



NSW Koala Strategy

Towards doubling the number of koalas
in New South Wales by 2050

The NSW Government acknowledges and respects past, present and emerging Traditional Custodians and Elders, across all lands to which this koala strategy applies. The NSW Government recognises and respects the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander Peoples.



Acknowledgments

Acknowledgment of Country

The development of this koala strategy acknowledges more than 60,000 years of continuous Aboriginal connection to the land that makes up New South Wales.

Aboriginal knowledge and management of the land are based on deep spiritual connections with Country. Country takes in everything within the physical, cultural and spiritual landscape – landforms, waters, air, trees, rocks, plants, animals, foods, medicines, minerals, stories and special places. It includes cultural practice, kinship, knowledge, songs, stories and art, as well as spiritual beings and people: past, present and future.

As part of the world's oldest living culture, Aboriginal and Torres Strait Islander Traditional Owners and Custodians of the Australian continent and adjacent islands share a unique bond to Country – a bond forged through thousands of years of travelling across lands and waterways for ceremony, religion, trading and seasonal migration.

Koalas as part of Aboriginal culture

Many Aboriginal cultures have a strong connection to koalas and their habitat. Aboriginal knowledge of the land and its management is based on deep spiritual connections with Country. This knowledge is often referred to as traditional ecological knowledge or Indigenous knowledge.

Koalas are totems of Aboriginal clans, family groups or individuals in New South Wales, such as the Gumbaynggirr People of the Mid North Coast, Birpai of Port Macquarie, and Awabakal of the Hunter Region. Each clan is responsible for the stewardship of their totem, ensuring responsible management of resources and the land to support koala habitat. Stories of the koala are also deeply woven into many different Aboriginal songlines and Dreaming stories.

This strategy values the koala as an important cultural feature of the New South Wales landscape and recognises the importance of embedding Aboriginal cultural knowledge in all aspects of koala conservation and management. Aboriginal people's significant and continuing connection to Country, and the ongoing custodianship of the koala, have played an important part in shaping this document.

This strategy recognises Aboriginal communities have a strong role to play in ensuring the long-term health of koalas and their habitat. Lessons from thousands of years of Aboriginal land management will be applied to achieve the 30-year goal.

Chief Scientist and Engineer, and expert panel

The development of the NSW Koala Strategy has been guided by an independent Koala Strategy Expert Panel chaired by the Deputy NSW Chief Scientist and Engineer, with support from many subject matter experts. These experts have provided valuable advice and knowledge, which have informed this strategy.

Foreword



It is hard to think of a more iconic or quintessentially Australian species than the koala.

Koalas are recognised the world over. They are valued as an exemplar of our unique wildlife, by Aboriginal communities as a totem and symbol of a deep connection to Country, and as a drawcard for visitors to our shores.

It is unimaginable to think of NSW without koalas. Yet we know their populations have been in decline due to loss of habitat, climate change and disease.

The devastating 2019–20 bushfires compounded the impact of these persistent threats and resulted in the loss of 22 per cent of high and very high suitability habitat in eastern NSW.

A 2020 inquiry into NSW koala populations and habitat found that without action, koalas in NSW could be extinct by 2050.

This call for action is why the NSW Government has committed to doubling koala numbers by 2050 and this strategy is our roadmap, underpinned by \$193.3 million for the first five years.

To ensure this goal is grounded in science, the NSW Government asked the NSW Chief Scientist and Engineer to assemble an expert panel to provide advice.

Their advice and knowledge have informed this strategy and the continued guidance of the nation's leading scientists will be critical to its success.

The NSW Government is taking action, and this strategy delivers a significant new investment in koala conservation, building on the first NSW Koala Strategy (2018–21) and targeting efforts to where they will deliver the most effective outcomes.

That includes protecting and conserving koala habitat, improving the health and safety of koalas, supporting communities to conserve koalas, and expanding our knowledge of them.

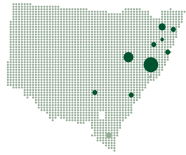
Ultimately, ensuring this Australian icon survives and thrives requires strong partnerships, and strong contributions from land managers, local councils, wildlife carers and citizen scientists, in collaboration with the NSW Government.

If we stay focused on this shared goal, we can achieve it together and koalas will continue to be a great Australian icon for generations to come.

The Hon. James Griffin, MP
Minister for Environment and Heritage

Key koala conservation targets by the end of 2026

Koala habitat conservation in NSW



22,000 ha of koala habitat protected



25,000 ha of koala habitat restored



1 Area of Outstanding Biodiversity Value and 20 Assets of Intergenerational Significance for koalas secured

Supporting local communities to conserve koalas



Up to 8 regional partnerships with Aboriginal communities, local councils and conservation groups



10 koala stronghold areas better secured



10+ councils supported to develop koala habitat maps

Improving the safety and health of koalas



At least 10 vehicle strike hotspots addressed



Up to 8 translocation projects implemented



500+ vets and vet nurses to receive wildlife care training

Building our knowledge of koalas



Baseline surveys in up to 50 populations



An ongoing monitoring program with 20+ population monitoring sites



6+ disease monitoring sites established



Map koala genetic diversity to fill knowledge gaps



Continue research in areas of key knowledge gaps



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What will be delivered by this strategy?

The NSW Government is investing \$193.3 million over 5 years towards doubling koala numbers in New South Wales by 2050.

This updated Koala Strategy builds on the first koala strategy to deliver investment and action under 4 pillars (Figure 1), with key deliverables identified for each pillar.

The actions work together to secure important koala habitat, reduce threats, and engage communities and local expertise to deliver koala conservation works across New South Wales.

These actions build on the strong foundation and investment of \$44.7 million in the NSW Koala Strategy 2018–21.

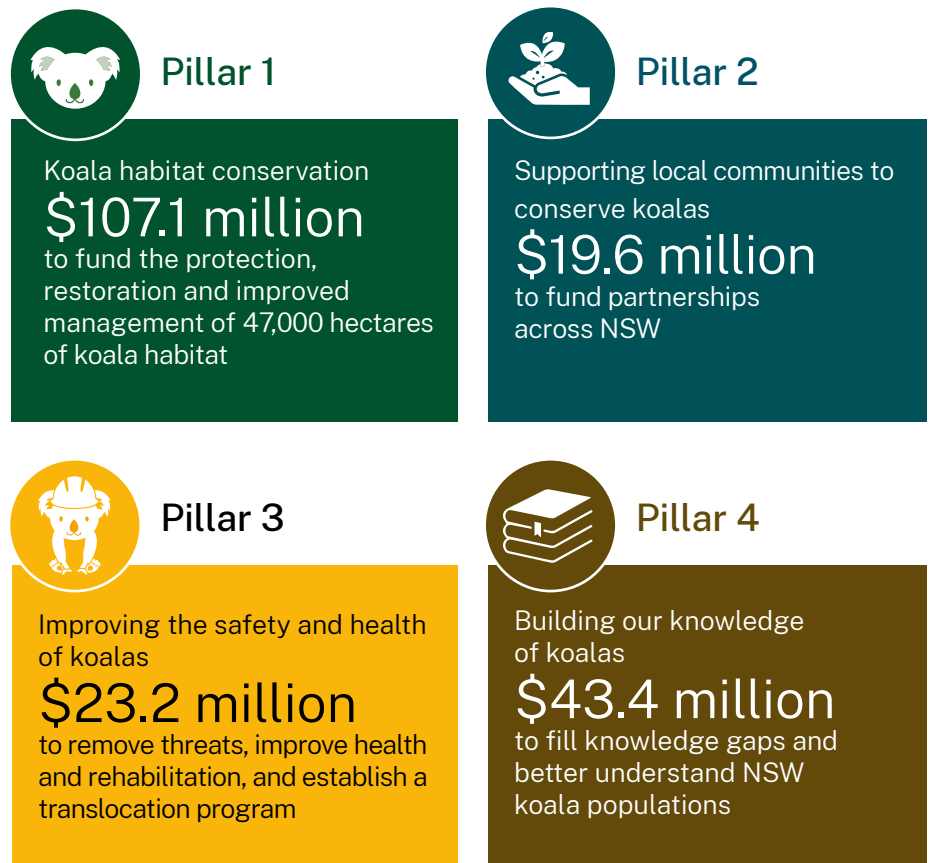


Figure 1 Koala strategy pillars



Why are we here?

