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STAND UP FOR NATURE SUBMISSION: WHOLE OF GOVERNMENT KOALA STRATEGY; SAVING OUR SPECIES DRAFT STRATEGY AND REVIEW OF STATE ENVIRONMENT PLANNING POLICY 44—KOALA HABITAT PROTECTION

Introduction

Stand Up For Nature is an alliance of environment, wildlife and heritage groups in support of strong biodiversity and native vegetation laws in NSW. Together we represent tens of thousands of people who want the NSW Government to safeguard the future of our unique wildlife, and our healthy soils and water resources.

Member groups include the National Parks Association of NSW; the Nature Conservation Council of New South Wales; the Total Environment Centre; WWF; Humane Society International; The Wilderness Society; BirdLife Australia; Colong Foundation for Wilderness; National Trust; International Fund for Animal Welfare and WIRES.

Our organisations appreciate the opportunity to comment on the whole of government koala strategy (the strategy), the Saving Our Species iconic koala project (the SOS project) and the Explanation of intended effect: State Environment and Planning Policy 44 (Koala Habitat Protection) (SEPP 44). Please note, NPA and NCC have made submissions on SEPP 44 in late 2016 prior to the deadline being extended. We have reattached NCCs submission at the end of this document in Appendix 1, NPAs is contained in the separate NPA submission to the consultation.

General comments

Current government policy settings undermine the intent (to halt and reverse declines in koala populations) of this consultation. If these settings are not changed then the goal of protecting koalas will be extremely unlikely to be achieved. Particular areas of concern surround policies that are driving, or will soon drive, habitat loss including:

1. The repeal of the *Native Vegetation Act 2003* and the introduction of sweeping self-assessable code-based clearing;
2. The on-going intensification of native forest logging and government's efforts to reduce industry responsibility for environmental protections via the new Integrated Forestry Operations Approval;
3. Continued urban expansion in coastal areas;
4. Large infrastructure projects such as the Pacific Highway;
5. Ineffective regulation of Private Native Forestry (PNF) and uncertainty as to the government's intentions in regards the review of PNF as recommended in the Review of Biodiversity Legislation;
6. The government's apparent abandonment of the National Parks Establishment Plan and a reluctance to create National Parks;
7. Changes to the management of and increased ease of disposal of Crown Land via the new *Crown Land Management Act* 2016 and;
8. Ineffectiveness of local and state government in implementing SEPP 44.

The issue of habitat loss and reluctance of the NSW government to permanently protect habitat is key to the problems facing koalas. Unfortunately, the Chief Scientist's report fails to pay adequate attention to the major policy settings surrounding habitat destruction. In fact the report devotes little attention to the recent changes in land clearing legislation, and no effort was made to assess what impact on koalas may result from the proposed changes.

The Chief Scientist's report therefore does not offer the maximum opportunity to protect koalas. This is hugely disappointing and, unless the whole of government strategy that results from the report addresses significant

shortcomings, the strategy will be a missed opportunity for the NSW government to genuinely protect the world's favourite animal.

We begin our submission by outlining why habitat is important for koalas and why current policy settings are diametrically opposed to the protection of habitat. We then address climate change, the interaction between land cover and climate change and the contribution of native vegetation clearing to carbon emissions. The recommendations in the Chief Scientist's report are then addressed in turn, and SOS and SEPP 44 follow those. As far as possible we have endeavoured to comment on each element in turn. However, where points contained in the Chief Scientist's report are also relevant to the SOS project and SEPP 44 we have drawn attention to this relationship. Because of this overlap, there is some repetition in places.

Habitat, land clearing and reservations

Although section 3.4 begins to address the importance of protecting koala habitat, there is no explicit recommendation to protect koala habitat in the Chief Scientist's report. Neither the identified 'key areas' of a whole of government koala strategy or the identified 'desired outcomes' on page v include the protection of koala habitat. Although we recognise that there are multiple threats besides habitat loss acting on koalas, including dog attack, vehicle strike and disease, we contend that these are often a consequence of habitat loss or fragmentation. The protection of habitat is therefore the vital first step in dealing with the flow-on threats. In fact, a 2015 review of koala conservation stated that the protection of existing habitat should be the priority for koala conservation, as habitat restoration is both difficult and expensive (McAlpine et al. 2015). ***Our recommendation: the whole of government strategy clearly and explicitly identifies the need to protect existing habitat on both public and private land***

