

Submission  
No 259

## INQUIRY INTO KOALA POPULATIONS AND HABITAT IN NEW SOUTH WALES

**Organisation:** NSW Government

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PORTFOLIO COMMITTEE NO.7 – PLANNING AND ENVIRONMENT

## NSW Government Submission

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Inquiry into koala populations and habitat in New South Wales

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# Response to the Portfolio Committee Terms of Reference

- (a) the status of koala populations and koala habitat in New South Wales, including trends, key threats, resource availability, adequacy of protections and areas for further research

## Koala populations, habitat and threats

In March 2016, the New South Wales (NSW) Government asked the then NSW Chief Scientist and Engineer, Professor Mary O’Kane, to conduct an independent review into the decline of koala populations in key areas of NSW. The NSW Chief Scientist and Engineer’s 2016 *Independent Review into the Decline of Koala Populations in Key Areas of NSW* (O’Kane 2016) provides a detailed overview of the status of the koala in NSW. The report cites a recent study, which based on expert opinion estimates there are approximately 36,000 koalas in NSW, representing a 26% decline over the past three koala generations (15-21 years) (Adams-Hosking *et al.* 2016).

In NSW, significant koala populations occur on the central and north coasts and in the Southern Highlands. There are also populations in the Southern and Northern Tablelands, on the South Coast and west of the Great Dividing Range. The Chief Scientist and Engineer’s report notes that koalas in NSW ‘have experienced significant declines in both numbers and distribution’. Koalas were listed as vulnerable by the NSW Government in 1992 and three koala populations have been listed as endangered. The combined koala populations of Queensland, NSW and the Australian Capital Territory were listed as vulnerable by the Commonwealth in 2012.

Key threats to koalas in NSW include habitat loss and fragmentation, vehicle strike, disease, dog attack, fire, drought and heatwave. Threats impact koalas differently across NSW. There is still more to learn about threats to koalas and the most effective actions to avoid or reduce those threats.

The NSW Chief Scientist and Engineer’s report recommended the NSW Government develop a whole-of-government koala strategy with the objective of stabilising and then increasing koala numbers. The report made a further 10 recommendations to inform the development of a strategy.

## Overview of policy settings for koalas in NSW

The NSW Government has put in place a range of programs, projects, laws and policies that help to secure the future of koalas in the wild. The NSW Government has developed the NSW Koala Strategy (OEH 2018a), setting out actions for the first three years of a longer-term vision to stabilise and then increase koala numbers over the longer-term, ensuring genetically diverse and viable populations across the state. The NSW Koala Strategy was developed in response to the Chief Scientist and Engineer’s report and its development was guided by an expert advisory panel. Under the NSW Koala Strategy, the Government has committed \$44.7 million – the biggest commitment by any state government to secure koalas in the wild. This funding includes \$20 million to acquire land to protect koala habitat and \$24.7 million to implement strategy actions.

The *Biodiversity Conservation Act 2016* (BC Act) commenced on 25 August 2017. The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

The BC Act contains provisions ensuring the protection of threatened species, including the koala, which is listed as a vulnerable species under Schedule 1. The BC Act establishes a framework for assessing and offsetting biodiversity impacts from proposed development. The listing of koalas as vulnerable means they must be considered under the *Environmental Planning and Assessment Act*

1979 (EP&A Act) when preparing environmental planning instruments and when undertaking development assessments.

The BC Act also requires a Biodiversity Conservation Program be established to maximise the long-term security of threatened species and threatened ecological communities in nature. This requirement is being fulfilled by Saving our Species, a state-wide program that aims to secure threatened plants and animals in the wild in NSW. The Saving our Species Iconic Koala Project (OEH 2017a) is delivering strategic on-ground conservation actions at both a local and state-wide scale. This project supports the objectives of the NSW Koala Strategy. More information on Saving our Species, other conservation programs, and relevant legislation can be found in section (b) iv, and section (c).

The State Environmental Planning Policy 44 – Koala Habitat Protection (SEPP 44), aims to protect koala habitat through the planning system. SEPP 44 requires consideration of koala habitat before certain development can be approved. It also encourages the preparation of Comprehensive Koala Plans of Management (CKPOM) to manage koala habitat for long-term sustainability and/or recovery. More information on the SEPP can be found in section (c).

Native forestry on State forests and Crown-timber lands in NSW are regulated by Integrated Forestry Operations Approvals (IFOA). They are issued by the NSW Government and include specific provisions for the identification and protection of koala habitat. More information on the IFOA can be found in section (b) i.

The *Local Land Services Act 2016* (LLS Act) requires landholders to obtain a private native forestry plan (PNF plan) from Local Land Services (LLS) to conduct native forestry operations on private land. Once a PNF plan is entered, landholders must conduct PNF operations in accordance with the relevant Private Native Forestry (PNF) Code. The existing PNF Codes of Practice include prescriptions for koalas. More information on the PNF Codes of Practice can be found in section (b) ii.

The Land Management (Native Vegetation) Code 2017 does not permit clearing in sensitive areas, including core koala habitat. Core koala habitat is defined as land under a plan of management approved under SEPP 44. More information on the LLS Act and associated regulations and codes can be found in section (b) iv.

## Research

There is still a lot to learn about koalas in NSW and improving knowledge is key to informing effective conservation actions. The Chief Scientist and Engineer's report highlighted the importance of knowledge and research in the conservation of koalas. The report highlighted that while many threats to koalas are well known 'there is still much to learn about many of these existing threats and the most effective actions to mitigate them' (O'Kane, 2016, p. iv).

Through the NSW Koala Strategy, the NSW Government is developing a state-wide koala habitat information base with the best available data on koala habitat and koala occurrence throughout NSW. To address knowledge gaps and better protect koalas in the wild, the NSW Government is also investing funds for priority koala-focused research delivered under the 10-year NSW Koala Research Plan (OEH 2019). A key knowledge gap is one that, if addressed through research, will likely increase the effectiveness of koala conservation actions and/or their likelihood of implementation.

