



NSW National Parks and Wildlife Service

Threatened Species Framework annual report

2023–24



Acknowledgement of Country

Department of Climate Change, Energy, the Environment and Water acknowledges the Traditional Custodians of the lands where we work and live.

We pay our respects to Elders past, present and emerging.

This resource may contain images or names of deceased persons in photographs or historical content.

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Artist and designer Nikita Ridgeway from Aboriginal design agency – Boss Lady Creative Designs, created the People and Community symbol.

Cover photo: NPWS staff member handling Caley's grevillea (*Grevillea caleyi*). Remy Brand/DCCEEW

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Foreword

Ensuring our national parks and reserves are strongholds for threatened species is at the heart of the NSW National Parks and Wildlife Service (NPWS) mission.

The community rightfully expects us to safeguard these species for future generations, and the 2021 NSW National Parks and Wildlife Service Threatened Species Framework (the Framework) reflects that commitment. The Framework sets 2 ambitious goals: zero extinctions across the national park estate as a whole; and stabilised or improved trajectories for all threatened species by 2030 – with an interim target of 300 species by 2026.

I am pleased to report that we have made strong progress towards these goals in the past year including:

- delivering targeted conservation actions at Assets of Intergenerational Significance sites
- acquiring important threatened species habitat for addition to the national park estate
- advancing our feral predator-free areas with new brush-tailed rock-wallaby (*Petrogale penicillata*) areas adding 100 ha at Nattai National Park and 300 ha at Warrumbungle National Park
- reaching key milestones for our world-leading Ecological Health Performance Scorecards program
- increasing feral animal and weed control across the national park estate
- further integrating threatened species conservation into fire planning and response
- enhancing data management and modelling to guide evidence-based actions
- strengthening our partnership with the Saving our Species program to deliver a consistent statewide approach to managing threatened species.

Alongside this report is the updated *Threatened species data trends* report, now available as an online interactive dashboard. The report summarises the on-park status of 92 threatened species, drawing on up to 11 years of monitoring data. Each species has its own searchable page with trend data and explanations of how the data was collected and assessed. About one-third of species show stable or improving trends, highlighting the urgent need to prioritise recovery efforts based on evidence and focus resources where they will have the greatest impact.

The achievements in this report reflect the dedication and expertise of NPWS staff working in close partnership with colleagues across the Department of Climate Change, Energy, the Environment and Water and the broader NSW Government, Aboriginal partners, the Australian Government, scientists, community groups and neighbouring landholders.

Thank you to everyone involved for your contributions and commitment to protecting and recovering threatened species for future generations.

Alex Graham
Deputy Secretary, NSW National Park and Wildlife Service
NSW Department of Climate Change, Energy, the Environment and Water

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Acronyms and abbreviations

Abbreviation	Definition
AIS	Asset of Intergenerational Significance
AWC	Australian Wildlife Conservancy
BC Act	<i>Biodiversity Conservation Act 2016</i> (NSW)
BFMC	Bush Fire Management Committee
CAP	Conservation action plan
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water (the department)
FPFA	Feral predator-free area
ICON	Incident Control Online
NPW Act	<i>National Parks and Wildlife Act 1974</i> (NSW)
NPWS	National Parks and Wildlife Service
RFS	NSW Rural Fire Service
SoS	Saving our Species
the Framework	NPWS Threatened Species Framework
UNSW	University of New South Wales



The NSW National Parks and Wildlife Service is the first national park agency in Australia, and one of the first in the world, to set a zero extinctions target.

Border mallee (*Eucalyptus microcodon*). Photo: Justin Mallee/DCCEE

Introduction

In New South Wales, there are currently 957 plants and animals listed as critically endangered, endangered or vulnerable under Schedule 1 of the *Biodiversity Conservation Act 2016* (NSW) (BC Act), excluding marine mammals, invertebrates and fungi. Approximately 84% of threatened plant and animal species are represented in NSW national parks, which cover 10.4% (8.3 million ha) of land in the state. This concentration of threatened species and their habitat in the reserve system highlights the critical role of NPWS in threatened species conservation.

The NPWS Threatened Species Framework sets bold objectives for threatened species conservation in our national park system to achieve zero extinctions.

By 30 June 2026

- Stabilise or improve the on-park trajectory of at least 300 threatened species (measured by reference to metrics appropriate to the relevant species).
- No extinctions on the national park estate (that is, no loss of threatened species from the national park estate as a whole).

By 30 June 2030

- Stabilise or improve the on-park trajectory of all threatened species.
- No extinctions on the national park estate.

For the purposes of this report, the term ‘NSW national parks’ refers to land reserved under the *National Parks and Wildlife Act 1974* (NSW) including:

- national parks
- nature reserves
- state conservation areas
- Aboriginal areas
- regional parks
- historic sites
- karst conservation areas
- land managed by NPWS but not yet formally reserved.



Delivery of the NPWS Threatened Species Framework for zero extinctions will ensure national parks remain a permanent stronghold for threatened species in New South Wales.

Green and golden bell frog (*Litoria aurea*). Photo: Alex Pike/DCCEEW

Reporting against targets

NPWS is committed to reporting against the targets set out in the Threatened Species Framework (the Framework) to be transparent and demonstrate the achievements being made towards threatened species conservation. This is the second report published under the Framework and includes an overview of relevant programs and initiatives and highlights the achievements during the 2023–24 financial year. A summary of these achievements is presented in Table 1.

Table 1 Summary of achievements against the 8 framework actions for 2023–24

No.	Action	2023–24 update
1.	Establish and maintain an inventory of threatened species on the national park estate	NPWS threatened species inventory has been established and work to incorporate additional datasets and improve data presentation is underway. This is not currently in a format that is available publicly under the Sensitive Species Data Policy (see More information). In 2023–24, of the 928 threatened plants and animals listed in NSW, approximately 84% have been recorded in NSW national parks.
2.	Map the on-park distribution of each threatened species	The distribution modelling has been completed for 347 threatened species that occur on-park. Discrete areas of threatened species habitat declared as Assets of Intergenerational Significance (AIS) (action 3) have also been mapped.
3.	Declare and manage important habitat as AIS	By 2023–24, more than 280,000 ha of land had been declared as environmental AIS, protecting important habitat for 108 threatened species across 279 sites. 111 conservation action plans (CAPs) were published on the department's website.
4.	Improve the integration of threatened species objectives in the design and delivery of landscape-scale park management actions	Reserve establishment In 2023–24, 73,280 ha of land was acquired for the national park estate, providing important habitat for 51 threatened animal species and 11 threatened plant species, which is now managed for conservation in perpetuity. Feral animal and weed control In 2023–24, more than 55,500 feral animals were removed from the national park estate by aerial shooting, ground shooting, mustering and trapping. This included 29,800 km of aerial baiting, 2,250 hours of aerial shooting, 14,416 trap nights and 360 ground shooting days, together with 30,310 ground baits being laid. NPWS completed 77,000 ha of weed control, including 36,671 ha for threatened species conservation. Feral predator-free areas (FPFAs) In 2023–24, 3 locally extinct species were reintroduced to the existing 3 FPFAs, which are managed in partnership with Australian Wildlife Conservancy and Wild Deserts. NPWS continued work to establish an additional 4 FPFAs, will bring the total fox- and cat-free areas in NSW national parks to about 65,000 ha. In 2023–24, New Holland mice (<i>Pseudomys novaehollandiae</i>) were reintroduced to the Yiraaldiya site.