Koalas select mature forest age-classes with lower levels of disturbance from logging and fire (NSW Environment Protection Authority 2016) and larger feed trees (Moore and Foley 2005)—likely because larger trees are perceived as larger food patches (Moore and Foley 2005). Therefore activities, like intensive native forest logging on public land, that result in smaller-diameter trees and remove a high proportion of basal area are not compatible with koala conservation (Smith 2004). The belated, but welcome, gazettal of the Murrah Flora Reserves is a tacit admission that intense native forest logging and koala habitat conservation are inherently at odds. ***Our recommendation: remove native forest logging from public koala habitat as a matter of urgency, and ensure that the pending review of PNF strengthens protections for koalas***

Similarly, land clearing for urban development and agriculture render the landscape increasingly hostile to koalas. In southern NSW, a combination of land clearing for agriculture, intense wood chipping of native forests and climate change (lower rainfall and higher temperatures) have acted in concert to reduce the population to under 100 when once there was a pelt trade centred on the area (Lunney and Leary 1988, Lunney et al. 2014).

Environment groups, including NPA and the Western Woodlands Alliance, have identified multiple reserve priorities for koalas. The Western Woodlands Alliance has focussed on areas west of the Great Dividing Range and ensuring connectivity between these areas and with eastern NSW (Paull and Hughes 2016). NPA has identified several reserve proposals for koalas between Port Stephens and the Queensland border (Love and Sweeney 2015). The largest of these is the Great Koala National Park (GKNP) which would add 175,000 hectares of state forest to an existing 140,000ha of National Park to protect an estimated 4,500 koalas, including two of the most important metapopulations in NSW (Scotts 2013). The proposed reserve closely matches the areas that the NSW Office of Environment and Heritage (OEH) identified, with a high degree of confidence, as being most likely to contain koalas (NSW Office of Environment and Heritage 2014). The GKNP is particularly important because the Coffs Harbour population is described as stable to slowly declining, meaning that decisive action to protect habitat has a strong chance of recovering koala numbers. The most likely explanation for this population remaining relatively stable despite urban expansion and intensifying native forest logging is that Bongil Bongil National Park is acting as a source of koalas (Lunney et al. 2016). This highlights the value in removing threats from high quality koala habitat (Bongil Bongil was once part of Pine Creek state forest and subject to logging). Because we know that even small changes in population structure can trigger population declines (Lunney et al. 2002), it is vital that koala habitat is protected now to reduce threats. ***Our recommendation: commit to, and establish a timeline for, the gazettal of the Great Koala National Park and other koala reserve proposals***

The Great Southern Forest (GSF) proposal, in the south of NSW, proposes logging be removed from all state forests in the Southern and Eden Regional Forest Agreement regions and that novel funding mechanisms, such as carbon credits,

be explored to fund management. Although the majority of the koalas remaining in the far south are contained within the Murrah Flora Reserves, the GSF would provide for the long-term recovery of koala populations in the south east of NSW. ***Our recommendation: commit to, and establish a timeline for, the gazettal of the Great Southern Forest***

The Chief Scientist report states that "the national parks estate provides a solid foundation for landscape conservation and has a key role to play in protecting koalas". We agree with the key role of National Parks in nature conservation, but it is also very important to recognise that the National Park estate is heavily biased towards steep, infertile lands and away from the more fertile coastal lowlands, particularly in northern NSW, where the threats are greatest (Pressey et al. 1996, Pressey et al. 2002). Because koalas prefer more fertile forests on the coastal lowlands (Lunney et al. 2016), in turn because they select feed trees with greater nitrogen content in the leaves (Moore and Foley 2005), this reserve bias is, in effect, a bias away from high quality koala habitat. It is for this reason that most koalas are found outside of the National Park system (Department of Environment and Climate Change NSW 2008). Therefore urgent efforts must be made to address this bias via adding coastal forests to the reserve network. ***Our recommendation: high quality koala habitat on fertile soils on the coastal lowlands be protected in the reserve system as a matter of priority***