Koalas in New South Wales face an uncertain future.

Koalas and their ancestors have lived in this country for millions of years and have coexisted with Aboriginal people for at least the past 60,000 years. Koalas are an iconic native species in Australia, a drawcard for international tourists and of strong cultural importance for the people of New South Wales.

Due to historical declines, koalas have been listed as a vulnerable species in New South Wales since 1992. The combined populations of New South Wales, Queensland and the Australian Capital Territory were listed as endangered by the Australian Government in February 2022.

The wild koala population in New South Wales is now at a critical point. The 2020 inquiry into NSW koala populations and habitat concluded that without action, koalas in New South Wales could be extinct by 2050 (NSW Parliament, 2020). They face increasing and cumulative threats from habitat loss and fragmentation, and climate change leading to more intense and frequent heatwaves, drought and bushfires. These landscape-scale threats are exacerbated by the impacts of local threats, such as vehicle strike, dog attack and disease (OCSE 2016).

The 2019–20 bushfires resulted in a further sudden and significant loss of remaining populations and habitat. The 2020 inquiry heard evidence that estimated at least 5,000 koalas (about 17% of the population) died during the fires (NSW Parliament 2020).

More than 1.9 million hectares, or 22% of the modelled high or very high suitability koala habitat in eastern New South Wales, was impacted by the fires.

Impacts varied across the state. For example, on the South Coast over half the region's best koala habitat was affected by moderate to extreme fire severity whereas in the Central Coast region that figure was less than 10% (DPIE 2021 p.41).

In February 2021, the NSW Government released the NSW Wildlife and Conservation Bushfire Recovery: Medium-term response plan. The plan outlines the actions that will be taken over the next 5 years to support biodiversity recovery and build the resilience of our natural environment to future fires and other threats.



The need for action

Urgent intervention is required to reverse the decline of koalas in New South Wales.

Failure to invest in long-term koala conservation now will result in more difficult and expensive measures to arrest further decline and possible extinction in the future.

Koalas need habitat that occurs in well-connected and resilient landscapes to allow koalas to move safely and for food, shelter and breeding. Ensuring we have sufficient habitat for koalas across tenures and delivering actions under the 4 pillars outlined in this Strategy will help to ensure their future.

If koalas are thriving, so are many other species. For this reason, koalas are considered an umbrella species (Ward et al. 2020). By investing in and protecting koalas and their habitat, conservation outcomes for many other species also begin to improve.

From a cultural perspective, further decline or extinction of local koala populations can have a direct impact on Aboriginal people and their culture. The loss of a species like the koala can result in the loss of clan storylines and the rich traditions associated with those stories.



Achievements of the Koala Strategy 2018–21

The NSW Koala Strategy 2018–21 comprised a \$44.7-million investment over 3 years to stabilise NSW koala populations. The strategy has delivered tangible results, including:

- adding over 6,270 hectares of koala habitat to the national park estate, with more underway
- 8,975 hectares of state forest set aside for koalas and another 8,398 hectares in progress
- protecting 2,834 hectares of koala habitat on private land through conservation agreements
- investing more than \$3.5 million at 4 priority vehicle strike hotspots across New South Wales, including installing fencing on Picton Road in south-west Sydney to protect koalas from vehicle strike
- funding 73 on-ground local projects to reduce threats and improve outcomes for koalas
- funding 8 Aboriginal community projects to develop knowledge and skills on protecting koala habitat
- establishing major regional koala conservation partnerships in the Northern Rivers, Hastings-Macleay, Northern Tablelands and Southern Highlands regions
- launching the NSW Koala Country website to connect communities and organisations working on koala conservation
- partnering with Taronga Conservation Society Australia to develop and deliver a world-class professional development course for more than 280 vets and vet nurses in wildlife care
- strengthening a network of wildlife hospitals, with Port Stephens koala hospital officially opening in September 2020
- improving our understanding of koala populations in New South Wales, including:
 - delivering a Koala Habitat Information Base to inform conservation decisions
 - releasing a 10-year koala research plan to fill knowledge gaps and funding 10 research projects
 - running a statewide community wildlife survey
 - developing the NSW Koala Monitoring Framework to build up information on koala population trends, habitat, genetic diversity, disease, reproduction and threats over time.



Where we are going?

Purpose of the NSW Koala Strategy

The NSW Government has set an ambitious goal to double the number of koalas in New South Wales by 2050.

This Koala Strategy sets out the actions for the next 5 years to achieve the long-term goal of doubling koala numbers by 2050.

The strategy responds to the findings of the Legislative Council inquiry into koala populations and their habitat. The committee, which handed down its report in June 2020, found that without urgent government intervention to protect habitat and address all other threats, koalas will become extinct in New South Wales by 2050.

The NSW Government response to the inquiry was tabled on 23 December 2020. The response identifies this NSW Koala Strategy as the NSW Government's flagship strategy for responding to the inquiry's findings of declining koala populations.

Over the course of the next 30 years, continued investment and action will be required to double koala numbers.

A series of 5-year strategies will be developed to guide that work.

Growing koala numbers

Koalas are hard to count because they are difficult to detect in the wild and there are varying methods for counting them. At the time of writing, the number of koalas in New South Wales is unknown, with estimates varying from 15,000 to 30,000 (NSW Parliament 2020 p.2). This strategy assumes a conservative population estimate of 20,000 koalas in New South Wales in 2020.

To grow the number of koalas, high-quality connected habitat is needed to support them. Based on expert estimates of the area of land koalas need to survive and breed, an additional 100,000 hectares of secure, well-connected habitat with appropriate densities of feed trees will be needed to support an additional 20,000 koalas by 2050 (see breakout box for details).

The NSW Government, therefore, adopts a target to secure, restore or create an additional 100,000 hectares of koala habitat over the next 30 years.

This strategy will take the first step towards reaching this target by protecting and restoring 47,000 hectares of koala habitat.

How much habitat does a koala need?

Estimates of koala habitat carrying capacity range from ~0.05 koalas/ha in areas of poor-quality habitat with few koala feed trees (Phillips & Forsman 2005) to ~0.63 koalas/ha in areas of good quality habitat (Biolink 2016, 2020; DPIE 2019).

New South Wales is aiming to grow our koala population by 20,000 koalas to reach our goal of 40,000 koalas by 2050.

Assuming a conservative average of 0.2 koalas/ha, we must therefore protect or restore at least an additional 100,000 ha of koala habitat over the next 30 years and protect existing habitat.

Figure 2 shows how a focus on protecting, restoring or creating habitat will allow New South Wales to support the targeted increase in our koala population to 40,000 over the next 30 years. These habitat conservation actions are supplemented by other actions in this Strategy that collectively work towards delivering our goal of doubling koala numbers.