The priority research themes identified in the [NSW Koala Research Plan](#) are:

## NSW Koala Research Plan – Priority research themes

### Climate change and extreme weather events

- Habitat suitability under climate change
- Refugia
- Water supply

### Disease

- Dynamics of emergence
- Impacts (including management)<sup>1</sup>
- Insurance populations
- Risk mapping

### Habitat

- Landscape
- Logging<sup>2</sup>
- Occupancy
- Restoration

### Other

- Cumulative threats
- Fire
- Genetics
- Management effectiveness
- Population viability
- Socio-economic barriers
- Translocation<sup>1</sup>

#### Notes:

1: The NSW Koala Strategy includes specific research questions under this theme with specific funding attached.

2: Regeneration harvesting as referred to in the NSW Koala Strategy is referred to as 'intensive harvesting' in the Coastal Integrated Forestry Operations Approval (IFOA) (see [www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals/coastal-ifoa](http://www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals/coastal-ifoa)). Research under the logging sub-theme has already been funded through the Natural Resources Commission (see [www.nrc.nsw.gov.au/koala-research](http://www.nrc.nsw.gov.au/koala-research)). This does not preclude research proposals on related topics.

In response to a call for proposals released in early 2019, grants have been awarded to ten projects, with a total value of \$1.93 million. Descriptions of the projects can be found at <https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/programs-legislation-and-framework/nsw-koala-strategy/nsw-koala-research-plan>. The remaining allocated funds will be spent in future years following the next koala Research Symposium in 2020.

The Department of Planning, Industry and Environment's (DPIE) DPI-Forest Science Unit has undertaken a study on the status and response of koalas to timber harvesting in the north-east forests of NSW. This research was undertaken at 171 sites across the hinterland forests of north-east NSW (Law *et al.* 2018).

A new koala tracking project is underway in north-east forests of NSW on the Mid North Coast. The project will use GPS collars on koalas to track their movements throughout the forest. The project will enable DPIE researchers to look at the effectiveness of koala protections in State forests and relative use of young regenerating eucalypts after harvesting compared to mature forest.

For more information about koala research in NSW forests please visit:

<https://www.dpi.nsw.gov.au/forestry/science/koala-research>

The NSW Government has also asked the Natural Resources Commission (NRC) to oversee an independent research program to better understand how koala populations on the North Coast are responding to native forest harvesting. Three research projects are being undertaken that will focus on the nutritional value of koala habitat (led by researchers at the Australian National University), koala diet composition and quality (led by researchers at Western Sydney University) and koala population density using acoustic sensors and DNA (led by researchers at the DPI Forest Science

Unit in the NSW DPIE). More information on the NRC's research program is available at: <https://www.nrc.nsw.gov.au/koala-research>.

The NSW Environmental Trust provides funding to a range of community, government and industry stakeholders to deliver projects that conserve, protect and rehabilitate the NSW environment, or that promote environmental education and sustainability. This includes an Environmental Research program that supports applied research in identified priority environmental themes. Further information about the environmental research program can be found at: <https://www.environment.nsw.gov.au/funding-and-support/nsw-environmental-trust/grants-available/environmental-research>.

(b) the impacts on koalas and koala habitat from:

(i) the Coastal Integrated Forestry Operations Approvals and Regional Forest Agreements

### Forestry Industry background

The NSW Government's vision is that NSW will have a sustainably managed forest estate that underpins a dynamic, economically efficient forestry industry, which continues to support regional economies and delivers social and environmental benefits. Further information about this approach is set out in the NSW Forestry Industry Roadmap.

The forest industries in NSW comprise a \$2.5 billion sector with the native forestry industries valued at about \$465 million. The sector employs more than 22,000 people, with a large proportion of these jobs being in rural areas.

The NSW Government takes a balanced, triple-bottom-line, approach to the management of our forest resources on both public and private land, based on nationally agreed Ecologically Sustainable Forest Management principles.

Our forest management is guided by a range of national and international commitments which set out strict environmental safeguards for the protection of rare or threatened flora and fauna, including koalas.

These safeguards and the delivery of the vast array of benefits our communities enjoy from native forests are supported by a world class regulatory and policy regime.

More than 80 per-cent of the approximately 8 million hectares of native forest, across all forest types under public management in NSW, is protected for conservation purposes (figure derived from Australia's State of the Forests Report 2018 and Forestry Corporation of NSW reporting).

Forests are important, not only in providing habitat, but also in providing a wide range of other community values and opportunities. They contribute to vibrant rural and regional communities and the NSW economy in the sustainable provision of wood and other forest products.

### Coastal Integrated Forestry Operations Approval

#### What it is

The Coastal Integrated Forestry Operations Approval (Coastal IFOA) sets the environment protection and forest management rules for how the Forestry Corporation of NSW (FCNSW) undertakes native forestry operations in public forests in the coastal areas of NSW. The Coastal IFOA sets out rules to protect native plants, animals, important habitat and ecosystems, soils and water during native forestry operations, on both State forests and other Crown-timber lands.

The Coastal IFOA is granted under Part 5B of the *Forestry Act 2012* (NSW). It provides a regulatory framework that authorises the carrying out of forestry operations in accordance with principles of ecologically sustainable forest management. The Coastal IFOA sets out conditions,

which are the mandatory actions and controls that are essential to achieving these objectives and outcomes under which forestry operations are to be carried out. It also adopts a series of protocols, which prescribe additional enforceable actions and controls that support the carrying out of forestry operations in accordance with the conditions.

### How it was developed

The NSW Government is committed to minimising impacts on koala habitat in areas subject to native forestry. In 2012, the NSW Government released a [Coastal IFOA Discussion Paper](#) (EPA 2014), which outlined potential areas of improvement to be considered. This included improvements to the way koala habitat was identified and protected. The Discussion Paper identified the challenges in applying and enforcing the settings and noted that the conditions focussed on the process of searching for evidence of koalas, rather than on the protection of important and occupied habitat and food resources.

In 2015, the General Purpose Standing Committee No. 5 undertook an inquiry into the performance of the NSW Environment Protection Authority (EPA). This included reviewing the EPA's investigation into a forestry operation in Royal Camp State Forest, where community groups alleged that FCNSW had failed to adequately protect koala habitat. The [Committee noted](#) the complexity and subjectivity of the previous IFOA conditions, and noted a need for clearer, more efficient regulations for koalas (see General Purpose Standing Committee No. 5, 2015). They also noted that this was already being considered as part of the development of the Coastal IFOA.