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No.	Action	2023–24 update
		Two additional FPFAs are being established for brush-tailed rock-wallabies (<i>Petrogale penicillata</i>), along with a new feral-free site for yellow-footed rock-wallabies (<i>Petrogale xanthopus</i>). Fire management Throughout 2023–24, NPWS continued to integrate threatened species priorities into bushfire risk management plans and embedded AIS site information into the Rural Fire Service (RFS) bushfire planning and response systems. NPWS also carried out fire vulnerability assessments for AIS sites to strengthen planning and response tools and continued to develop species-specific fire guidance to manage appropriate fire regimes and inform response measures.
5.	Report against objectives and targets	Annual reporting The first annual report under this Framework was published on 7 September 2024. The 2023–24 report includes an interactive online dashboard, visualising species trends using data from multiple monitoring and survey sources. Ecological Health Performance Scorecards program In 2023–24, NPWS published Ecological Health Performance Scorecards for Kosciuszko National Park and Royal National Park. Data was collected for Pilliga-Warrumbungles and Great Divide Northern Forest scorecard areas, with planning underway for the Greater Blue Mountains.
6.	Integration with Saving our Species (SoS) and other programs	During 2023–24, the SoS program supported the management of 154 threatened species, 4 key threatening process projects and 9 threatened ecological community projects on the national park estate.
7.	NPWS threatened species research strategy	A research strategy was developed for the NPWS FPFA program. A threatened species research strategy under the framework is yet to be developed.
8.	Implement a data management plan	NPWS is planning for the development of a data platform that will consolidate data from multiple sources into a centralised location to support more streamlined analysis and reporting.

Threatened species actions

The NPWS Threatened Species Framework (the Framework) is designed to promote the protection and recovery of threatened species in NSW national parks and includes the 8 actions (set out in Table 1) designed to support the delivery of our objectives. To achieve threatened species outcomes and help the NPWS to meet the objectives under the Framework, dedicated funding is provided through NPWS, Commonwealth funding initiatives, NSW Koala Strategy, NSW Environmental Trust grants, the NSW Government's Saving our Species (SoS) program and other contributing partnerships.

This section provides a summary of progress towards the delivery of each action.

Threatened species inventory

The first iteration of the NPWS threatened species inventory was reported in the 2021–22 and 2022–23 *Threatened Species Framework annual report*. This inventory provides a critical baseline for future reporting on the trajectories of threatened species within NSW national parks.

In 2023–24, the data inputs and analytical methods underpinning the inventory were significantly enhanced. Key improvements included the integration of species distribution models, expert elicitation inputs, and processes to factor in record age, minimise bias from spatial data errors, and work towards categorisation of results using 5 data-driven confidence intervals (very low to very high). These advancements allow for the consideration of multiple data types and the application of more robust analytical techniques, improving the accuracy of the inventory results and better accounting for uncertainty in the available data.

As of June 2024, there were 928 threatened animal and plant species in New South Wales, of which a little more than 84% had been recorded in NSW national parks since 1950 (Table 2). Of the species listed as critically endangered in the state, more than 67% have been recorded in NSW national parks (Figure 1). Confidence intervals for these species will be updated and included in the next annual report.

Table 2 Summary of threatened species (excluding marine mammals, invertebrates and fungi) recorded in NSW national parks as of June 2024

Species group	Number of threatened species in NSW	Number of threatened species recorded on-park	% of threatened species in NSW recorded on-park
Amphibians	30	27	90%
Birds	130	119	92%
Mammals	59	57	97%
Reptiles	50	45	90%
Plants	659	532	81%
Total	928	780	84%

Note: While care has been taken to develop this list, data is based on historic observational records and, therefore, may be subject to error. The quality, integrity and validation of this information will improve over time as additional data is collected, and historical records are verified. The NPWS threatened species inventory will be improved and updated each year.

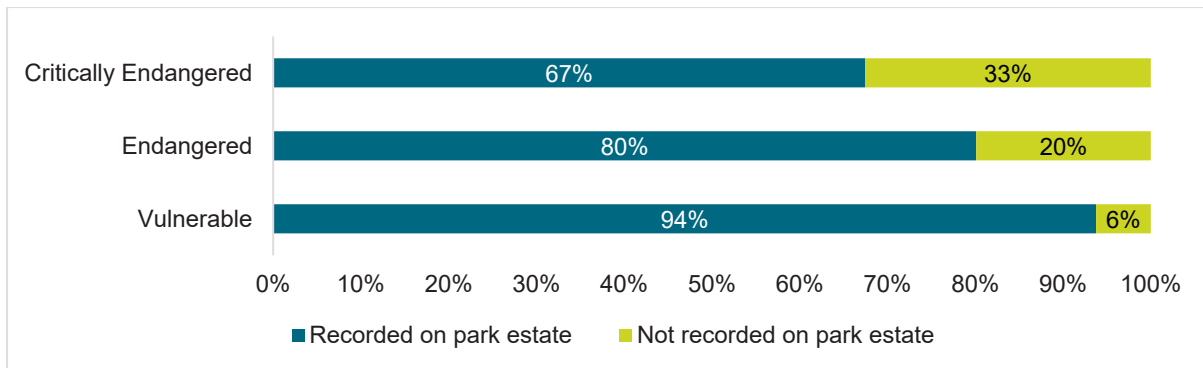


Figure 1 Percentage of threatened plants and animals recorded in NSW national parks, split by NSW threatened species listing category

In maintaining this inventory, we can identify threatened species – such as the rainforest cool-skink (*Harrisioniascincus zia*), Monga tea tree (*Leptospermum thompsonii*) and black-breasted button-quail (*Turnix melanogaster*) – that are unlikely to occur within NSW national parks. Determining the distributions of species that are underrepresented in the national parks estate will help to identify priorities for future acquisition to increase the number of threatened plants and animals protected in perpetuity in the reserve system.

Establishing species trajectories

The Framework’s objectives are to ‘Stabilise or improve the on-park trajectory of at least 300 threatened species’ by 2026, and all threatened species by 2030. As part of this Framework, population data is captured and reported annually. Measuring the trajectory of threatened species is complex, and it can take years to acquire sufficient monitoring data and species ecological knowledge required to analyse and interpret changes in populations, accounting for natural variability in the population and impacts from environmental influences.

In the 2021–22 and 2022–23 *Threatened species status report*, published in September 2024, the data trend of 101 threatened species was reported. In this report for 2023–24, the data trend of 92 species is presented. There are 68 species that have been included in both reports. Of the original 101 species, 33 are not included in the 2023–24 report, however, 24 new species have been included. This brings the total number of species reported under this Framework to date to 125 species.

In 2023–24, the analysis of population data trends for this report was strengthened by incorporating up to 11 years of monitoring data points for each species, rather than only 2 data points, which only provides for a limited, point-in-time comparison. Including a more comprehensive dataset, coupled with species expert data validation processes, allows for a more robust trend estimate. Where possible, both long- and short-term data trends have been statistically modelled, representing a significant step forward in working towards achieving the Framework’s objectives.

The *Threatened species data trends* report has been published in a user-friendly interactive dashboard format. See ‘More information’.

On-park distribution mapping

A range of species distribution models (SDMs) and species maps are available for threatened species. Understanding the on-park distribution of threatened species is critical for identifying populations to monitor, track and prioritise for conservation, supporting the goal of zero extinctions on the national park estate. Distribution data also helps target survey efforts to confirm species presence and refine our understanding of where they occur, which will help to inform future decisions on reserve acquisition and threatened species management in NSW national parks. During 2023–24, SDMs were also used to progress significant improvements to the NPWS threatened species inventory.

As of June 2024, on-park distributions have been mapped for 347 threatened species. Figure 2 shows an example of a species distribution model for the pouched frog (*Assa darlingtoni*). Additionally, discrete habitat areas for 108 species have been mapped and declared as Assets of Intergenerational Significance (AIS).