To support another
20,000 koalas
we need to secure, restore
or create an additional
100,000 ha of habitat

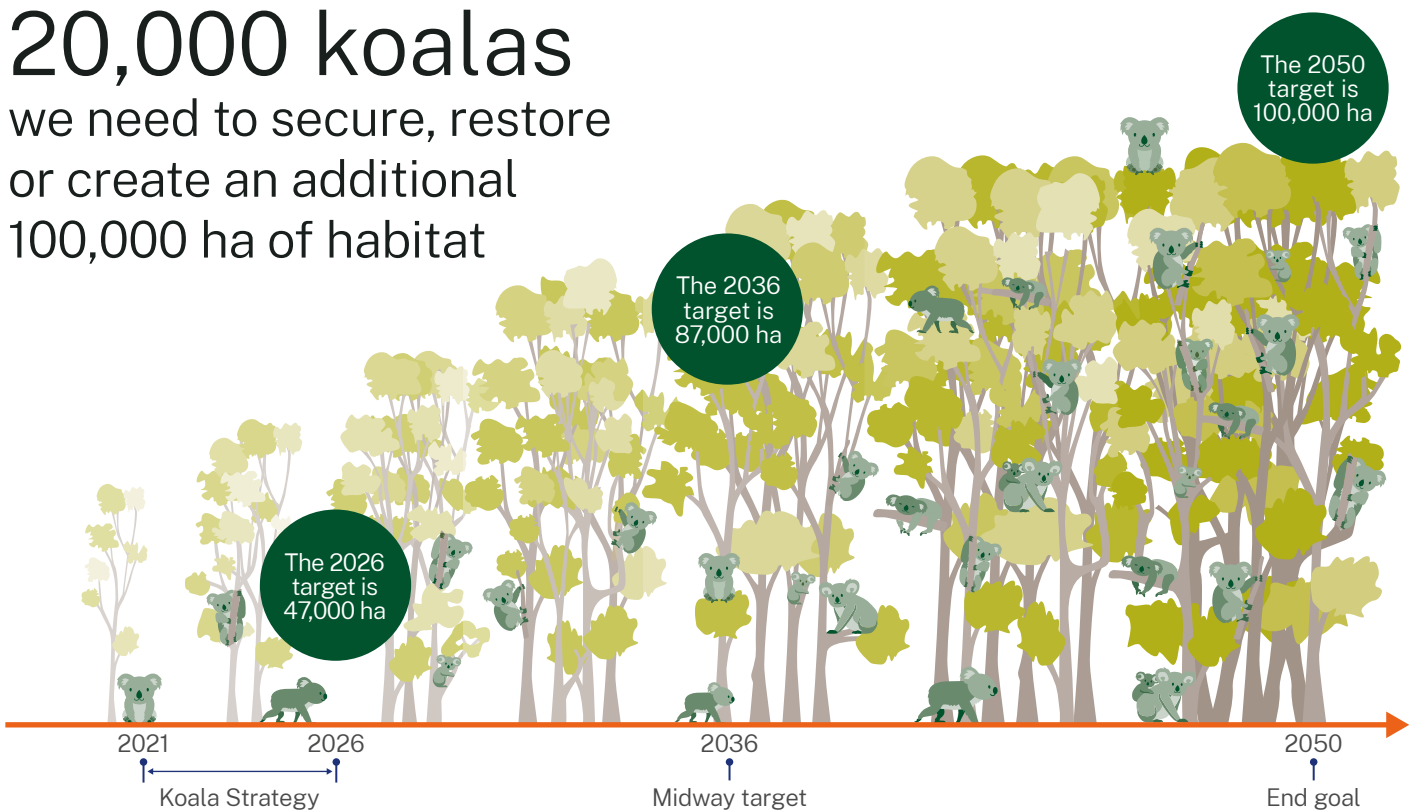


Figure 2 Target area of new and protected koala habitat required to support 40,000 koalas



Categorising koala populations for action

The strategy targets investment in priority koala populations.

This strategy identifies 50 koala populations in New South Wales based on the Areas of Regional Koala Significance (ARKS) identified by the NSW Government (DPIE 2018, 2020), noting that koalas are also found outside these areas.

These 50 koala populations have been prioritised in 2 intervention categories:

- populations for immediate investment (Figure 3)
- populations with key knowledge gaps (Figure 5).



Populations for immediate investment

These are large koala populations supported by good levels of knowledge but subject to significant threats

Over the course of this strategy, investment and conservation action will focus on the 19 koala populations identified in Figure 3. Based on ARKS and using expert input, these populations have been prioritised because we have a good understanding of their size and distribution, habitat values and the nature and intensity of threats. Through investment and the right management, we can reduce the threats to these koala populations.

Targeted investment will include protecting and restoring habitat and mitigating threats such as vehicle strike and dog attack. This will help secure these populations and create the right conditions for koala breeding and dispersal.

Regional partnerships will be established in some of these areas to incorporate local expertise and ensure on-ground actions are delivered in a strategic way.

These populations will be subject to population assessments and ongoing monitoring to determine the effectiveness of management actions.

Many of these populations likely support a minimum of 1,000 individuals, and in some cases, they may support many more.