In developing the Coastal IFOA, the NSW Government undertook a robust process to design a framework that balanced both the maintenance of environmental values and existing wood supply. The NSW Government sought independent advice from the NRC on how to achieve this balance, including settings for koalas. The NRC provided their advice in [November 2016](#) (see NRC 2016), and these settings were accepted by the NSW Government and drafted into the Coastal IFOA.

### How it protects koala habitat

In northern NSW, the Coastal IFOA moves away from survey-triggered approaches to koala protection and instead utilises maps prepared under the EPA's koala mapping program. It uses a combination of the likelihood of habitat occurrence, and the likelihood of koala occurrence to determine habitat quality. Important food resources are required to be retained at rates that escalate with the quality of the koala habitat.

In addition, areas protected under the former IFOAs as koala high-use areas are required to be permanently protected and important koala habitat must be prioritised for inclusion in new permanent landscape protections that apply at both the harvest site and across the landscape.

These changes double the area of northern NSW where koala protections apply and provide transparency and consistency in the management of koala habitat in State forests.

The effectiveness of the koala protections will be a priority for the Coastal IFOA monitoring and adaptive management program currently being developed by NRC. In addition, the NSW Government is funding research on the impacts of intensive harvesting on koalas through the NSW Koala Strategy. [This research](#) is being overseen by the NRC (see NRC 2019).

On the South Coast, the IFOA continues to specify a survey driven approach to koala habitat identification. However, the survey method reflects more contemporary approaches. If identified, given the rarity of koalas on the South Coast, the EPA will develop new koala conditions that are specific to the harvest site and koala population. It is expected that these IFOA settings will be updated once improved koala habitat mapping become available for the region.



## EPA koala mapping program

As part of the Coastal IFOA reform, the EPA invested \$373,000 to undertake a koala mapping program. The NSW Environmental Trust oversaw the program, which was completed in June 2017.

The program provided a clearer understanding of koala habitat identification and forest management needs in native forestry areas on public and private land by:

- developing a baseline map of koala occupancy to provide a more accurate picture of where koalas are located across NSW (undertaken by the then Office of Environment and Heritage)
- trialling different mapping approaches to assess their suitability for managing koalas in State forests
- developing a predictive koala habitat model which uses a range of environmental variables to produce a map of koala habitat on the North Coast (undertaken by the Department of Primary Industries (DPI) and expanding on an existing mapping project they had initiated).

The NSW Government used the outputs of the koala mapping program to inform the development of koala identification and protection requirements in the Coastal IFOA.

## Regional Forest Agreements

Regional Forest Agreements (RFAs) set high-level agreements between the NSW and Commonwealth Governments on delivering ecologically sustainable forest management (ESFM). There are three RFAs in NSW, covering the Eden, north-east and southern regions. RFAs aim to provide for a Comprehensive, Adequate and Representative (CAR) reserve system, the ecologically sustainable management and use of forested areas, and long-term stability for forest-based industries. The RFAs strike a long-term sustainable balance between economic, social and environmental demands on our forest resources.

The RFAs are an agreed form of assessment and approval for the purposes of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). RFAs also provide exemption from separate approvals under national export legislation that affects the international sale of timber from native forests and plantations. These agreements also facilitate forward planning and enhance the FCNSW's ability to set and implement timber supply contracts.

RFAs require NSW to implement a range of statutory and non-statutory programs and actions for the protection of threatened species and habitats. These include:

- protection within the CAR Reserve System
- protection of key habitat and ecosystems through the IFOA
- conservation of key habitats such as rainforest, heaths, swamps and other wet communities, rocky outcrops and threatened ecological communities, and
- Biodiversity Conservation Programs for species and communities listed under the BC Act and for species, populations and communities listed under the EPBC Act. RFAs also require the development, maintenance and implementation of relevant Statutory Conservation Planning Documents under the *Fisheries Management Act 1994* (NSW). Key species are protected by a combination of reservation and prescription.

Information about the system for delivering ESFM within the NSW forested estate is detailed in the [Overview of the New South Wales Forest Management Framework](#) (DPI 2018). Information about the NSW RFAs is available at: <https://www.dpi.nsw.gov.au/forestry/regional-framework>.

## Forest monitoring and research programs

DPI Forest Science Unit provides evidence-based forest research services that underpin sustainable use of NSW's native forests and productive plantations. For more information about koala research in NSW forests, visit: <https://www.dpi.nsw.gov.au/forestry/science/koala-research>.

The NSW Government has asked the NRC to oversee an independent research program to better understand how koalas are responding to regeneration harvesting in State forests on the NSW North Coast. This work is being undertaken as part of the NSW Koala Strategy. The NSW Government is investing \$300,000 over three years into this research. More information about this program is available at: <https://www.nrc.nsw.gov.au/koala-research>.

The Coastal IFOA and the RFAs will be supported by a comprehensive \$7.2 million forest monitoring and improvement program. This program will monitor the effectiveness of the Coastal IFOA, including the koala settings, to ensure any potential impacts are identified and adaptively managed into the future. The NSW Government has appointed the NRC to independently oversee the design and implementation of the monitoring program. Information about this monitoring program is available at: <https://www.nrc.nsw.gov.au/forest-monitoring>.

## (ii) the Private Native Forestry Code of Practice

### The current PNF Codes of Practice

The [PNF Code of Practice](#) includes protection of landscape features such as forested riparian areas, wetlands, rocky outcrops, rainforest, steep lands and old-growth forests.

The PNF Code of Practice requires additional measures for some threatened species, including koalas, to help ensure that the impacts of harvesting are minimised. For koalas, the PNF Code of Practice restricts forestry operations in areas identified as core koala habitat within the meaning of SEPP 44. It includes additional protections for koala feed trees or high-use trees where there is a known record or site evidence of koalas on the property.

These measures, like all species-specific provisions in the PNF Code of Practice, are triggered by either the existence of koala records in the Atlas of NSW Wildlife ([www.bionet.nsw.gov.au](http://www.bionet.nsw.gov.au)) or the identification of the presence of koalas (or evidence of their presence) by the landholder and/or a harvest operator. The PNF Code of Practice does not require pre-harvest surveys for koalas or any other species.