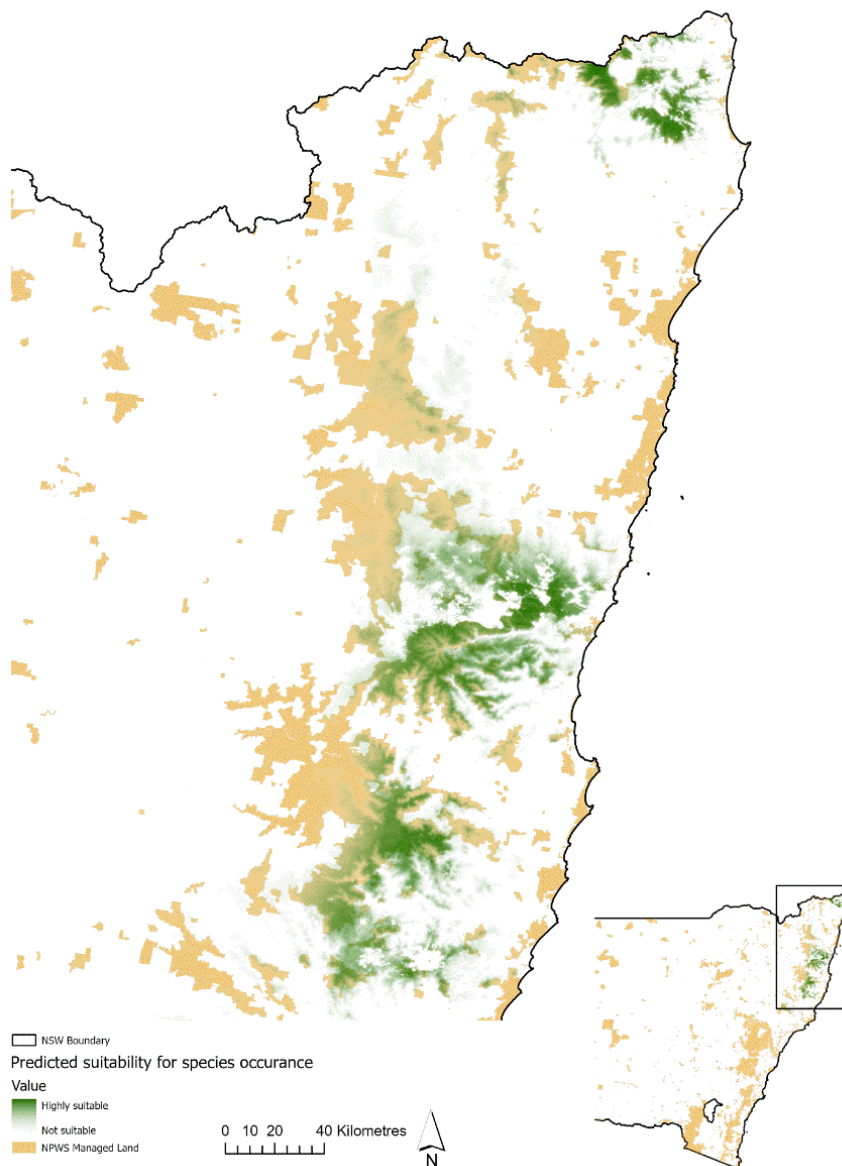


Figure 2 Species distribution model for the pouched frog (*Assa darlingtoni*). Dark green colouration indicates high likelihood of suitable habitat for the species. Yellow colouration indicates NPWS reserves.

Assets of Intergenerational Significance

A key pillar of the Framework is the declaration of threatened species habitat as an Asset of Intergenerational Significance (AIS). The *National Parks and Wildlife Act 1974* (NSW) (NPW Act) allows the Minister for the Environment to declare land on the national park estate as AIS. An AIS is an area of land (declared site) within the national park estate that has exceptional environmental or cultural values that warrant special protection, including dedicated management measures. The declaration of land as AIS enables stronger legal protections for our threatened species, requires that dedicated conservation action plans (CAPs) are developed, and increases mechanisms to protect these important sites during planned and unplanned fires.

As of 30 June 2024, 279 declared areas were protecting important habitat for 108 threatened species.



Conservation action plans

Under the National Parks and Wildlife Regulation 2019 (NSW), NPWS is required to prepare a CAP for all AIS-declared lands within 90 days of a declaration. As of June 2024, 111 CAPs had been developed and published on the department's website.

NPWS is required to implement conservation activities for declared AIS in accordance with approved CAPs to ensure the protection of declared threatened species habitat in NSW national parks. Activities for threatened species identified in the CAPs are aligned with the Saving our Species conservation strategies developed under the BC Act, where possible.

Implementing conservation action plan activities

Throughout 2023-24, in collaboration with complementary NSW Government programs, NPWS delivered a total of 359 CAP activities across 246 AIS sites, supporting the recovery of 98 threatened species. These activities were funded through a combined investment of \$4.96 million (cash) and significant in-kind contributions (\$2.4 million) and other funding sources such as external grants.

Conservation activities implemented focused on managing key threats and maintaining or restoring site values, including:

- weed and feral animal control to reduce direct threats to species and habitats
- implementing hygiene protocols and *Phytophthora* testing to prevent pathogen introduction and spread
- restoration works to improve habitat condition

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- ex-situ management, such as seed collection and germination trials to assess the viability of ex-situ populations.
- Infrastructure improvements, such as track upgrades, to help prevent unauthorised access to sensitive sites, and
- awareness campaigns and local outreach to support AIS program objectives and enhance public awareness of threatened species conservation.

A significant proportion of the total investment into conservation activities for declared AIS has contributed to the management of feral animals within core threatened species habitat across the reserve system, followed by species monitoring and control of weeds (Figure 3).

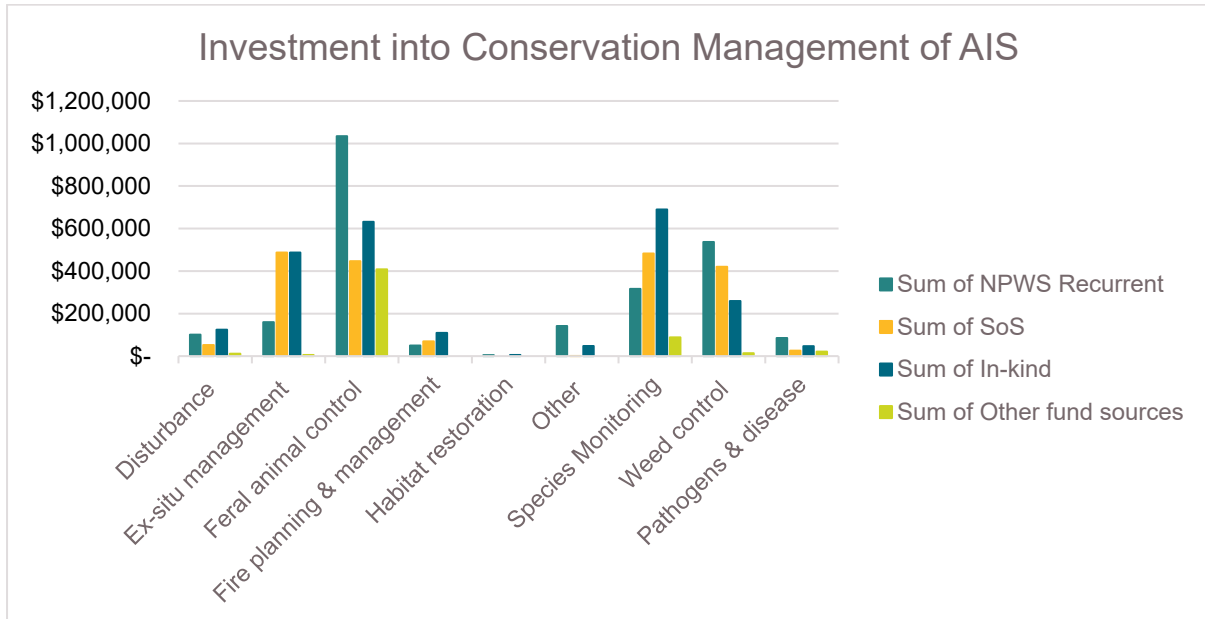


Figure 3 The investment into conservation activities categories for AIS delivered in 2023–24

Protecting the core habitat for Mukarrthippi grasswren

Recent surveys have discovered the known population of the Mukarrthippi grasswren (*Amytornis striatus striatus*) (Photo 1) at 3 new locations within Yathong Nature Reserve, more than 6 km away from the previously known habitat, offering fresh hope for its survival. These new sites feature the bird's preferred spinifex and mallee habitat. At least 6 birds have been seen in these new locations, expanding its known range.

As one of Australia's rarest birds, the Mukarrthippi grasswren is the one most-likely to become extinct. The critically endangered bird was previously spotted at 2 locations in and near Yathong Nature Reserve in central-west New South Wales and, in 2021, the total population was estimated to be between 4 and 20 birds.

To protect the species and restore its habitat, NPWS has declared core habitat as AIS, providing stronger legislative protection under the NPW Act. A CAP has been developed which identifies key risks and prescribes management and monitoring activities for the Mukarrthippi grasswren in Yathong Nature Reserve.