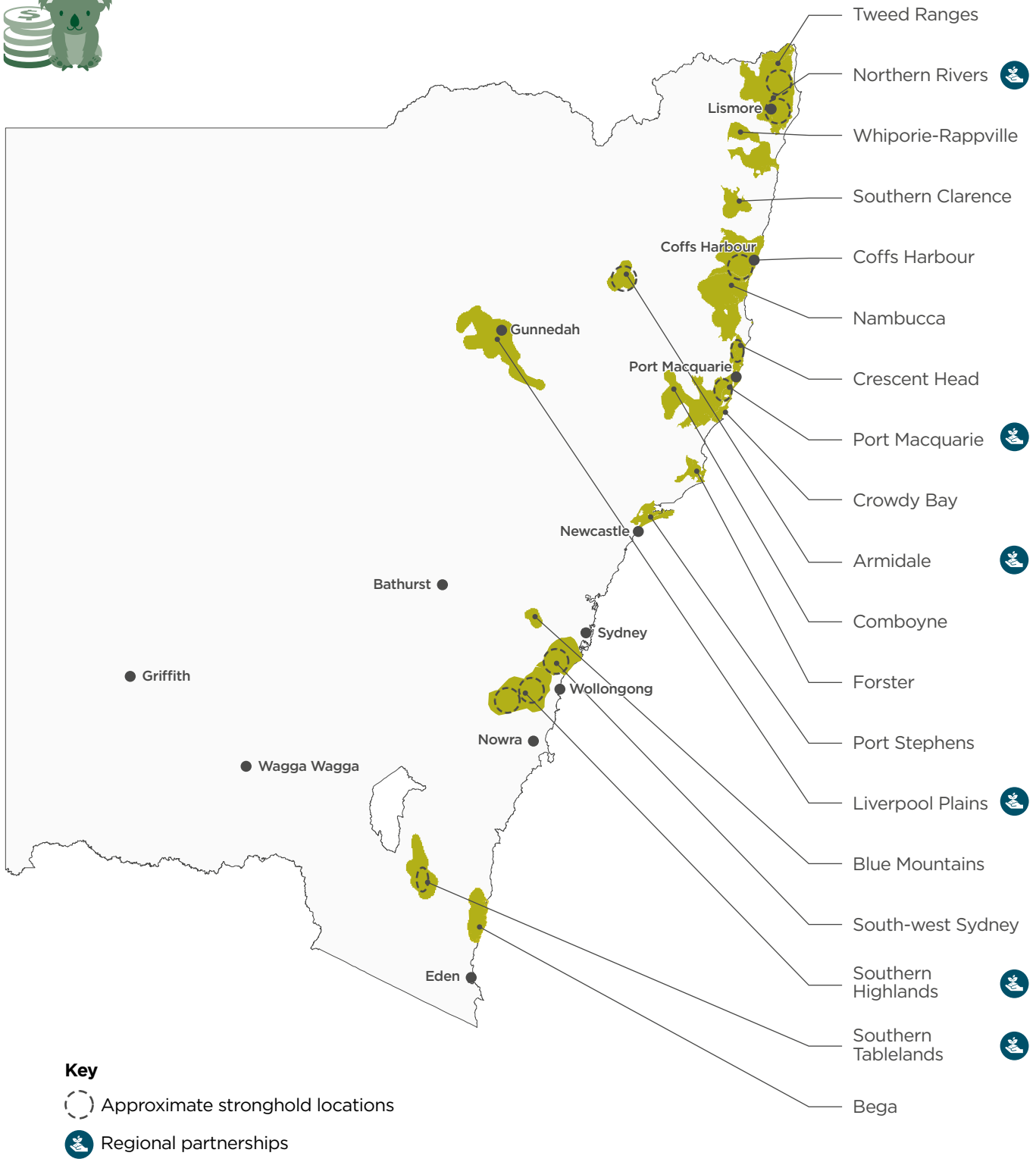


Figure 3 Locations of 19 populations for immediate investment and 6 regional partnerships, and indicative locations of koala strongholds. Two more partnerships will be identified as the strategy progresses.



Investing in strongholds for koalas to thrive

Ten focus areas have been identified by experts within ‘populations for immediate investment’ where there are important koala populations that will benefit from more intensive investment and action. These areas, dubbed koala strongholds (Figure 3), represent koala populations that are significant in some respect. Some of these strongholds support very large populations of koalas. Others represent areas that are likely to be important refuge areas from the impacts of climate change in the coming decades.

Taking strategic action in stronghold areas to reduce major threats and improve available habitat will ensure some of our most significant koala populations can be better secured in the short-term.

The 10 strongholds for intensive action under this strategy (Figure 3) are:

- North East
- Northern Rivers
- Coffs Harbour
- Armidale
- Crescent Head
- Port Macquarie
- Southern Highlands (1)
- Southern Highlands (2)
- South-west Sydney
- Southern Tablelands.

Actions for stronghold areas

Stronghold areas will be the focus of intensive intervention and investment to mitigate threats. The types of actions we will use to secure stronghold areas are shown in Figure 4.



Figure 4 Creating conditions for koalas to thrive in stronghold areas



Populations to fill key knowledge gaps and deliver local actions

For the remaining 31 koala populations (Figure 5), we will address knowledge gaps through a baseline survey program to assess their population status, genetics, and health.

Some information is known about these koala populations, however, in places there are major gaps in our knowledge.

In some populations, interventions to reduce threats, improve habitat and support population viability will be carried out once the key threats have been identified and assessed.

Some populations will also benefit from local, community-based actions, improved local planning processes and research about koalas and their habitat.

In addition to the initial surveys, for some of these populations we will use ongoing monitoring to track population trends and measure the effectiveness of interventions.

The intervention category of koala populations may change over time. Populations can move between categories as knowledge is improved, or populations are made more secure through strategic interventions.



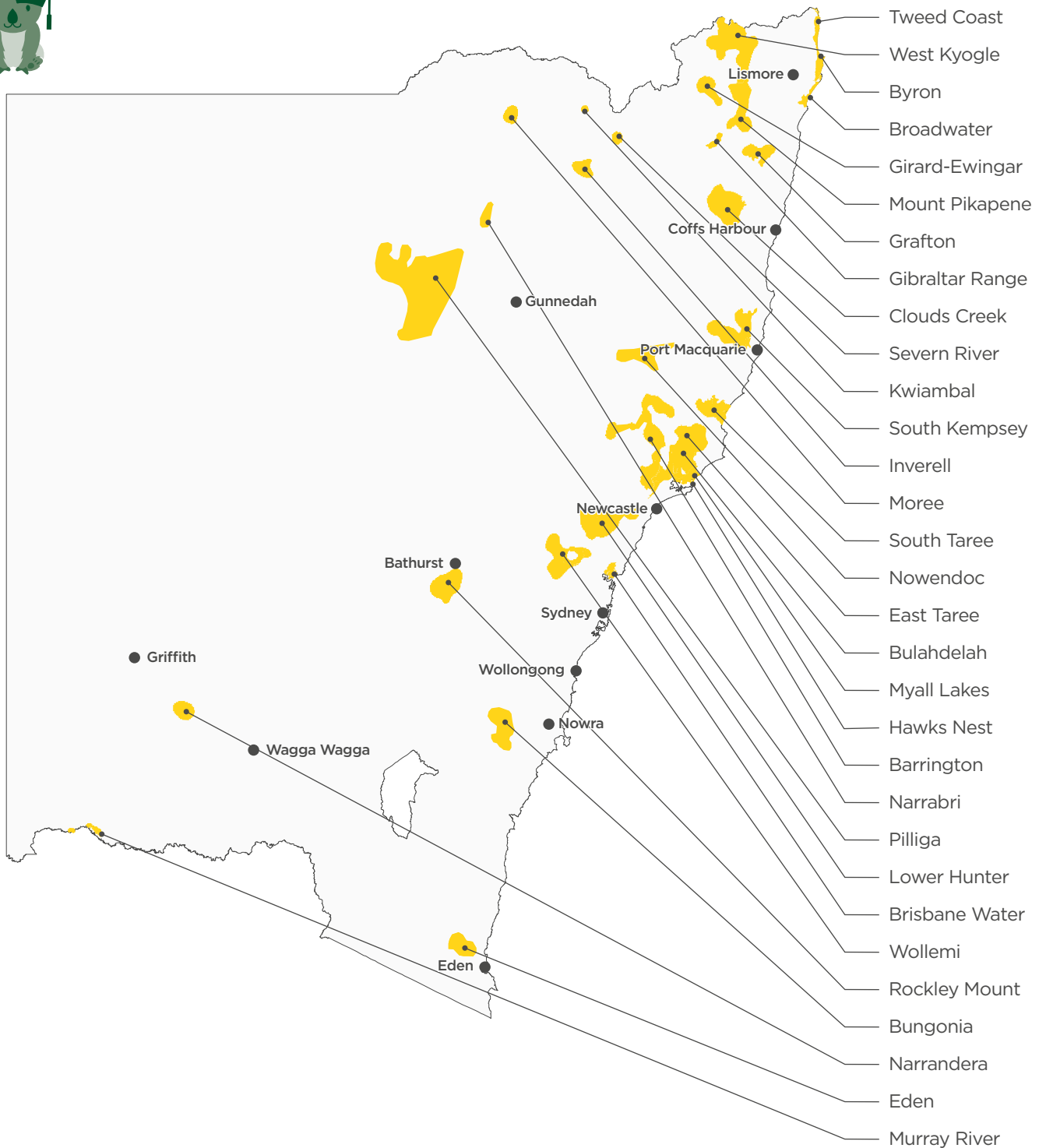


Figure 5 Populations prioritised for filling key knowledge gaps and delivering local actions

Koala Strategy actions and targets



Pillar 1 actions

Conserving koala habitat as national parks
Partnering with landholders to protect koala habitat
Retiring biodiversity credits
Restoring koala habitat
Coordinating habitat restoration
Driving investment through premium carbon markets
Restoring and rewilding koala landscapes
Land-use planning initiatives
Area of outstanding biodiversity value for koalas
Private sector engagement for koala habitat conservation and restoration
Assets of intergenerational significance for koalas

Pillar 1 – Koala habitat conservation

The NSW Government will invest \$107.1 million over 5 years to mitigate impacts from habitat loss and climate change and to protect, restore and improve the condition of 47,000 hectares of koala habitat.