### Koala prescriptions in the current PNF Codes of Practice

The existing PNF Codes include prescriptions for vulnerable species. In the case of the koala these protections include:

- in each of the PNF Code regions, Forest Operation Plans must be prepared consistent with the Listed Ecological Prescriptions in each of the PNF Code regions which include protections for koalas
- in each of the PNF Codes regions, forest operations must not result in any harm to an animal that is part of an endangered population
- in each of the PNF Code regions, forest operations are not permitted within any area identified as 'core koala habitat' within the meaning of SEPP 44
- in the Northern and Southern Code of Practice regions, any tree containing a koala or any tree underneath which 20 or more scats are found must be retained and a harvest exclusion zone of 20 metres implemented around each individual tree
- in the River Red Gum and Cypress and Western Hardwood regions, any tree containing a koala or any tree underneath which one or more koala scats are found must be retained

- and a harvest exclusion area of 50 metres implemented around each individual tree
- in each PNF Code region, where there is a record of koalas within an area or within 500 metres of an area, or a koala scat is found beneath a primary or secondary koala food tree:
  - a minimum of 10 koala feed trees and 5 secondary food trees must be retained per hectare
  - these trees must be spread evenly across the area, have leafy broad crowns and be a minimum of 30 centimetres in DBH (Diameter at Breast Height)
  - any damage to the retained trees must be minimised by using directional felling techniques.
- in the River Red Gum and Cypress and Western Hardwood regions post-harvest burns must minimise damage to the trunks and foliage of retained trees.

## PNF and PNF Code Review

The NSW Government has committed to a comprehensive review of the PNF Codes of Practice. In November 2018, the review formally commenced. LLS is leading the review in collaboration with the EPA and DPIE.

The review seeks to balance the sustainable development of the private native timber and agricultural industries with the environmental values of the private native forest estate. It will consider the management of threatened species, including the adequacy of the protection measures for threatened species and their habitats including vulnerable species such as the koala.

The NSW Government released a [PNF Review Terms of Reference](#) for public comment on 15 November 2018. Public feedback was sought on potential improvements and changes to private native forestry. The submissions are currently being reviewed and improvements to the regulation of PNF are under consideration. There will be further opportunity for public comment on proposed changes to PNF regulations later this year.

### (iii) the old growth forest remapping and rezoning program

The NSW Government has a longstanding commitment to protect old growth forests.

In 2018, the NSW Government requested the NRC reassess existing mapping of old-growth forests. This reassessment aims to assess and improve the accuracy of existing mapping of old-growth forests.

The NRC is working with the DPIE to develop an environmental assessment framework and, using the best available technology, independently reassess nominated sites. Only areas subsequently identified to be incorrectly mapped as old-growth forest and found to hold no other special conservation values will be considered for rezoning to permit future timber harvesting. Any rezoned harvestable areas would still be subject to the general protections required by the IFOA. Protections will remain for all areas assessed as old-growth forest and new areas of old-growth forest will also be afforded increased protection.

The NSW Government will only consider rezoning erroneously mapped areas for harvesting in the future if a wood supply shortfall from implementing the Coastal IFOA has been independently identified and verified. This will be a factor in the NRC's work.

The NRC will engage with the public in the design of the reassessment framework. For more information on the reassessment of old-growth forest and the reasoning behind it visit:

<https://www.nrc.nsw.gov.au/old-growth>.

(iv) the 2016 land management reforms, including the Local Land Services Amendment Act 2016 and associated regulations and codes

The 2016 land management reforms, collectively known as the Land Management Framework (LMF), include the LLS and BC Acts. The LMF is focused on achieving triple bottom line (economic, environmental and social) outcomes for NSW landholders and the broader community. The LMF balances the need for a productive agricultural sector, while preserving and protecting our important environmental assets.

The LMF includes, amongst other things, the Land Management (Native Vegetation) Code 2018 (the Code). The Code provides landholders with more options to facilitate productive management of native vegetation while managing environmental risks. To manage environmental risk, it includes a number of protections for threatened species – including vulnerable species such as koalas.

LLS is responsible for administering the LLS Act, the associated regulation, and the Code. These three legislative instruments impact koalas and koala habitat in the following ways.

### *Local Land Services Act 2016 (LLS Act)*

Part 5A Division 4 of the LLS Act permits clearing for 'allowable activities'. Allowable activities cover a range of routine land management activities associated with agriculture. Clearing for allowable activities does not require approval under the LLS Act.

The allowable activities of clearing for construction timber, collection of firewood, public works and gravel pits require that the native vegetation to be cleared does not comprise or be likely to comprise a threatened species or the habitat of a threatened species, as defined by the BC Act.

Under the BC Act, a threatened species means a critically endangered species, an endangered species or a vulnerable species, as listed in Schedule 1. Schedule 1 lists the koala as vulnerable.

Section 60I(2)(j) of the LLS Act provides that koala habitat, as identified in a plan of management made under SEPP 44, is to be classified as Category 2 - regulated land.

### *Local Land Services Regulation 2017*

Clause 111 of the Local Land Services Regulation 2017 (the Regulation) provides that core koala habitat be designated Category 2 - regulated land (as per section 60I(2)(j) of the LLS Act). Further, Clause 108(2)(b) requires that koala habitat be designated as Category 2 - sensitive regulated land.

### *Land Management (Native Vegetation) Code 2018*

Under Clause 6 of the Land Management (Native Vegetation) Code 2018 (the Code), clearing is not permitted on land designated as Category 2 - sensitive regulated land. This includes core koala habitat, as described by Section 60I(2)(j) of the LLS Act and Clauses 111 and 108(2)(b) of the Regulation.

Clause 9 requires that clearing under authority of the Code does not harm threatened animal species. Clearing is not authorised by the Code if the person who carries out the clearing harms an animal that is a threatened species and that person knew that the clearing was likely to harm the animal. Threatened species has the same meaning as in the BC Act, which includes koalas.