Fire response plans to further protect the species are in development, and the habitat will be included in a large feral predator-free area to prevent the threatened bird from being predated on by feral cats. Research and monitoring efforts, including remote-sensing surveys to map key habitat, will be ongoing.

'Mukarrthippi' [mook-wah-tippy] translates to 'small bird of the spinifex' in the language of the Ngiyampaa people. The Mukarrthippi grasswren is a subspecies of the striated grasswren.

The survey and conservation efforts have been undertaken in collaboration with BirdLife Australia and were supported by the SoS program.

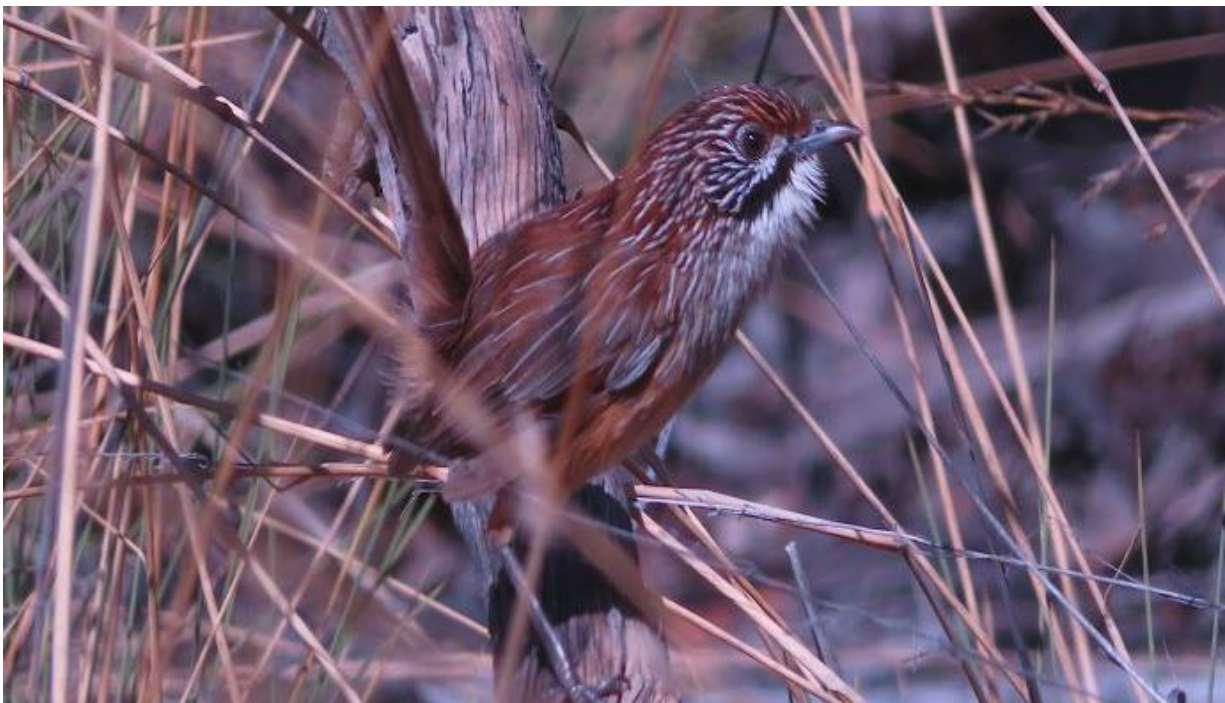


Photo 1 The Mukarrthippi grasswren (*Amytornis striatus striatus*). Photo: Dean Portelli/DCCEW

Assets of Intergenerational Significance interactive map

The AIS interactive map provides a way for anyone to discover which places in our national parks have the strongest protection for threatened species as declared AIS sites. Functioning on both desktops and mobiles, users can access the map to zoom to locations or search via the list to find more information about species protected under AIS (Photo 2 and Photo 3). A few sites are too sensitive to share on the map, but you can still see their information and find a link to the CAP. Find the AIS interactive map on the NSW National Parks website (see More information).

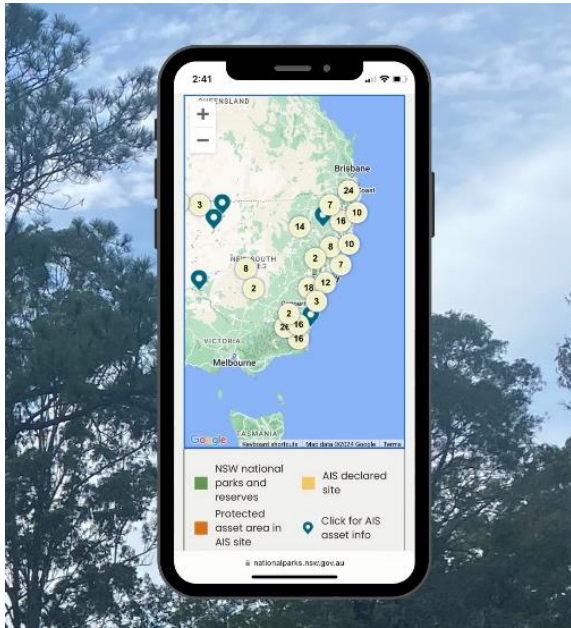


Photo 2 The AIS interactive map on mobile. Photo: DCCEEW

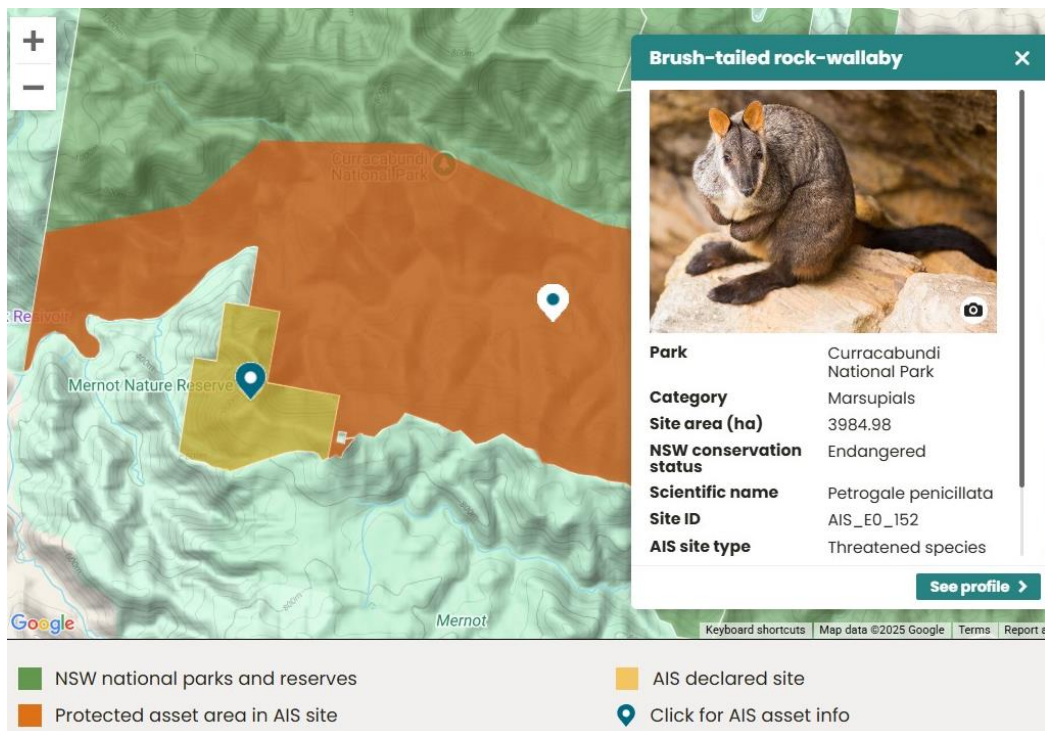


Photo 3 The pop-up information box for a profile of the brush-tailed rock-wallaby (*Petrogale penicillata*) on the AIS interactive map. Photo: DCCEEW

Assets of Intergenerational Significance interpretation project

NPWS implemented a project to raise awareness and foster greater public appreciation of threatened species, focusing on those with habitat declared as AIS, through interpretation. Interpretation in this context means a physical or digital project that provokes curiosity, deeper understanding, education and awareness in those who engage with it.

