 2022).  
<https://www.facebook.com/ACTParks/videos/southern-brush-tailed-rock-wallabies/1940993506210970/>
  8. TNR continues to breed animals for Mt Rothwell's free-range site to introduce new genetic attributes.
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# PROGRESS AGAINST INTENDED MANAGEMENT ACTIONS

## Community Engagement

### OBJECTIVE

Continue to provide public education programs that illuminate the plight of the species and threatening processes

### ACTIONS

Making use of the captive colony and interpretive material to continue to deliver and develop an education program

### INDICATOR

A public education program that elucidates the issues surrounding the local extinction of the Brush-tailed Rock-wallaby and its dramatic decline elsewhere is in place

### PROGRESS

1. TNR's Brush-tailed Rock-wallaby program has increased the public outreach associated with the breeding program.
2. A significant development was the designation of the southern Brush-tailed Rock-Wallaby as the ACT Mammal Emblem. This was decided through a popular vote held by the ACT Legislative Assembly. The hope is that the added attention will help conservation efforts. <https://www.cmtedd.act.gov.au/communication/flags>
3. TNR's program has made guided activities available to the public, aimed at engaging visitors with the Brush-tailed Rock-wallaby in an up-close and personal manner while describing basic biology of the species and reasons for decline and current threats. For example, during school holidays, the public can watch the TNR's wildlife veterinarian perform a health check on a Brush-tailed Rock-wallaby under anaesthesia. The vet has a microphone with a speaker outside and talks the public through the health check as it is conducted. The public get to see the animal up close, including inside pouches on females. <https://www.canberratimes.com.au/story/6019278/check-out-how-the-vet-works-at-the-tidbinbilla-nature-reserve/digital-subscription/>
4. TNR has also expanded its tactile resources by obtaining the skins of deceased animals and tanning them. The Aboriginal rangers at TNR have used traditional techniques to tan skins, providing the public with the opportunity to feel the fur of a Brush-tailed Rock-wallaby. Given the fur trade is a primary cause of decline, this is a highly engaging way to discuss conservation with the public.
5. The recently opened Wallaby Walk allows visitors to view Brush-tailed Rock-wallabies in natural habitat and will include interpretative signage that will provide information on the species and Tidbinbilla's role in its conservation.
6. Additional education and outreach opportunities for visitors/public to learn about and view this species is planned for TNR's Eucy Forest. Some 'retired' animals have been released within this enclosure.
7. In collaboration with the EPSDD Communications and Media team, a communications and media plan for the Brush-tailed Rock-wallaby threatened species program is being developed.
8. TNR's Brush-tailed Rock-wallaby breeding program has been featured in local and national media stories (<https://www.canberratimes.com.au/story/5993731/fence-for-our-emblem-rock-wallaby-to-get-new-predator-proof-home/>) and directorate social media stories (<https://www.facebook.com/TidbinbillaNatureReserve/posts/1452805151562172>), that communicate conservation issues and success stories of Brush-tailed Rock-wallaby recovery.