Part 5A, Division 6 of the LLS Act requires that the Native Vegetation Panel (an independent body established under the LLS Act to determine applications seeking to clear native vegetation on rural land that do not meet the requirements of the Code) must refuse to grant approval if the proposed clearing is likely to have serious and irreversible impacts on biodiversity values (as determined under Section 6.5 of the BC Act).

Serious and irreversible impacts on biodiversity values means serious and irreversible impacts on biodiversity values as determined under Section 6.5 of the BC Act. This could include impacts on koalas or koala habitat.

## Set aside areas

In some cases, the Code may require the establishment of a set aside in exchange for the removal of native vegetation. Set asides are to be listed on a public register and actively managed to promote vegetation integrity in perpetuity.

Landholders are required to undertake reasonable efforts to promote vegetation integrity in the set aside area. LLS works with landholders on a case-by-case basis to identify the management interventions likely to deliver the best environmental outcomes in a set aside area. Where important koala habitat is present, the location of set asides can be targeted to protect, enhance and manage that habitat along with the habitat of other important threatened species and communities. Where koalas are present, the active management of set asides is intended to improve koala habitat.

The effect of the LMF on koala management is to create more clarity about the options available to landholders for management of native vegetation on their property. Under the LMF, there are three main categories of land in NSW:

- **Category 1 (exempt land)** is typically land that has been previously cleared or is not predominantly native vegetation. On this land vegetation clearing is allowed without approval from Local Land Services.
- **Category 2 (regulated land)** is typically land containing native vegetation. There are three types of regulated land.
  - Category 2 - land that is not Vulnerable or Sensitive regulated land. On this land authorisation for native vegetation clearing may be required from Local Land Services under the Code. Clearing is not authorised by the Code if the person who carries out the clearing harms an animal that is a threatened species and that person knew that the clearing was likely to harm the animal. Threatened species includes vulnerable species such as koalas
  - Category 2 - Vulnerable regulated land is typically riparian, steep or highly erodible land where clearing of native vegetation may not be permitted under the Code and a limited suite of allowable activities may apply
  - Category 2 - Sensitive regulated land is land where clearing of native vegetation under the Code is not permitted. This includes core koala habitat, described through Koala Plans of Management under SEPP 44.
- **Excluded land** is land outside the land management framework such as land in urban

areas.

These categories of land define the native vegetation management options available to landholders.

(c) the effectiveness of State Environmental Planning Policy 44 - Koala Habitat Protection, the NSW Koala Strategy and the Biodiversity Conservation Act 2016, including the threatened species provisions and associated regulations, in protecting koala habitat and responding to key threats.

### SEPP 44 - Koala Habitat Protection

SEPP 44 – Koala Habitat Protection was introduced in 1995 under the EP&A Act to protect koala habitat through the planning system. The SEPP’s aim is to:

encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline.

SEPP 44 applies in 83 local government areas (LGAs) listed under Schedule 1 of the SEPP (107 prior to local government amalgamations), and does not apply to land:

- on a lot with a size of one hectare or under (including adjoining lots under the same ownership)
- dedicated or reserved under the *National Parks and Wildlife Act 1974*
- dedicated under the *Forestry Act 1916* (now *Forestry Act 2012*) as a State Forest or flora reserve

### Koala Plans of Management

The primary threat to koalas that SEPP 44 aims to address is habitat loss and fragmentation. SEPP 44 enforces the consideration of koala habitat before certain development can be approved. This is important where the presence of koala habitat or koalas is not known.

SEPP 44 encourages the preparation of CKPOMs in the areas covered by SEPP 44. Their aim is to manage the long-term sustainability and recovery of koalas and their habitat and to also facilitate the mutually productive co-existence of people and koalas. CKPOMs have been crucial in recognising and mapping key koala habitat in LGAs. An approved CKPOM provides clarity for developers and council staff regarding where koala habitat is and what measures are in place for development in these areas to protect koalas and their habitat.

The key sections of CKPOMs regarding development assessment are also often accompanied by management and mitigation measures for threats other than habitat loss, such as vehicle strike and dog attack. While these management measures are generally for councils to implement, they also educate the community on key threats to koala habitat.

In six LGAs, a strategic level CKPOM has been developed for all or a significant part of the LGA. Councils that have a CKPOM approved by DPIE are:

- Kempsey Shire
- Port Stephens
- Coffs Harbour City
- Lismore City
- Ballina Shire

- Bellingen Shire

Eight other CKPOMs have also been developed or are under preparation but have not been approved by DPIE.

In addition, SEPP 44 requires the preparation of individual Koala Plans of Management (KPOMs) where development is proposed on 'core koala habitat' as defined by the SEPP. Approximately 90 individual KPOMs have been developed across NSW that have ensured impacts to koalas have been considered and managed as part of the development application process. At least five additional individual KPOMs are under assessment. The majority of these KPOMs have been developed for sites on the North Coast and Northern Tablelands of NSW with a significant number (11) also approved for Western Sydney.

### Opportunities to improve the effectiveness of SEPP 44

Issues with the operation of SEPP 44 have been identified in:

- the Recovery Plan for the Koala developed by the then NSW Department of Environment and Climate Change in 2008 (DECC 2008a)
- the Chief Scientist and Engineer's Report
- the [Explanation of Intended Effect](#) exhibited for an amendment to SEPP 44.

The NSW Government is committed to improving SEPP 44 and the SEPP 44 guidelines.

From November 2016 to March 2017, an [Explanation of Intended Effect](#) was exhibited for an amendment to SEPP 44. It proposed to improve SEPP 44 by:

- supporting councils to prepare CKPOMs
- fulfilling the requirements of the 2008 Koala Recovery Plan, including updating the list of tree species and the definitions of koala habitat
- updating the list of councils to which SEPP 44 applies
- updating the development assessment process
- transferring strategic planning instructions in SEPP 44 to a Local Planning Direction

One hundred and fifteen submissions were received, with most generally supporting the changes.

The government put the finalisation of this amendment on hold to ensure that any changes to SEPP 44 align with the actions of the NSW Koala Strategy, particularly the development of a state-wide koala habitat information base which will inform the review of SEPP 44.

Additionally, the NSW Koala Strategy outlined that a best practice guideline will be created to improve assessment of development proposals and provide best practice urban design planning guidance in relation to koala habitat. This will be developed by DPIE to support the implementation of SEPP 44 and further protect koala habitat.