A further threat to koala habitat results from bell-miner associated dieback (BMAD). BMAD is a complicated chain of ecological events, triggered by the removal of canopy by logging, that results in the death or dieback of canopy species (Wardell-Johnson et al. 2006). BMAD is a key threatening process in NSW (NSW Scientific Committee 2008), and currently affects areas of koala habitat in north coast forests. ***Our recommendation: human activities that promote or trigger BMAD be excluded from koala habitat as a matter of urgency***

The availability of areas for habitat restoration has been identified as a key factor impeding the recovery of koalas on the Koala Coast in Queensland (Ng et al. 2014). The major reason for this is that urban and other intensive land uses are unavailable for restoration. This casts doubt on the wisdom and cost-effectiveness of primarily focussing koala habitat protection on valuable private land on the coastal lowlands (where high-value agriculture may be preferable to landholders, such as blueberry cultivation on the Coffs Coast, or where urban development may mean it is more desirable to clear land for sale) and ignoring opportunities on public land. It also clearly indicates that clearing more koala habitat is the opposite of what is required, as habitat restoration is a key to recovering koala populations. We note that the Great Eastern Ranges Initiative, which focuses on restoration on private land to link protected areas along the Great Eastern Ranges, has generated much goodwill and could help to achieve habitat restoration on private land. ***Our recommendation: opportunities for habitat protection on both public and private land are considered in tandem in order to protect koala habitat***

Environment groups are also concerned with recent changes to the management of Crown land under the new *Crown Land Management Act* 2016. Crown land, especially in central and western NSW, represents a significant proportion of the pre-settlement vegetation within some catchments, and contain areas of valuable koala habitat. Recent changes do not provide sufficient measures to protect and enhance these areas of high conservation value, or specifically protect important koala habitat. ***Our recommendation: ensure that koala habitat is retained as State land under the new Crown Land Management Act 2016, and managed to protect the important environmental values of the land.***

Climate change

Increasing and extreme temperatures, lower rainfall, and drought has already dramatically affected koala populations in southern NSW (Lunney et al. 2014), on the Liverpool Plains (Lunney et al. 2012) and in the Pilliga Forest (Paull 2013). Land clearing is one of the major drivers of regional climate change, having been shown to result in changed (reduced) rainfall patterns, higher temperatures and increasing periods of drought (McAlpine et al. 2007, McAlpine et al. 2009). A report entitled 'Clearing our Rainfall Away' was produced by Dailan Pugh, OAM, in February 2017. The report explores in detail the mechanisms behind land cover change and climate change (Pugh 2017).

Koalas are vulnerable to extremes of temperature which can cause mortality (Lunney et al. 2012). The repeal of the NSW *Native Vegetation Act 2003* is likely to see land clearing increase throughout NSW, which in turn will further drive regional climate change and negatively impact koala populations by increasing drought and heat stress.

This is the opposite policy setting that koalas require for persistence. Instead of facilitating further land clearing, the NSW government should consider how research by the CSIRO could be used to guide habitat restoration for koalas. The CSIRO indicated that large-scale regional revegetation programs could occur that would both increase the extent of native habitat in the landscape and reduce carbon emissions at minimal cost to food production (Hatfield-Dodds

et al. 2015). The Chief Scientist's report fails to acknowledge the legacy issue of historic land cover change, nor the potential for future clearing to render more areas of NSW unsuitable for koalas. This is a major omission and any future strategy based on the Chief Scientist's report should address the issue of land clearing and climate. ***Our recommendation: the Whole of Government Koala Strategy recognise the link between land cover change and climate change and propose mechanisms by which the historical impact of land cover change can be reversed.***

Besides influencing regional climate change, land clearing and native forest logging also drive national carbon emissions (Keith et al. 2014, Keith et al. 2015, Macintosh et al. 2015, Bulinski et al. 2016) and therefore threaten koalas via increasing heat stress, extreme temperatures and drought. In fact, land-based carbon has been the primary focus of the federal Direct Action policy that has seen $1.3 billion of public funds spent on reducing emissions via paying farmers to keep trees in the ground (Clean Energy Regulator 2016), while Queensland and NSW have removed land clearing legislation. In NSW, land-based carbon will be crucial in achieving the government's goal of 'net zero emissions by 2050'. ***Our recommendation: that the NSW government end native forest logging on public land and reverse land clearing legislation to maximise the contribution of the land sector to climate change mitigation efforts***

Climate modelling has indicated a likely easterly shift in the range of koalas. Therefore protecting remaining habitat in eastern NSW and undertaking large-scale revegetation programs to link eastern and western populations is key to ensuring koalas can persist in the face of climate change (Adams-Hosking et al. 2011, Adams-Hosking et al. 2012, Adams-Hosking et al. 2014, Santika et al. 2015).