Projects range from physical interpretations – such as different styles of signage (Photo 4 and Photo 6), sculptures (Photo 7), murals (Photo 5) and audio signs – to digital interpretations such as videos, 360-degree virtual experiences, audio tours, upgrades to the AIS online interactive map, and availability of new threatened species profile pages on the NPWS website (Photo 3). Featuring a range of trees, shrubs and other herbaceous plants, frogs, lizards, birds and mammals, more than 25 threatened species declared as AIS have been promoted with projects spread across New South Wales.



Photo 4 Interpretative signs installed on sites at Marramarra National Park to inform visitors about *Asterolasia elegans*. Photo: Guy Sodsai/DCCEEW



Photo 5 A mural installed at the Perisher Valley Visitor Centre in Kosciuszko National Park depicting various threatened species that visitors might find while in the area. Photo: Emma Mcinerney/DCCEEW



Photo 6 Interpretative signs installed at Budderoo National Park to inform visitors about Carrington Falls grevillea (*Grevillea rivularis*) and Carrington Falls pomaderris (*Pomaderris walshii*). Photo Geogia Battin/DCCEEW



Photo 7 A sculpture of the Kaputar rock skink (*Egernia roomi*) installed along a walking track at Mount Kaputar National Park to increase visitor awareness of their presence. Photo: Kirsten Skinner/DCCEEW

‘BatCam’ – grey-headed flying-fox live camera

Live-stream cameras provide a window into the secret lives of wild animals with minimal disturbance to them. After the success of the NPWS brush-tailed rock-wallaby (*Petrogale penicillata*) cam, ‘BatCam’ (Photo 8) presented challenges related to observing a species that spends its days roosting high in the trees.

A site was chosen in Wingham Brush Nature Reserve that would give the best views of the local grey-headed flying-fox (*Pteropus poliocephalus*) colony throughout the year. A telescopic pole was used to place the camera at the right height in the canopy and made it easier to lower the camera for maintenance and cleaning. Extensive environmental assessments were conducted to ensure there would be no negative impact on the flying-foxes’ wellbeing or surrounding habitat.

The camera is set to rotate through 7 different views of the flying-fox habitat, changing every 30 seconds. Some views using the zoom feature allow viewers to closely observe flying-fox behaviours such as grooming and social interactions. This camera also helps staff keep an eye on the colony and observe when events such as heat waves might be having an impact on the bats.

The grey-headed flying-fox was chosen for this project to help improve the general public’s perception of bats by highlighting their endearing behaviours. Their important role as forest pollinators and seed distributors also make them crucial to the health of the ecosystem.

BatCam is hosted on the NSW National Parks website. Tune in to see the bats daily. (see More information).

Grey-headed flying-fox live cam

Wingham Brush Nature Reserve

 [Open, check current alerts](#)

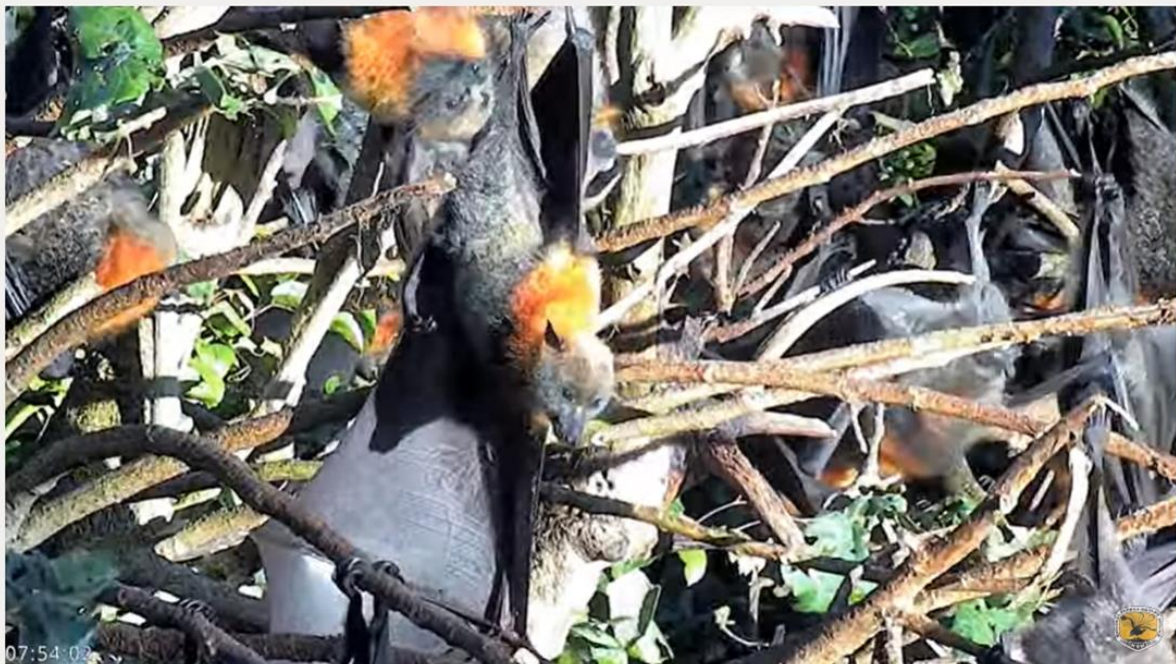


Photo 8 Screenshot from the grey-headed flying-fox (*Pteropus poliocephalus*) live cam.
Photo: DCCEEW

Fire management

High-frequency or high-severity fire threatens many threatened species including those with habitat declared as an AIS. Protecting these special areas is a key priority for NPWS, and minimising biodiversity loss during fire events starts with ensuring fire management authorities have access to the critical information they need to act quickly and effectively.

Following an AIS declaration, the spatial information is included in the systems used by all fire agencies. This allows incident management teams to quickly identify these areas and take protective actions to protect them. In addition, NPWS introduced the AIS Alerts and Notifications Tool, which alerts NPWS staff when a fire is approaching a declared AIS site, increasing awareness of real-time fire events that have the potential to impact threatened species habitat.

Understanding the vulnerability to future bushfire impacts has been a critical knowledge gap for many threatened species. To address this, NPWS engaged experts to model the effects of historical fire regimes on threatened species with habitat declared as AIS. This vulnerability analysis helps NPWS identify which AIS sites are most at risk and should be prioritised during firefighting efforts.

Consideration of threatened species is an important part of NPWS reserve and strategic bushfire planning under local Bush Fire Management Committees. NPWS works with these committees to integrate environmental values into risk management, operations coordination and emergency planning. Plans are being updated to specifically reference AIS sites through AIS fire response plans, which provide incident management teams and fire crews with clear, practical guidance to protect these sites and minimise impacts. During 2023–24 NPWS progressed AIS fire response plans for the most at-risk AIS sites and is continuing to work towards developing fire response plans for all AIS sites.

Gordon's wattle thrives

Gordon's wattle (*Acacia gordonii*) (Photo 9) is listed as endangered under Commonwealth and NSW legislation. The species is found in isolated populations within the Blue Mountains National Park where there are only about 5,000 plants across 5 populations.

Habitat for the Gordon's wattle was declared as AIS. As part of the AIS CAP, a fire response plan needed to be developed for the species.

This pre-planned informed approach is site specific and involves collaboration between fire ecologists, species experts and fire practitioners, and can be implemented to improve planning hazard reductions and wildfire response actions in the future.

Like many wattles, Gordon's wattle depends on fire for survival. Following a hazard reduction burn at the Falcon Bridge Point site using a pre-planned informed approach, the species has responded with healthy flowering plants and a restored seedbank.

Weed densities remain at 'sparse' levels in key areas of habitat, within the known populations of Gordon's wattle. Weed occurrence is monitored and mapped during species monitoring which occurs every 2 years.

In 2023–24, NPWS staff worked with the Royal Botanic Gardens on genomic studies to inform adaptive conservation management measures for the species. The findings revealed 2 distinct and unique groups. Gene flows between the 2 sub populations are restricted due to their natural isolation and long geographic separation. The studies recommended germplasm collection to secure the genetic diversity of this species. Seed from all accessible species populations are being collected to continue this important research.