### Further explanation of the operation of SEPP 44

SEPP 44 defines two types of koala habitat:

- **Core koala habitat:** "an area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population."
- **Potential koala habitat:** "areas of native vegetation where the trees of the types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component."

SEPP 44 protects koala habitat by:

- Requiring an assessment of koala presence in Development Applications (DAs) through:
  - an investigation of the site to determine if it is ‘potential koala habitat,’ (by a person who is qualified and experienced in tree identification).
  - an investigation of sites that are ‘potential core koala habitat’ to determine if they are ‘core koala habitat,’ (by a person with qualifications and experience in biological science and fauna survey and management)
  - koala plans of management to accompany any DA for development on land containing core koala habitat before council can consider granting consent.
- Encouraging local councils to develop CKPOMs for strategic identification of potential and core koala habitat in its LGA, which replace the need for individual KPOMs.
- Encouraging local councils to zone core koala habitat as environmental protection and create special provisions for that land in Local Environmental Plans (LEPs) and Development Control Plans (DCPs).

## The NSW Koala Strategy

The NSW Koala Strategy sets out the first phase of actions to achieve the NSW Government’s goal of stabilising and then increasing koala numbers over the longer-term, ensuring genetically diverse and viable populations across NSW.

During this first phase, the NSW Government has committed \$44.7 million to stabilise koala populations – the biggest commitment by any state government to secure koalas in the wild.

An expert advisory committee chaired by the NSW Chief Scientist & Engineer guided the development of this NSW Koala Strategy, which was also informed by extensive community and stakeholder consultation (with 4080 submissions received).

The NSW Koala Strategy builds on the work implemented through the Saving our Species Iconic Koala Project by aligning efforts across all government agencies much more broadly. It will also benefit other native species and landscapes across NSW and is based on the principles of on-ground action, monitoring and embedding new insights into practice, allowing it to be adapted in response to learnings from the first phase of actions.

### **Actions under the NSW Koala Strategy are being delivered under four pillars**

The aim of the NSW Koala Strategy in its first three years is to set the foundations for stabilising koala populations across the State by delivering actions under four pillars: koala habitat conservation, conservation through community action, safety and health of koala populations and building our knowledge and education.

#### **Koala habitat conservation**

Creating new reserves for koalas and protecting habitat corridors is a key pillar of the NSW Koala Strategy. The NSW Government has committed \$20 million to purchase land with prime koala habitat that can be permanently reserved as national parks.

More than 20,000 hectares of state forest on the Central Coast, Southern Highlands, North Coast, Hawkesbury and Hunter with koala habitat will be set aside as new koala reserves. Over 4000 hectares of native forest with koala habitat will be transferred to the national park estate including on the Mid North Coast. This land will be actively managed to ensure prime habitat is conserved, key habitat corridors are linked, and safe homes for koalas being returned to the wild are provided.

The NSW Government is also working with private landholders to protect koala habitat while managing their land for other uses such as farming. The Biodiversity Conservation Trust (BCT) is working with eligible landholders to maximise their options for diversifying income while protecting koala habitat on their land (for example, through annual management payments or grants).



## 2018/19 Achievements

- the purchase of three properties to protect more than 2600 hectares of land containing priority koala habitat. One of these is Tugalong Station, a 2164 hectare property in the Southern Highlands.
- 173 hectares of regionally important koala habitat is protected on five private properties in the Port Macquarie region, with another 81 hectares to be protected on five private properties in the Lismore-Ballina area.
- more than 4000 hectares of State forest transferred to the National Parks and Wildlife Service (NPWS) for management

## Conservation through community action

Under this pillar, the NSW Government is working with local communities and businesses to target threats specific to local koala populations.

Through local workshops, the NSW Government brought together community groups, local councils, landholders, government agencies, Local Aboriginal Land Councils and koala experts to identify and agree on priority local actions for key koala populations across the State.

In addition to the \$4 million Saving our Species investment to secure the koala in the wild, \$1 million is being provided to local communities over three years to deliver on-ground actions that address risks to koala populations at the local level.

## 2018/19 Achievements

- 13 community workshops with 236 participants delivered from August 2018 to February 2019 to help communities develop agreed local actions
- funding of 13 on-ground actions in partnership with the community to address local threats
- a further 10 conservation actions funded under the Saving our Species Iconic Koala Project
- the launch of the [NSW Koala Country website](#)

## Safety and health of koala populations

The NSW Koala Strategy provides \$7.5 million to support the triage, treatment and rehabilitation of koalas when threats cannot be managed, and to enhance safety for koalas where possible.

This funding will help to improve access of koala rehabilitators to resources, veterinary services, transport and facilities. Another action under this pillar is to establish a network of koala and wildlife hospitals. The Government has also committed \$3.3 million to fix priority hotspots where koalas are struck by vehicles across NSW.

## 2018/19 Achievements

- fencing being installed by Roads and Maritime Services to address a vehicle strike hotspot on Picton Road
- construction of Port Stephens koala hospital started in June 2019
- Australian Museum has received 1,500 genetic samples for the koala biobank

## Building our knowledge

The NSW Government recognises that improving knowledge on koala locations, numbers and habitat is key to informing how to protect koala populations. Through this pillar we committed \$8.9 million to increase knowledge of koalas and their habitat.

A key action is the development of a state-wide koala habitat information base that will have the best available data about koala habitat and koala occurrence throughout NSW.

We have also committed funding to support a 10-year research plan and to leverage further funding through linkage grants and partnerships. In addition to the research actions outlined in the NSW Koala Strategy, the NSW Government is also looking for further opportunities to partner with the community, private sector and institutions to build on our knowledge.

### 2018/19 Achievements

- the release of a 10-year research plan and the funding of 10 research projects
- an online community wildlife survey to ask people across NSW to share their knowledge of local wildlife – including koalas
- piloting the koala habitat information base

### The Biodiversity Conservation Act 2016, including the threatened species provisions and associated regulations

The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

The BC Act contains provisions for identifying and protecting threatened species.