Habitat loss and climate change are the most serious threats to koala populations. To double koala numbers, significant increases in koala habitat area and condition are needed.

Key investments under this pillar include:

- \$50.3 million to purchase high-quality koala habitat on private land to add to the national park estate.



Target: up to 15,000 ha

- \$20.3 million to permanently protect koala habitat on private land through the Biodiversity Conservation Trust’s Conservation Partners Program and in-perpetuity conservation agreements with annual payments to private landholders. Landholders will also be able to access existing grant programs to fund essential management activities like weeding and fencing. Private land conservation activities will be targeted towards stronghold areas.



Target: 7,000 ha

- \$15.5 million to purchase seedlings and coordinate the restoration of koala habitat across New South Wales, including natural regeneration and direct planting, and to work with private sector partners to deliver ground-breaking premium carbon market projects.



Target: 20,000 ha

- \$16 million to deliver a landscape-scale restoration project in partnership with Taronga Conservation Society Australia. Over 10 years, the project will establish the largest box-gum woodland restoration and rewilding project ever attempted, creating climate change-resilient habitat for koalas and other threatened species. By 2026, the land will be purchased and restoration works will have commenced.



Target: 5,000 ha

- \$5 million to leverage private sector investment in koala conservation.



Target: Leverage at least a fivefold investment from the private sector

The full range of actions under Pillar 1 is provided in the table at the end of the strategy.



Partnership with WWF-Australia

Supporting landholders in enhanced private land conservation for koala habitat is crucial. The NSW Government will partner with WWF-Australia (WWF) to identify, incentivise and prepare landholders with koala habitat to participate in the Biodiversity Conservation Trust's Conservation Partners Program.

As a first-stage priority, the partnership with WWF will seek to secure 500 hectares of koala habitat on private land in the Northern Rivers Region in conservation agreements over 3 years.

The partnership will explore initiatives to achieve greater koala conservation outcomes with strong landholder engagement, land restoration, cultural burning, and weed control, and by enhancing habitat connectivity.

Second-stage opportunities in this partnership will aim to expand the enhanced private land conservation model into other koala strongholds.

This partnership will amplify our investment, leverage existing initiatives, and target effort where it has the most impact. Strong cooperation is needed now to ensure we achieve the shared outcome of protecting koalas in New South Wales.



Pillar 2 actions

Partnering with regional and Aboriginal experts to deliver on-ground actions

Engaging the community

Supporting councils to deliver koala habitat maps

Partnering with the Australian Government and other states

Working with landholders

Increasing engagement of schools and local community groups

Partnering to educate landholders

Partnering with the private sector

Pillar 2 – Supporting local communities to conserve koalas

Effective koala conservation requires collective action. Recognising the important role of local and cultural knowledge, the strategy will invest \$19.6 million over 5 years in partnerships across New South Wales.

Through the NSW Koala Strategy 2018–21, the NSW Government has built strong partnerships to deliver koala conservation actions with local councils, Local Land Services, land managers, koala rehabilitators, community organisations, local Aboriginal groups, communities, business and industry and the research sector.

The next phase will build on the success of these partnerships and continue to recognise the important role of local and cultural knowledge in conserving local koala populations.

The partnerships will leverage local expertise and knowledge to prioritise investment and deliver coordinated strategic on-ground actions to protect koalas and their habitat. Partnerships will also be a vehicle for leveraging private sector investment in koala conservation.

Key investments under this pillar include:

- \$15.7 million for regional partnerships with local councils, conservation groups and Aboriginal communities to deliver coordinated on-ground actions informed by community expertise.



Target: Up to 8 regional partnerships including the Northern Rivers, Port Macquarie, Northern Tablelands, Southern Highlands, Liverpool Plains and Southern Tablelands regions

- \$3.9 million to deliver rigorous on-ground ecological assessments and appropriate community consultation to develop koala habitat maps using the Koala Habitat Information Base developed through Koala Strategy 2018-21, so councils can strategically conserve koala habitat in their local area.



Target: 10+ local councils engaged and provided with support to develop koala habitat maps

The full range of actions under Pillar 2 is provided in the table at the end of the strategy.

Partnering with the Country Women's Association of NSW

A priority of this strategy is to explore new ways to encourage landholders to protect koala habitat on their land while maintaining agricultural production values. Engaging with and empowering landholders to protect koalas and habitat on private lands, through a trusted community partner, will help to deliver exceptional outcomes that cannot be achieved alone.

The NSW Government will partner with the Country Women's Association of New South Wales (CWA of NSW) to work together to communicate and engage members and their communities in conserving koala trees in working agricultural landscapes. CWA of NSW is one of the State's most respected and trusted organisations, with immense potential to engage the community, especially throughout regional areas at a grassroots level. CWA of NSW members are strong women making significant impacts in their communities.

This partnership will work to develop a dedicated communication and engagement campaign to share practical information with CWA of NSW members and regional communities in areas of New South Wales with priority koala habitat. With a shared vision to protect koala trees in New South Wales, together we can help engage and empower regional communities to conserve koala trees.



Working with local communities to conserve koalas in south-west Sydney

In addition to the commitments in this strategy, the NSW Government has committed \$114 million in the first 5 years of the draft Cumberland Plain Conservation Plan for early implementation actions. Some of these actions have a strong focus on koalas, including:

- establishing new reserves and biodiversity stewardship sites to protect important koala habitat, including the 1830 hectares Georges River Koala Reserve
- restoring up to 80 hectares of koala habitat within the Georges River Koala Reserve
- installing koala exclusion fencing and constructing two fauna crossings to allow movement across Appin Road.

The South-west Sydney koala population is a proposed stronghold area under the strategy. Estimated to be between 600 and 1,000 koalas, it is a significant regional population and the largest in the Sydney area. It includes koalas in the Campbelltown Local Government Area (LGA) and the eastern section of the Wollondilly LGA and towards the Southern Highlands. The koalas in the Campbelltown LGA are the largest chlamydia-free koala population in New South Wales.





Pillar 3 actions

Fixing priority koala vehicle strike hotspots

Addressing attacks by domestic dogs

Supporting koala rehabilitators

Training vets and vet nurses in wildlife care

Monitoring rehabilitated koalas after release

Facilitating chlamydia vaccine trials and captive breeding

Improving our approach to fire management

Improving emergency response actions for koalas and other wildlife

Translocation program

Pillar 3 – Improving the safety and health of koalas

This strategy will invest \$23.2 million over 5 years to remove threats to koalas, support koala rehabilitators, improve koala health and safety and establish a translocation program to relocate koalas to unoccupied habitat to improve the genetic diversity and health of local populations.

Koalas face various threats, including habitat loss and fragmentation, vehicle strike, disease, dog attack, fire, drought, and heatwave, with fragmentation and loss of habitat broadly considered to be the primary threat to koalas' survival in New South Wales (NSW Parliament 2020 p.19). Improvements to the health and safety of koalas are required to protect koalas from threats.