Photo 9 NPWS staff inspecting Gordon's wattle (*Acacia gordonii*) in the Blue Mountains National Park. Photo: Zain Kruyer/DCCEEW

Feral predator-free areas

NPWS is establishing a network of FPFAs to enable the return of mammal species that are extinct in New South Wales or are locally extinct. Predation by feral cats and foxes is the key driver of native mammal decline and extinctions in Australia. The FPFA program aims to reintroduce more than 30 locally extinct species, including 13 species listed as extinct in New South Wales, and prevent further extinctions by protecting our most vulnerable species from the threat of predation and competition from feral animals.

This program is one of the most significant threatened fauna restoration projects in New South Wales history. These sites will reduce the extinction risk to threatened species and create a unique visitor experience by providing an opportunity for visitors to see rare and endangered native animals in the wild and free from the threat of predation by feral animals.

Working in partnership

In partnership with the Australian Wildlife Conservancy (AWC) and the University of New South Wales (UNSW Sydney), NPWS has been managing 3 FPFAs across more than 19,000 ha since 2016. The operation of these 3 sites – located at Mallee Cliffs National Park, Pilliga State Conservation Area and Sturt National Park – has led the way for the reintroduction of small- to medium-sized mammals since 2018.

The 2023–24 financial year has continued to build on previous successes and saw 3 locally extinct species – the burrowing bettong (*Bettongia lesueur*), bridled nailtail wallaby (*Onychogalea fraenata*) and western quoll (*Dasyurus geoffroii*) – reintroduced into these partnership FPFAs. The western quoll is the first native predator reintroduced as part of the program.

As a result of the partnerships projects, 12 species listed as extinct in New South Wales and the plains mouse, have been returned to NSW national parks.

Expanding our network of feral predator-free areas

Building on the success and experience of the existing FPFAs partnership projects, NPWS is working to triple the size of the current network to more than 65,000 ha of fox- and cat-free areas in NSW national parks.

NPWS is leading the planning and delivery of 4 additional FPFAs, which are in various stages of development at Yiraaldiya National Park, Yathong Nature Reserve, Ngambaa Nature Reserve and Nungatta in South East Forest National Park (Figure 4). As of 30 June 2024:

- Yiraaldiya FPFA's 56 ha Stage 1 area is complete after the construction of the conservation fence and feral predator eradication. Construction of Stage 2 is underway
- Nungatta FPFA's 240 ha Stage 1 area nested within the larger FPFA is complete, and eradication of feral animals has commenced. Stage 2 (an extra 1,840 ha) is underway
- Ngambaa FPFA's conservation fence to create a 2000 ha FPFA was close to completion, and eradication activities for feral cats, dogs and foxes were initiated
- Yathong FPFA's 8,260 ha Stage 1 area was well underway with construction of the fence commencing.

The progress at Yiraaldiya FPFA in western Sydney enabled the reintroduction of the New Holland mouse (*Pseudomys novaehollandiae*) into the Stage 1 area in the 2023–24 financial year. The New Holland mouse joins the locally extinct eastern bettong (*Bettongia gaimardi*) and koala (*Phascolarctos cinereus*) which were reintroduced in late 2022–23.

Planning is underway to carry out translocations of several more species into these areas, including the smoky mouse (*Pseudomys fumeus*), rufous bettong (*Aepyprymnus rufescens*), long-footed potoroo (*Potorous longipes*), parma wallaby (*Macropus parma*) and greater bilby (*Macrotis lagotis*).

Feral predator-free areas for rock-wallabies

Two FPFAs are being established for the protection of brush-tailed rock-wallaby (*Petrogale penicillata*) populations, which are particularly vulnerable to predation by feral cats and foxes. The 2 FPFAs will protect colonies of brush-tailed rock-wallaby in Nattai National Park (100 ha) and Warrumbungle National Park (300 ha). A third site is being established in Mutawintji National Park (3,500 ha), into which yellow-footed rock-wallabies (*Petrogale xanthopus*) will be reintroduced (Figure 4). Initially, this site will exclude feral goats which out-compete wallabies for food and shelter resources, with plans to upgrade the site to a FPFA in future.



Figure 4 A map of feral predator-free areas across New South Wales

Three species reintroduced to Yiraaldiya National Park

In 2022–23, a small subset of the FPFA in Yiraaldiya National Park was complete after the construction of a conservation fence and eradication of feral predators. This has allowed for the reintroduction of the koala (*Phascolarctos cinereus*; Photo 10), the locally extinct eastern bettong (*Bettongia gaimardi*; Photo 11) and New Holland mouse (*Pseudomys novaehollandiae*; Photo 12).

The approach for the reintroduction of each species has been similar – to initially translocate a small cohort of individuals as a trial and to determine whether Yiraaldiya FPFA has appropriate habitat and sufficient resources to support a reintroduced population.

Three koalas and 4 eastern bettongs were translocated in late 2022–23. Post-release monitoring in 2023–24 indicated all animals were healthy, had gained or maintained weight, and had improved body condition scores.

In May 2024, 18 New Holland mice were translocated to the FPFA, spending a number of weeks in soft-release enclosures, building on lessons learnt from previous rodent translocations. The use of enclosures allowed time for: animals to acclimatise and for pairs to breed, close monitoring of welfare by ecologists and reduced chance of hyperdispersal – a trait displayed by translocated rodents. Excitingly, the species displayed successful breeding, with 4 juveniles born.

The translocations of the eastern bettong and New Holland mouse are ground-breaking, both as the first of their kind in New South Wales.

With the post-release monitoring of all 3 translocations indicating Yiraaldiya FPFA has appropriate habitat and sufficient resources to support the respective species, NPWS site ecologists have been busy planning further releases to supplement the existing populations.



Photo 10 Koalas (*Phascolarctos cinereus*) are reintroduced into a small subset of the FPFA in Yiraaldiya National Park. Photo: DCCEEW



Photo 11 Eastern bettongs (*Bettongia gaimardi*) were eager to meet Yiraaldiya's newest residents, paying the New Holland mice (*Pseudomys novaehollandiae*) a visit while they were contained in their enclosures. Photo: DCCEEW

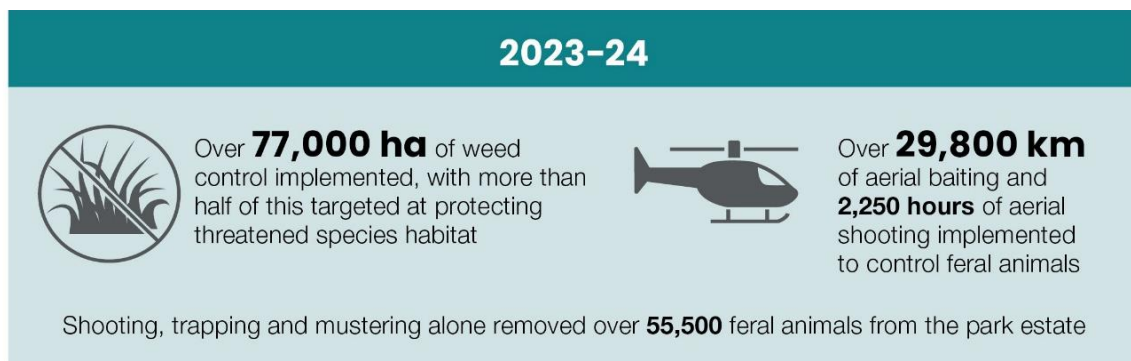


Photo 12 New Holland mouse (*Pseudomys novaehollandiae*) was translocated to Yiraaldiya National Park in May 2024. Photo: Chayton Sheargold/DCCEEW.

Feral animal and weed control

Weeds and feral animals pose some of the greatest threats to biodiversity in New South Wales, and our threatened plants and animals are particularly vulnerable. To combat these threats, NPWS delivers a large and comprehensive set of invasive species management programs guided by feral animal and weed management strategies (see [More information](#)). Many NPWS feral animal and weed control programs are designed to deliver targeted protection for threatened species. Examples include removing feral deer to protect threatened plants such as buttercup doubletail (*Diuris aequalis*) in Kanangra-Boyd National Park; baiting foxes in the Narriearra Caryapundy Swamp National Park to protect grey grasswren (*Amytornis barbatus barbatus*); and removing ox-eye daisy to protect clover glycine (*Glycine latrobeana*) in Kosciuszko National Park.