### **The threatened species listing process in NSW is managed by a Scientific Committee**

The NSW Threatened Species Scientific Committee is an independent committee of scientists appointed by the Minister for Energy and Environment to determine the status of species and ecological communities in line with the regulation's criteria and following public consultation.

### **The vulnerable listing status of koalas in NSW provides for conservation actions to be developed for its protection**

The koala is listed as a vulnerable species under Schedule 1 of the BC Act. Koala populations in Hawks Nest and Tea Gardens, Pittwater LGA, and between the Tweed and Brunswick Rovers east of the Pacific Highway were listed as endangered populations under the *Threatened Species Conservation Act 1995*. These listings have been carried over to the BC Act.

Under the BC Act, a population of a species can only be listed as threatened if the species is not already listed. As the koala is listed as a vulnerable species, the committee will not be able to list additional koala populations under the BC Act.

### **The Saving our Species program is a world-class conservation program focused on securing threatened species in the wild**

The Saving our Species Program fulfils the requirements of the Biodiversity Conservation Program for threatened species and threatened ecological communities under Part 4, Division 6 of the BC Act. \$100 million has been committed to the program from 2016 to 2021. Projects are designed to deliver targeted and practical actions to secure threatened species and ecological communities in the wild. Projects are also monitored to make sure they are working and to identify where they can be improved and expanded if needed.

The principles guiding the program are:

- transparency – values, decisions and priorities are clearly justified and communicated to all stakeholders and the community

- objectivity – decisions and priorities are based on consistently applying an evidence-based approach
- scientific rigour – the collection, analysis and use of data is rigorous and decisions are based on the best available evidence
- cost-effectiveness – investment decisions are based on maximising the expected return in terms of outcomes relative to cost
- adaptive learning – opportunities for learning improve management effectiveness and are achieved wherever possible.

### **The Saving our Species Iconic Koala Project 2017–21 coordinates some koala conservation actions in priority sites across NSW**

The koala has been assigned to the iconic species management stream in the Saving our Species Program. Between 2016 and 2021, \$4 million has been allocated to koala conservation under the project.

The project has been developed by experts who identified key threats to koalas and actions to address them across the koala's range in NSW. The program has also conducted a detailed analysis of areas of regional koala significance (ARKS) for prioritising conservation actions which identify key koala populations and management areas with potential for long-term viability, as well as priority threats to those populations.

### **Core koala habitat has been mapped to help protect koalas**

Koala habitat is derived from approved KPOMs made under SEPP 44 where they exist across NSW. The Biodiversity Offsets Scheme recognises koala habitat identified in KPOMs as land with high biodiversity value, through inclusion on the Biodiversity Values map.

Most development or clearing that impacts on core koala habitat identified on the Biodiversity Values map will be required to apply the Biodiversity Offsets Scheme. Assessment under the scheme will identify how a proponent can avoid or minimise their impact and calculate an offset amount for any residual impacts. The consent authority will use this assessment to determine an offset obligation. The scheme creates an incentive for developers to minimise their impact on biodiversity and provides funding for landholders to protect and improve biodiversity on their land as an offset, including land that provides koala habitat.

Core koala habitat is also mapped as Sensitive Regulated Land on the Native Vegetation Regulatory map. Clearing on this land is not permitted unless approved by the Native Vegetation Panel. The Sensitive Regulated Land map category has regulatory effect.

### **More than 250 hectares of koala habitat will be conserved through private land conservation agreements**

The NSW Government has committed more than \$350 million over the next five years for private land conservation through the BCT. The BCT has five conservation agreements in Port Macquarie covering 173 hectares of priority koala habitat. The Trust has invested \$6.3 million to fund the annual conservation management payments to these landholders, typically paying \$423 to \$1182 per hectare per annum over the life of these agreements.

The Trust has completed a conservation tender for priority koala habitat in the Lismore/Ballina area and is entering five conservation agreements covering 81 hectares. The Trust has invested \$1.6 million to fund the annual conservation management payments to these landholders, typically paying \$120 to \$1637 per hectare per annum over the life of these agreements.

## The Biodiversity Indicators Program will assess the effectiveness of conservation actions

The Biodiversity Indicators Program will contribute to assessing the effectiveness of biodiversity management in NSW. It complements other programs under the BC Act, including Saving our Species and the Private Land Conservation program, by drawing on data and information from these programs and providing information to support their management and evaluation.

The Biodiversity Indicators Program assesses the expected survival of listed threatened species and measures the risk of losing unique evolutionary heritage via phylogenetic diversity. The relative distinctiveness of the koala, with no close relatives, means the species contributes to this indicator more than most mammal species.

In the future, the indicator can be updated based on monitoring of successful management actions that result in secure wild populations of threatened species as determined by the Saving our Species program.

(d) identification of key areas of koala habitat on private and public land that should be protected, including areas currently at risk of logging or clearing, and the likely impacts of climate change on koalas and koala distribution

The NSW Government is actively working to identify and protect areas of important koala habitat on private and public land. Creating new reserves for koalas and protecting important habitat corridors is a key pillar of the NSW Koala Strategy.

All lands proposed for addition to the national park system must undergo a strategic assessment to ensure they meet the standard requirements set out in the [Draft NSW National Parks System Directions Statement](#) (OEH 2017b). For lands transferred to the national park system under the NSW Koala Strategy, they must also:

- contain koala habitat and evidence of use by koalas
- be well-connected to surrounding vegetation
- enable better management of threats to koalas in that location, to lift the resilience of the region's koalas.

For koalas in inland NSW, the Government is working with koala experts to identify important koala refugia. These are areas of koala habitat likely to provide long-term security for koalas in the face of more intense heatwaves and droughts.

## Recent additions to the protected areas network

### Public land

More than 4000 hectares of native forest with koala habitat has been transferred to the national park estate.

This includes:

- 2080 hectares of Carrai State Forest, transferred as part of the *National Park Estate (Reservations) Bill 2018*, which has become part of Willi Willi National Park
- 1382 hectares of the Mount Boss State Forest being permanently protected. and is now known as Kindee Creek State Conservation Area
- 590 hectares of the Oakes State Forest being added to Gumbaynggirr National Park

In addition to the national park additions, more than 20,000 hectares of state forest have been set aside as new koala reserves, to be dedicated as flora reserves under the *Forestry Act 2012* and managed for their conservation value by NPWS.