Key investments under this pillar include:

- \$9.1 million to re-establish koalas in unoccupied habitat, to improve koala genetic diversity and increase the viability of koala populations.



Target: Up to eight translocation projects implemented

- \$10.6 million to address vehicle strike hotspots across the State. Treatments will include measures to encourage drivers to slow down and structures to keep koalas and other native wildlife off roads, such as fencing and underpasses.



Target: Action taken at 10+ vehicle hotspots

- \$3.5 million to deliver programs to support the wildlife rehabilitation sector, vets, and vet nurses, and to improve outcomes for sick and injured koalas. The strategy will also establish a new program to improve response actions for koalas and other wildlife during emergencies, and will include implementing protocols, frameworks, training, and other mechanisms for emergency operational decision-making.



Target: 500+ vets and vet nurses receive wildlife care training

The full range of actions under Pillar 3 is provided in the table at the end of the strategy.

Translocating koalas

Translocations are likely to be an important component of the long-term conservation of koalas in New South Wales.

Translocation in this context refers to reintroducing koalas into unoccupied potential habitat, and reintroducing koalas from existing NSW populations to improve the genetic diversity and health of local populations. Translocation of koalas was a priority for research under the NSW Koala Strategy 2018–21.

Translocations will be considered on a case-by-case basis with careful planning and risk assessment. When translocating koalas into unoccupied habitat, it is critical to understand why the habitat is unoccupied and the area's capacity to support koalas. Success will be influenced by program design, monitoring and adaptive management. Translocations will be undertaken in consultation with local Aboriginal groups.





Pillar 4 actions

Implementing a statewide monitoring program
Estimating the baseline number of koalas at priority locations
Research to support innovation and adaptive management
Keeping our evidence base up to date
Research into koala responses to regeneration harvesting of native forests
Integrating traditional ecological knowledge
Australian Museum as the biobank for NSW koala genetic material
Developing a baseline map of koala genetics in priority locations
Improving priority interventions
Recognising the economic and cultural value of koalas
Innovation and leading the way with cutting-edge technology

Pillar 4 – Building our knowledge of koalas

The strategy will provide \$43.4 million over 5 years to build our knowledge of koalas and their habitat. This knowledge will be used to inform conservation actions under Pillars 1, 2 and 3 of the strategy and NSW Government policy decisions related to koalas.

There is still much more to learn about koala populations and the best way to effectively manage them over time. We need to identify the most appropriate method of surveying koala populations and establish baseline population and health data for koala populations. We also need to fill important gaps in our understanding of key threats to koalas.

Key investments under this pillar include:

- \$20.5 million to deliver a baseline of the current statewide occurrence, distribution and relative abundance of koalas, and health and genetics status of up to 50 koala populations. This information will provide essential data to inform the management and conservation of koala populations. Genetic data will also inform a koala translocation program and decisions about potential captive breeding programs. The NSW Government will be seeking to partner with philanthropic and corporate partners to deliver this work across New South Wales (see Leveraging innovation breakout box).



Target: Baseline data for up to 50 koala populations collected by 2024

- \$14.4 million to implement a koala monitoring program using established and innovative technologies. This is critical to increasing our understanding of koala population trends, their genetics and health status, their habitat, the threats that affect them and the key factors to ensure their long-term resilience. Monitoring will help to identify opportunities to refine and improve conservation actions as the program continues.



Target: Deliver a monitoring program and dashboard of koala management actions and trajectories for a minimum of 20 sites across New South Wales

- \$3.5 million to update and maintain the NSW Government’s Koala Habitat Information Base and effectively manage koala data.



Target: Koala Habitat Information Base spatial layers remain current and continue to inform koala conservation decisions made by NSW Government and local councils

- \$5 million to address priority knowledge gaps identified in the 10-year Koala Research Plan, such as the impacts of climate change and extreme weather events on koalas and their habitat, and koala disease interventions.



Target: Research priorities identified under the NSW Koala Research Plan 2019-28 are funded and the findings of these research projects inform actions under the strategy and NSW Government koala conservation policy decisions.

The full range of actions under Pillar 4 is provided in the table at the end of the strategy.



Leveraging innovation and funding to count koalas across New South Wales

Establishing a statewide baseline of population, disease and genetic information for koala populations across New South Wales is critical to achieving the long-term goal of doubling the NSW koala population by 2050.

This is a big task and requires collective action.

The NSW Government is seeking the support of philanthropic and corporate partners to help achieve the 2050 goal. This work is proposed to be undertaken with the advice, expertise, and guidance of Australia's leading wildlife scientists.

The work will incorporate cutting-edge technology in koala observation, such as thermal drone detection and large-scale habitat restoration techniques.

Building on our current knowledge to establish innovative and effective conservation tools will be a focus of the NSW Koala Strategy.



How will the strategy be delivered?

The NSW Koala Strategy is a science-based strategy employing adaptive management, underpinned by strong governance that will be delivered for and with the NSW community.

Science-based koala conservation

Conservation action must be underpinned by the best available evidence. Monitoring, mapping, and research using established and innovative technologies will increase our understanding of koala populations, their genetics and health status, their habitat, the threats that affect them, and the key factors to ensure their long-term resilience.

Filling knowledge gaps and establishing baseline information for koala populations are critical to evaluating the success of planned interventions. They are also key to assessing the impacts of policy and regulatory settings and to applying an adaptive management approach to koala conservation.

The data obtained through these projects will be added to the NSW Sharing and Enabling Environmental Data (SEED) portal, where it will be open source for all researchers to access and build upon.

To effectively manage koala populations over time, the NSW Government will continue to invest in the 10-year NSW Koala Research Plan, which began in 2018, to fill key gaps in our understanding of koalas.

Employing adaptive management

There are complex interdependencies between the environment, threats to koalas, and conservation actions that will require course corrections as the strategy progresses. Climate change and events such as bushfires, floods and land-use change will adversely affect koala numbers and require changes to management actions.

This strategy will use active and passive adaptive management techniques to increase the effectiveness of conservation actions through explicit feedback between monitoring and research and the activities and settings of the strategy (Figure 6). This approach will rely on:

- ongoing collection of data to inform actions
- responding to acute and chronic threats as they emerge
- changing the direction of actions as required to effectively address longer-term threats
- targeted monitoring and the development of thresholds and targets to guide decisions.



Pillar 4

Building our knowledge of koalas

- Evidence base
- Cutting-edge technology
- Baseline information for koala populations
- Improving priority interventions
- Traditional ecological knowledge
- Statewide monitoring
- Koala genetics
- Research

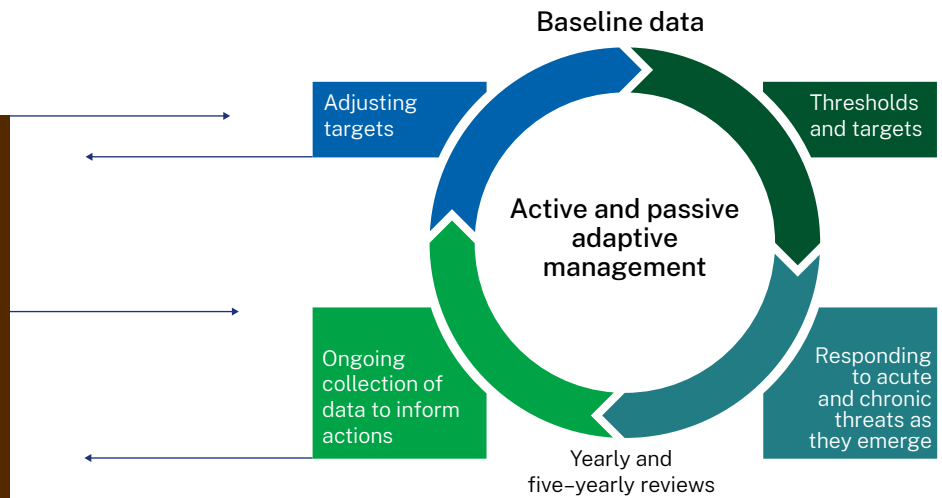


Figure 6 An example of how adaptive management will be applied in the Koala Strategy