Building on the progress of previous years, significant effort went into NPWS invasive species control programs in the 2023–24 financial year, with the completion of 77,000 ha of weed control, 36,371 ha of which was directly targeted at threatened species conservation; delivery of 29,800 km of aerial baiting; 2,250 hours of aerial shooting; 30,310 ground baits; 360 ground shooting days; and 14,416 trap nights. More than 55,500 feral animals were removed from the national park estate by aerial shooting, ground shooting, mustering and trapping.



Reserve establishment and land acquisition

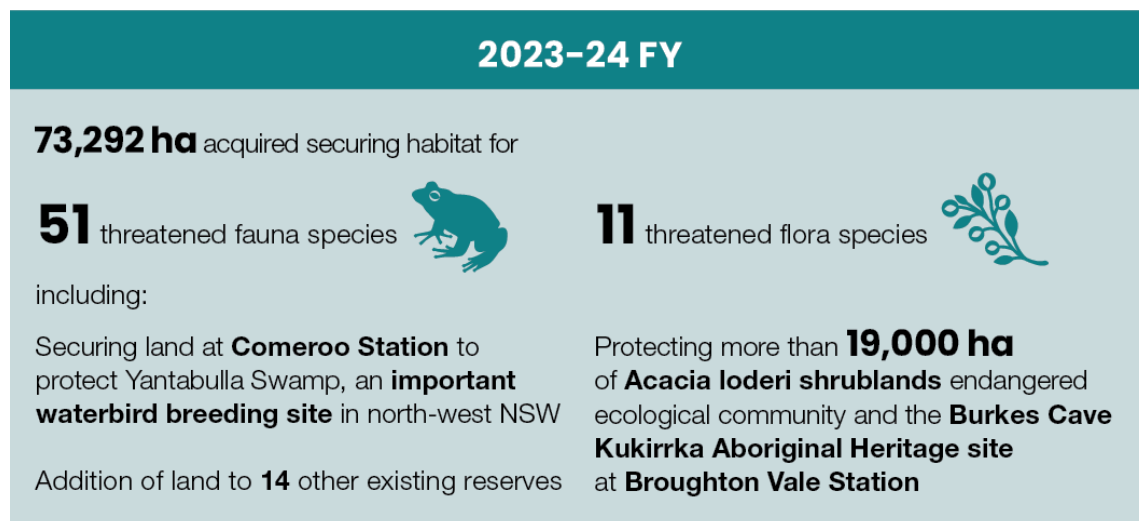
NPWS leads an active land acquisition program to establish new national parks and add land to existing reserves. This program contributes to the conservation of threatened species and ecological communities by removing the threat of habitat destruction, and actively controlling risks such as feral animals, weeds and frequent fire. The acquisition program seeks to improve habitat viability, secure threatened species populations, and provide opportunities for climate change adaptation and refugia from extreme weather events.

In the 2023–24 financial year, a total of 73,292 ha was acquired, securing habitat for at least 51 threatened animal species and 11 threatened plant species, with key transactions including:

- Comeroo Station, north-west of Bourke, which protects Yantabulla Swamp, recognised as the most important waterbird breeding site in north-west New South Wales
- Broughton Vale Station, adjoining Langidoon-Metford State Conservation Area, which protects more than 19,000 ha of the *Acacia loderi* shrublands endangered ecological community as well as the highly significant Burkes Cave Kukirka Aboriginal heritage site
- land for addition to 14 other reserves including Doodle Comer Nature Reserve, Little Llangothlin Nature Reserve, and the Butterfly Cave site near Newcastle.

The purchase of Comeroo Station protects diverse habitats including alluvial floodplains, swamps, permanent waterholes and wetlands. Three ecological communities listed as endangered cover one-third of Comeroo, and at least 13 threatened species, including the stripe-faced dunnart (*Sminthopsis macroura*), will benefit from the protected habitat. The addition fills important gaps in the national park estate by protecting landscapes and ecosystems that were severely under-represented across the national park estate.

The reserve establishment and land acquisition program will continue to target critical habitats and core areas in each bioregion that are important for the long-term survival of threatened species.



NSW Koala Strategy

NPWS has been restoring koala habitat across New South Wales from the Border Ranges in the north to the Snowy River in the south during 2023–24, totalling 5,924 ha across 58 national parks and reserves. More than 46,450 trees have been planted, 4,314 ha of weeds controlled and 4 culturally informed burns completed, as part of actions under the NSW Koala Strategy (the strategy).

A monitoring program has been established as part of the strategy to determine koala population baselines and trajectories. During the 2023–24 financial year, audio detection devices recorded koala occupancy at Bangadilly National Park, Guula Ngurra National Park, and Upper Nepean State Conservation Area, and thermal drone surveys recorded the relative abundance of koalas on NPWS estate in the southern ranges.

NPWS will continue koala surveys on NPWS estate in the North Coast into the future.

Guula Ngurra koala habitat restoration

Guula Ngurra National Park, located in Wingecarribee Shire on the Southern Highlands, has been undergoing a major transformation since it was purchased through funding from the strategy.

Guula Ngurra, which means koala country in the Gundungurra language, included large areas that had been cleared for farming. These areas and the nearby Wollondilly Nature Reserve are now being restored through the planting of 18,575 trees and shrubs in the past 2 years, including 6,400 in 2023–24. An important component of the restoration has been the control of weeds such as blackberry and serrated tussock over a 200-ha area.

The reserve's restoration has been undertaken through strong partnerships with the Gundungurra traditional owners, Mullyang Bushcare Group, park neighbours and volunteers, and restoration funding and support through the NSW Koala Strategy and Australian Government. Plantings in the reserve (Photo 13) will have major benefits to koalas and the 138 other fauna species recorded in the reserve, including 22 listed as threatened.



Photo 13 Guula Ngurra planting day. Photo: Veronica Quintanilla-Berjon/DCCEEW

Saving our Species

Projects funded from the SoS program have contributed to the management of 154 threatened species, 4 key threatening process projects and 9 threatened ecological community projects on the national park estate.

The ongoing support from the SoS program, and collaboration with staff in the department's Conservation Programs, Heritage & Regulation Division as well as external SoS partners, is vital to the management of threatened species on the national park estate, as part of a broader landscape-scale approach to the restoration of species.

Regent honeyeater breeding success in Capertee National Park

In 2023–24, a successful breeding event occurred, with nest success reaching levels not seen before regent honeyeaters (*Anthochaera Phrygia*) (Photo 14) were listed as critically endangered. Nest success was attributed to effective control of competitors, predators and tree collaring.

A zoo-bred female released in the Hunter Valley in 2021 was observed paired with a wild male bird and successfully hatched 3 chicks. A second zoo-bred female was spotted with a wild-born partner in the Upper Hunter and a third zoo-bred female paired with a wild male in the Capertee Valley was seen twice before moving on, away from the monitoring team's survey sites.

Overall, there were a minimum of 39 birds recorded, which included 21 adults and 18 fledglings produced from about 15 nests. With as few as 250 to 300 regent honeyeaters estimated to remain in the wild, every successful breeding event is critical.

To make the most of the breeding event, 14 zoo-bred birds were released along the Capertee River not far from some of the breeding wild birds. The aim of this was to encourage integration of zoo birds into the wild breeding flock. While released birds were not observed breeding, they did interact with wild birds and remained in the region before all regent honeyeaters dispersed towards winter feeding regions.

Funding through the SoS program facilitates threat management activities which restore and rehabilitate native habitat.

The regent honeyeater program is a partnership between the SoS program, BirdLife Australia and Taronga Conservation Society Australia, with support from NPWS, Local Land Services and the Australian National University.