The Government has also allocated \$20 million to a koala land acquisition program to purchase land containing priority koala habitat to add to the national park estate. Three properties have so far been purchased, including the 2164-hectare Tugalong Station property, in the Southern Highlands, which was purchased on 31 January 2019. Tugalong Station contains high-quality koala habitat. The property sits within the Mid Highlands Link, a habitat corridor that supports an estimated koala population of at least 1000 individuals.

## Private land

Private landholders manage many areas that may provide koala habitat. LLS provides targeted landholder information and support packages on all threatened species, including koalas.

Further to this, LLS is partnering with the Department of Primary Industry and the EES to deliver a research project under the NSW Koala Strategy to help identify areas of koala occupancy in private native forests in north-east NSW. This work will help inform future engagement with landholders and subsequent revisions of the Land Management and Private Native Forestry Codes of Practice.

In addition to the koala habitat conserved on public land, the BCT is supporting the conservation of koala habitat on private land. Under its Conservation Management Program, the BCT runs conservation tenders in targeted regions of NSW to encourage private landholders with important koala habitat on their property to enter into in perpetuity conservation agreements. Landholders successful in the tender process receive annual payments for implementing conservation actions determined in the agreement.

## Identification and protection of koala habitat

Habitat loss and fragmentation has led to a reduction in koala distribution since European settlement and has significantly increased the koala's vulnerability to many other threats. In response to the ongoing threat, the NSW Government has focussed on developing a consistent approach to identifying koala habitat across land tenures and decision frameworks.

In 2016, the EPA completed a three-year koala mapping program. The program comprised three core projects:

- a baseline map of koala occupancy to provide a more accurate picture of where koalas are located across NSW. This map was prepared by the then Office of Environment and Heritage (OEH) (Predavec *et al.* 2015)
- a pilot project trialing three different mapping approaches to assess their suitability for managing koalas in State forests (EPA 2016)
- a predictive koala habitat model which uses a range of environmental variables to produce a map of koala habitat on the North Coast. This map was prepared by the Department of Primary Industries (Law *et al.* 2017)

The outputs of this program are being used to inform how koala habitat is identified and managed in areas subject to native forest harvesting on public land.

Building on this initial program, the NSW Government is developing a state-wide koala habitat information base, which captures the best available state-wide information on koala habitat and occupancy. Some of the key data layers included in the pilot version of the koala habitat information base include:

- **regionalised models that spatially predict koala habitat suitability for the whole of NSW.** The models use archival koala records and explored how they related to spatial predictors like climate and soil properties.
- **the latest iteration of the Koala Likelihood Map (KLM).** The KLM was developed by OEH in 2014, originally for the EPA to use in forestry. It is a useful tool that predicts, based on past records, the likelihood of koalas occurring across NSW. Data supporting the KLM are currently being updated through targeted field surveys as well as through a Community Wildlife Survey.
- **a model of trees that koalas prefer.** This provides a measure of the likelihood of finding a tree species that koalas are known to use for food or shelter at any location in NSW. This model was informed by a review of koala tree use across NSW (OEH 2018b)
- **Areas of Regional Koala Significance (ARKS).** The Saving our Species program conducted a detailed analysis of ARKS for prioritising conservation actions. These ARKS identify key koala populations and management areas with potential for long-term viability, as well as key threats to those populations.

The state-wide koala habitat information base will inform:

- the relevant parts of the planning system including the review of SEPP 44
- future policy development to protect koalas

The NSW Government is also investing in further research including:

- committing \$300,000 over the next three years into independent research to understand how koalas are responding to intensive harvesting practices on the North Coast of NSW. This work is being led by the NRC.
- funding a project under the NSW Koala Research Plan that assesses koala occupancy in private native forests of north-east NSW.

For information on measures to protect of koala habitat refer to (b) i and ii, and (b) iv.

### Likely impacts of climate change on koalas and koala distribution

Koalas occur in semi-arid habitats west of the Great Dividing Range as well as their more common temperate coastal habitats.

Research findings show that extreme weather events have adverse impacts on koalas (Adams-Hosking *et al.* 2011b; Adams-Hosking *et al.* 2011a; Briscoe *et al.* 2016; Ellis *et al.* 2010, Briscoe *et al.* 2014; Crowther *et al.* 2014; Lunney *et al.* 2012; Lunney *et al.* 2017; Gordon *et al.* 1988; Seabrook *et al.* 2011; Kavanagh *et al.* 2007).

Through the NSW Koala Strategy, the NSW Government is supporting work to identify areas of koala habitat that may help provide refuge during periods of extreme heat and drought. This information will help to inform where to focus conservation effort to help koalas persist through intense heat and drought events.

The NSW Government is also funding research under the NSW Koala Research Plan related to the impacts and mitigation of climate change on koalas, including:

- a cross-disciplinary approach to characterising koala population status, landscape and climate refugia across the Blue Mountains region, to inform long-term management.
- maximising outcomes for koalas from private land conservation investment, including climate change considerations.
- understanding and mapping how thermal and dietary constraints combine to restrict koala habitat and determine refugia.

(e) the environmental, social and economic impacts of establishing new protected areas to conserve koala habitat, including national parks

Land acquisition for future reservation is guided by the NSW National Park Establishment Plan 2008 (DECC 2008b): <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Parks-reserves-and-protected-areas/Parks-management-other/new-south-wales-national-parks-establishment-plan-080052.pdf>

General information about how the NSW Government makes decisions regarding the acquisition of land for the national parks system is available at: <https://www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/establishing-new-parks-and-protected-areas/deciding-on-land-for-new-parks>.

Specific information on the process for purchasing land with priority koala habitat is provided at: <https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/programs-legislation-and-framework/nsw-koala-strategy/purchasing-land-with-priority-koala-habitat>

Land that is acquired for new parks may create social and economic changes in local communities. NPWS assesses these changes and their predicted impact as part of the decision-making process to acquire land. Further information about this assessment is located at: <https://www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/establishing-new-parks-and-protected-areas/acquiring-land-for-new-parks/assessing-community-benefit>

(f) any other related matter.

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