Futureproofing for climate change

The impacts of climate change are already affecting koalas. These impacts are likely to increase in frequency and severity in the coming decades, making early action to increase koala numbers even more important. Key impacts from climate change include:

- changes to the nutritional quality of feed trees, which in turn affects the health of koalas, and can increase their time on the ground and exposure to threats such as vehicle strike and dog attack
- increased frequency and severity of fires, floods and droughts
- shrinking areas of refuge habitat
- changes to vegetation communities reducing habitat suitability for koalas.

In response to these impacts, successive five-year strategies will:

- improve the long-term security of important habitat by continuing to add land to the reserve system
- identify, protect, and expand habitat that serves as refuge from heat, drought and fire
- improve the condition and connectivity of existing habitat through habitat restoration
- promote climate-ready revegetation approaches, including tree species selection and consideration of seed provenance
- continue research to help manage the impacts of bushfire on koalas
- improve our understanding of koala genetics, including any populations with genes that may help them adapt to future climate impacts
- establish new areas of habitat that can support a range of threatened species and ecological communities including koalas.



Collaborating with partner organisations

The NSW Government cannot act alone to stabilise and increase koala populations. Strong partnerships with local councils, land managers, koala rehabilitators, community organisations, local Aboriginal groups, communities, business and industry, and the research sector are critical to achieving success.

The NSW Government will continue to invest in partnerships as a strategic priority, through:

- regional partnerships with local councils, Local Land Services, Aboriginal communities, and conservation groups, leveraging local expertise and knowledge to prioritise investment and deliver coordinated, strategic on-ground actions
- support for the wildlife rehabilitation sector to improve animal welfare and conservation outcomes
- collaboration between NSW Government agencies to deliver coordinated long-term habitat protection
- leveraging green investment frameworks to mobilise new partnerships to fund and deliver shared environmental values
- partnerships with researchers and research institutions.

Existing regional partnerships will be extended for 5 years in the Northern Rivers, Port Macquarie, Northern Tablelands and Southern Highlands regions. New regional partnerships will be established in the Liverpool Plains and Southern Tablelands regions. Two more regional partnerships with Aboriginal communities will be explored in the first year of the Strategy.

Partnering with Aboriginal communities

Aboriginal communities throughout New South Wales have a strong role to play in ensuring the long-term health of koalas and their habitat. This strategy recognises cultural considerations and supports new and existing Aboriginal partnerships, providing resources for Aboriginal communities to manage their lands for the benefit of koalas and other wildlife. Aboriginal land management approaches will be applied to help achieve the 30-year goal.

Strong advice, governance and reporting towards the 30-year goal

With input from an interagency committee we will ensure a whole-of-government approach to koala conservation. An implementation plan to deliver this strategy will be developed and published on the department's website.

Each year, a panel of independent experts led by the Office of the Chief Scientist and Engineer will provide advice to the Minister for Environment and Heritage with recommendations for new priorities and adjustments to the strategy. This will be based on a review of



actions taken over the previous 12 months, monitoring data, research findings and progress towards milestones set in the implementation plan. It will highlight any critical impediments to achieving the goal of doubling koala numbers by 2050. This will inform the annual progress report, which will be delivered to the Minister for Environment and Heritage and also published on the department's website.

The monitoring program for this 5-year strategy will establish a clear threshold and trigger framework to apply adaptive management or recast the strategy if goals are not being met.

At the end of this five-year strategy, an expert panel supported by the Office of the Chief Scientist and Engineer will revisit the 30-year goal in light of progress to date, and work with the NSW Government to set new actions for the following 5 years.

Collective community action

In the storyline for koalas in New South Wales over the next 30 years, we must all play our part. As a community, we must work in partnership, strategically and across land tenures to get the best outcomes for koalas and their habitat. All of us who live and work in New South Wales must work together if the koala's future is to change for the better.



Gumbaynggirr Koala project – learning from Aboriginal culture

The Gumbaynggirr Koala project from the previous strategy will be used to explore similar culture-inspired initiatives in other koala regions. This regional project led by the Gumbaynggirr community captured and applied cultural lessons from Aboriginal stakeholders to the management of threatened species and their habitat. A series of workshops with Aboriginal Elders, rangers and community members identified the significance of using storylines and traditional knowledge in threatened species management. The first workshop was led by Elder Aunty Shaa Smith and discussed the creation story of the Dunggirr Gagu (Koala Brothers). Woven within this story are cultural protocols and lore that guide Gumbaynggirr engagement in threatened species conservation, forming a framework for management and monitoring.

Actions in the NSW Koala Strategy



Pillar 1: Koala habitat conservation

Action number	Action 2021–26	Description
1.1	Permanently conserving priority koala habitat as national parks*	The NSW Government will permanently conserve areas of high-quality koala habitat in strategic locations by adding them to the national park estate. Land that can help establish and secure stronghold areas will be prioritised.
1.2	Partnering with landholders to protect koala habitat on private land*	Private landholders with high-quality koala habitat in populations for immediate investment will be supported to permanently conserve their koala habitat. Support will be targeted towards stronghold areas and will occur via 2 programs administered by the Biodiversity Conservation Trust: <ul style="list-style-type: none"> • Conservation Partners Program • in-perpetuity conservation agreements with annual payments.
1.3	Retiring biodiversity credits	The NSW Government will purchase and retire 1,500 koala credits from the biodiversity credit market, securing in-perpetuity protection for koala habitat.
1.4	Restoring and managing koala habitat*	The NSW Government will restore 20,000 hectares of koala habitat across different tenures, including natural regeneration and direct planting, supporting local restoration initiatives through regional restoration summits and training for local groups.
1.5	Engaging the private sector	The NSW Government will use partnerships to leverage private sector investment in koala conservation.
1.6	Coordinating habitat restoration	The NSW Government will develop a statewide platform for capturing koala habitat restoration information to enable prioritisation and coordination of koala habitat restoration needs, including bushfire-affected regions.
1.7	Driving investment through premium carbon markets	The NSW Government will work with private sector partners to deliver ground-breaking premium carbon market projects. Projects will actively regenerate areas of degraded koala habitat. The action will help build business and community confidence in the environmental, social and public co-benefits of premium carbon markets.
1.8	Box-gum woodland restoration and rewilding	Taronga Conservation Society Australia will partner with the NSW Government to lead the largest ever box-gum woodland restoration and rewilding project. This action will deliver a landscape scale restoration project, creating more than 5,000 hectares of climate-change-resilient habitat for koalas and other threatened species. Koalas will be translocated to the site once the woodland is re-established.
1.9	Land-use planning initiatives	The NSW Government will direct and support councils to ensure koala habitat values are included in land-use planning decisions through regional plans, local strategic planning statements and local environmental plans. These will be informed by best available koala habitat mapping such as the Koala Habitat Information Base and koala plans of management in priority local government areas. This will mitigate habitat loss and deliver long-term habitat protection for koala and other species that share their habitats.
1.10	Area of Outstanding Biodiversity Value for koalas	The Minister for Environment and Heritage will establish one Area of Outstanding Biodiversity Value (AOBV) for koalas under the Biodiversity Conservation Act. This will help to effectively manage an area that makes a significant contribution to the persistence of koalas.
1.11	Assets of Intergenerational Significance for koalas	The Minister for Environment and Heritage will establish 20 new Assets of Intergenerational Significance (AIS) for koalas under the <i>National Parks and Wildlife Act 1974</i> .