Photo 14 Regent honeyeater (*Anthochaera phrygia*). Photo: Stuart Cohen/DCCEEW

Ecological Health Performance Scorecards

The NPWS Ecological Health Performance Scorecards program (scorecards) is a world-leading ecological health monitoring and reporting program. Using a consistent monitoring framework, the program aims to increase our understanding of the ecological health of NSW national parks to improve conservation outcomes. The scorecards report on multiple ecological indicators, including threatened and declining species, ecological processes, ecological threats (for example, feral animals and weeds) and fire impacts. This information informs on-park management decision-making and contributes to positive conservation outcomes.

The program includes 8 national park aggregates (Figure 5) that undertake park-wide surveillance monitoring, supplemented by more targeted monitoring for indicator species or threats. The program measures and reports on distribution and population metrics for a range of threatened species including the koala, greater glider, forest owl, spotted-tailed quoll (*Dasyurus maculatus*), pilotbird (*Pycnoptilus floccosus*), grey grasswren, eastern pygmy possum (*Cercartetus nanus*) and many other threatened reptile, amphibian and plant species.

In the 2023–24 financial year, data was obtained from 87 sites at Pilliga-Warrumbungles covering 223,394 ha. In early 2024, data collection was completed for 68 sites in the Great Divide Northern Forests covering more than 243,700 ha. Planning and site stratification was also completed for the Greater Blue Mountains site, covering about 842,388 ha.

The first scorecards for the Kosciuszko and Royal-Heathcote-Garawarra sites were published in 2024. They used data collected between 2022 and 2023 from 100 sites in Kosciuszko National Park and 40 sites across Royal National Park, Heathcote National Park and Garawarra State Conservation Area. These reports are available on the department's website.

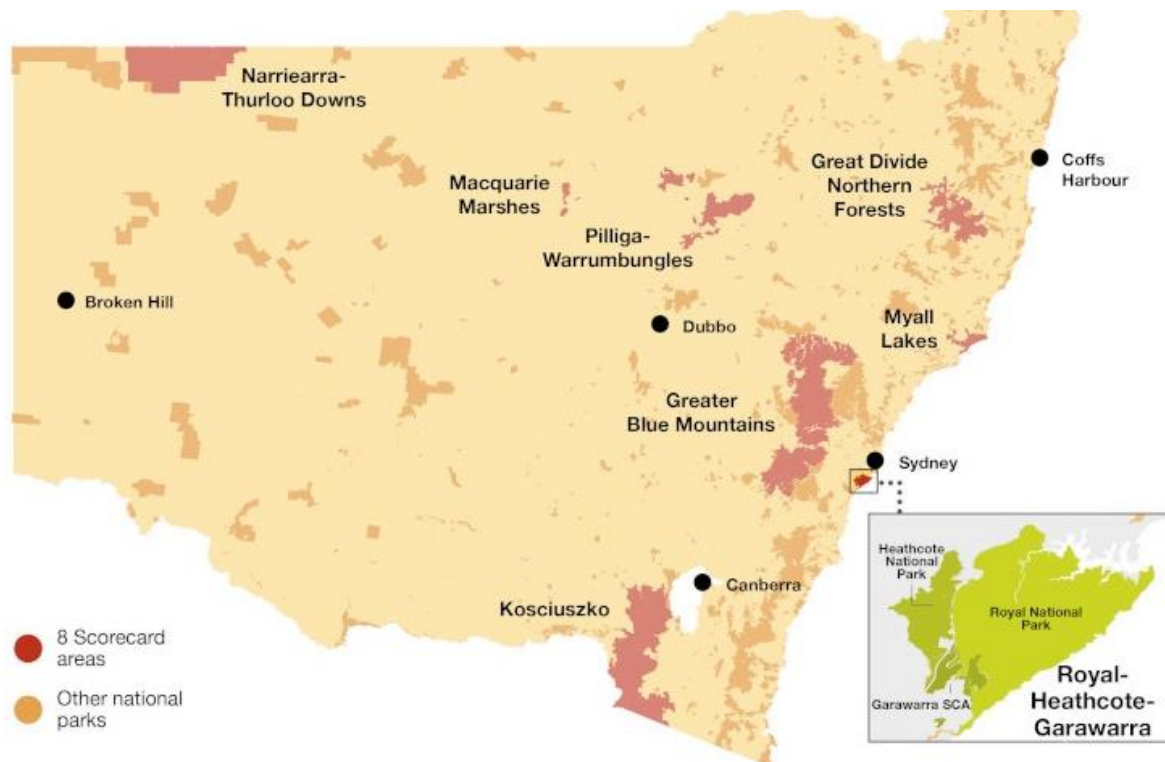


Figure 5 Map showing 8 areas of NSW national parks with Ecological Health Performance Scorecards

Achieving zero extinctions into the future

Through implementing the Threatened Species Framework (the Framework), NPWS will contribute to a renewed global commitment to prevent extinctions and promote the restoration of biodiversity. The table below identifies our commitments to achieve the objectives of this Framework.

Table 3 **Commitments to achieving the 8 framework actions**

No.	Framework action	Our commitments
1.	Establish and maintain an inventory of threatened species on the national park estate	• Maintain the existing inventory through regular data maintenance. • Improve the validity and accuracy of the inventory by implementing the second stage of data improvements.
2.	Map the on-park distribution of each threatened species	• Initiate additional mapping and modelling for threatened species, as required, to further refine the number of threatened species represented on-park and their distributions. • Distinguish between species with discrete populations on-park and widespread or landscape species, to determine appropriate management plans.
3.	Declare and manage important habitat as Assets of Intergenerational Significance (AIS)	• Commence a review of existing AIS sites to ensure data collected since the original declarations is captured and informs any necessary boundary amendments. • Undertake a risk assessment to identify those threatened species on the national park estate that are at greatest risk of extinction, to inform additional declarations of AIS.
4.	Improve the integration of threatened species objectives in the design and delivery of landscape-scale park management actions and in land acquisition decisions	• Continue delivering effective landscape-scale management actions that integrate threatened species considerations, in particular: ○ integration of threatened species requirements into fire planning and response systems ○ continued delivery of strategic feral animal and weed control programs ○ continued development of our network of feral predator-free areas to deliver significant benefits for threatened species populations. • Continue the expansion of the national park reserve system to protect additional threatened species habitat, considering underrepresented species and ecosystems.
5.	Report against targets	• Develop a standardised threatened species monitoring protocol to ensure consistency in threatened species monitoring across the national park estate. • Review existing monitoring data to identify gaps and improve data quality over time, in accordance with the protocols. • Expand monitoring to increase the number of species with reliable population trend and trajectory data. • Establish baseline population data for species with existing estimates to support long-term trend analysis.

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No.	Framework action	Our commitments
6.	Integrate activities with Saving our Species, Koala Strategy and other programs	• Continue to work in partnership to deliver the NSW Government's Saving our Species program on-park. • Continue to prioritise and implement feral animal and weed management at key sites for threatened species. • Ensure species monitoring under this Framework is integrated with the NPWS Ecological Health Performance Scorecards program.
7.	Deliver NPWS threatened species research strategy	• Develop and implement a long-term threatened species research strategy for national parks.
8.	Implement a data management plan	• Support the integration of threatened species data into the NPWS centralised data platform to streamline analysis and reporting. • Continue collaborating with stakeholders to strengthen data management, storage, and sharing practices.

More information

All links are to the NSW Department of Climate Change, Energy, the Environment and Water's Environment and Heritage website unless otherwise noted.

[Feral animal and weed management strategies](#)

[NSW BioNet Atlas](#)

[NPWS Assets of Intergenerational Significance interactive map](#)

[NPWS grey-headed flying-fox live cam](#)

[Ecological health performance scorecards program](#)

[Zero extinctions – national parks as a stronghold for threatened species recovery: National Parks and Wildlife Service Threatened Species Framework September 2021](#)

NSW Environment Protection Authority, [NSW State of the Environment report](#)

[Sensitive species data policy](#)

Australian Government, Department of Climate Change, Energy, the Environment and Water, [Threatened species action plan 2022–2032](#)

[Threatened species data trends report](#), PowerBI app



The NSW National Parks and Wildlife Service acknowledges those who have contributed to this report. Thank you for your commitment to helping threatened species thrive in our NSW national parks and reserves.

Eastern ground parrot (*Pezoporus wallicus wallicus*). Photo: Lachlan Hall/DCCEEW