*Actions continued from the NSW Koala Strategy 2018–21 with new investment



Pillar 2: Supporting local communities to conserve koalas

Action number	Action	Description
2.1	Partnering with regional experts to deliver on-ground actions*	The NSW Government will deliver up to 8 regional koala conservation partnerships with councils, conservation groups, Aboriginal communities and other partners to ensure community expertise and knowledge are informing on-ground actions.
2.2	Engaging the community*	The NSW Government will continue to work closely with the NSW community to protect koalas and areas of important koala habitat. Regional partnerships from Action 2.1 will engage communities in local koala actions.
2.3	Supporting councils to deliver koala habitat maps	The NSW Government will draw on expertise within Local Land Services and the Environment and Heritage Group to assist local councils to carry out rigorous on-ground ecological assessments and appropriate community consultation to develop koala habitat maps and strategically conserve koala habitat in their local area.
2.4	Partnering with the Australian Government and other states	The NSW Government will continue to work collaboratively with state and federal governments to protect koalas throughout Australia. Koala management in other states and work led by the Australian Government can provide useful insights and opportunities for collaboration, such as completing the recovery plan for the listed populations of koalas, and establishing a national monitoring framework for koalas.
2.5	Working with landholders*	<p>The NSW Government will partner with farming organisations to explore new ways to encourage landholders to protect koala habitat on their land while maintaining agricultural production values.</p> <p>The NSW Government will partner with the Country Women's Association (CWA) of New South Wales to develop a dedicated communications and engagement campaign to share practical information with CWA members and regional communities in areas of New South Wales with koala habitat.</p>
2.6	Increasing engagement of schools and local community groups*	The NSW Government will support the involvement of school children and local Lions clubs in koala conservation through the Koala Smart program.

*Actions continued from the NSW Koala Strategy 2018–21 with new investment



Pillar 3: Improving the safety and health of koalas

Action number	Action	Description
3.1	Fixing priority koala vehicle strike hotspots*	The NSW Government will identify and take action at 10 or more vehicle strike hotspots across the State to reduce koala injury and mortality and improve the viability of koala populations.
3.2	Addressing attacks by domestic dogs*	The NSW Government will reduce attacks on koalas by domestic dogs by working with local councils to engage dog owners in key areas where attacks occur.
3.3	Supporting koala rehabilitators*	The NSW Government will continue to support koala rehabilitators by: <ul style="list-style-type: none"> • providing ongoing professional development training for volunteer carers in wildlife rehabilitation and conservation, and wildlife rehabilitation group management • providing equipment and access to transport for injured koalas and other wildlife.
3.4	Training vets and vet nurses in wildlife care*	The NSW Government will work with Taronga Zoo to continue to deliver professional training in wildlife treatment for vets and vet nurses.
3.5	Monitoring rehabilitated koalas after release*	The NSW Government will work with wildlife rehabilitators and researchers to monitor rehabilitated koalas released back into the wild.
3.6	Facilitating chlamydia vaccine trials, translocations and captive breeding	The NSW Government will facilitate the policy and regulatory pathways to support scientific developments to improve the health and viability of koala populations, including for koala chlamydia vaccine trials, captive breeding of koalas and translocation in New South Wales.
3.7	Improving our approach to fire management to protect koalas and koala habitat*	The NSW Government will develop bushfire management approaches to better protect koalas and their habitat while also protecting people and property. The government will incorporate traditional ecological knowledge and cultural burning practices into these approaches. Improved understanding of the impacts of hazard reduction burns on koalas will help inform future hazard reduction burns.
3.8	Improving emergency response actions for koalas and other wildlife	The NSW Government will work with volunteer wildlife rehabilitators, vets and other partner organisations to enhance coordination of emergency response for koalas and other wildlife due to bushfire or extreme weather events.
3.9	Translocation program	The NSW Government will use the lessons from previous translocation research to undertake koala translocations. Translocations will be accompanied by special consultation with local Aboriginal groups.

*Actions continued from the NSW Koala Strategy 2018–21 with new investment



Pillar 4: Building our knowledge of koalas

Action number	Action	Description
4.1	Implementing a statewide monitoring program	The NSW Government will monitor populations, habitat, disease, genetic diversity and threats at a minimum of 20 sites across New South Wales, enabling future measurement of progress against the 30-year goal. A dashboard will track the effectiveness of actions delivered under this strategy.
4.2	Establish baseline information about koalas	The NSW Government will implement innovative and cost-effective methods to deliver a baseline of the current statewide occurrence, distribution and relative abundance of koalas within three years. This work will also collect baseline health and genetics status in up to 50 koala populations. The program will use the best available science and encourage private sector input.
4.3	Research to support innovation and adaptive management*	The NSW Government will continue to oversee the Koala Research Plan. The NSW Government will incorporate cultural knowledge systems into the plan and coordinate research and data collection on key knowledge gaps. The NSW Government will hold biennial research symposia to review progress and update key knowledge gaps identified in the plan. The research program will seek to leverage significant co-investment from aligned programs such as the Australian Research Council Linkage Program.
4.4	Keeping our evidence base up to date	The NSW Government will continue to refine and improve the Koala Habitat Information Base and supporting spatial and mapping products. This will include further refuge modelling to identify areas that may serve as refuges from fire, heat stress or drought.
4.5	Research into koala responses to intensive harvesting of native forests*	The Natural Resources Commission will continue to deliver an independent research project to better understand how koalas are responding to intensive harvesting on the NSW North Coast.
4.6	Integrating traditional ecological knowledge	The NSW Government will support monitoring on Aboriginal-owned lands and facilitate integration of traditional ecological knowledge into on-ground actions.
4.7	Australian Museum as the biobank for NSW koala genetic material*	The NSW Government will continue to coordinate the delivery of koala genetic material to the Australian Museum through a new phase of sample collection and storage.
4.8	Developing a baseline map of koala genetics	The NSW Government will partner with researchers, communities and other stakeholders to deliver a baseline map of genetic diversity to fill knowledge gaps in the first 3 years. The data will be open source for all researchers and koala rehabilitators to access and build on. This forms part of the baseline survey program.
4.9	Improving the effectiveness of conservation actions	The NSW Government will explore the links between conservation actions and their relative contribution to increasing koala numbers through effective monitoring and evaluation. This work will inform future prioritisation of investment and action. Research will be undertaken to identify least-cost pathways to protecting, restoring and creating habitat by understanding trends in habitat loss, relevant drivers and the likely viability of koala habitat by region.

Action number	Action	Description
4.10	Recognising the economic and cultural value of koalas	The NSW Government will deliver a study to quantify the market and non-market values of koalas to the NSW community, including cultural, reputational, intrinsic and Aboriginal values.
4.11	Innovation and leading the way with cutting-edge technology	The NSW Government will explore innovative ways to incorporate cutting-edge technology in koala conservation, such as thermal detection of koalas using drone technology and novel habitat restoration techniques.

*Actions continued from the NSW Koala Strategy 2018–21 with new investment



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