The Whole of Government koala strategy

Recommendation 1: a whole of government strategy. We support a whole of government koala strategy as different Ministers have responsibility for issues that affect koalas. For example, the Planning Minister administers SEPP 44, the Primary Industry Minister, Minister for Forests and Lands and Environment Minister are responsible for native forest logging and the Environment Minister for creating protected areas. This has meant that land-use decisions have been disjointed and not in the best interests of koalas.

Despite supporting a whole of government approach, we question as to whether this is indeed such a proposal. Although the Chief Scientist cites the necessity of a cross-tenure approach to 'conservation management' and 'threat mitigation' (Recommendation 7) she later qualifies this by stating that only uneconomic state forest land should be considered for transfer to the Office of Environment and Heritage (OEH) (pg. 32). Koalas prefer more fertile forests due to the production of more nutritious leaves (Moore and Foley 2005, Lunney et al. 2016), which are also favoured for logging due to higher growth rates. This in effect excludes forestry land from being considered for reservation, meaning that one of the largest managers of public land in the state is excused from having to protect koalas. ***Our recommendation: the whole of government strategy should protect habitat that is important for koalas, rather than habitat that is politically convenient to reserve, so that effective koala conservation is the result***

We support the goal of stabilising and increasing koala population numbers. However, it is our view that the strategy will struggle to be effective under current policy settings in regards land clearing and forestry on public and private land, which means that the goal is almost certainly unachievable. We draw attention to recent research that classed temperate forests in south-east Australia (i.e. koala habitat) as a 'crisis ecoregion'. Crisis ecoregions are those that have lost over 10% of their extent since 1993 and where habitat loss is greatly outstripping protection (Watson et al. 2016). This illustrates clearly the tensions between policies that potentially increase (land clearing) or maintain (forestry) habitat destruction and the goal of increasing koala populations.

Recommendation 2: improve data. We support the goal of increasing knowledge on koalas in NSW. In fact, the population estimate of 36,000 koalas in NSW (Adams-Hosking et al. 2016) quoted in the Chief Scientist's report highlights the need for better data. We are sceptical of the figure—although we recognise the figure was accompanied by information that the uncertainty around the estimate was high (70-100%) and that the trends of the populations broadly match other estimates (McAlpine et al. 2015, Adams-Hosking et al. 2016).

Our scepticism stems from three areas: first, accounts from koala carers across the NSW coast imply that local populations have declined and, in some cases, largely disappeared. In addition the Pilliga and Gunnedah inland populations are known to have declined dramatically since the EPBC listing of the koala in 2012. (Lunney et al. 2012, Paull 2013, Crowther et al. 2014). Second, the Australian Koala Foundation (AKF), that conducts independent field research on koalas (the 36,000 estimate is based on expert opinion, not field data), estimates a population of 8,610-

11,250 based on the area of existing habitat available (derived from AKF mapping). Finally, the 36,000 figure is significantly greater than the 21,000 estimated by the federal government in 2010 at the time of the EPBC assessment, and greater even than the 31,400 estimated in 1990 (Department of Environment 2014). The Chief Scientist's report does not adequately explain the discrepancies between the latest estimate and those previous estimates, and appears to select the most optimistic figure where a range and/or recognition of uncertainty may have been more appropriate.

Our recommendation: the whole of government strategy better presents the population estimate and uncertainty around the estimate and includes the need for analysis of any new population data gathered in order to inform a reassessment of both the state and federal listing of the koala.

Recommendation 3: a state-wide koala habitat map. We are sceptical of the recommendation to produce a predictive koala habitat map.

Segmentation modelling

Habitat mapping is based on vegetation mapping, and NSW does not currently possess a high quality vegetation map. Recent efforts to model native vegetation, rather than use accurate techniques such as digital aerial photographic interpretation (Maguire et al. 2012) have used segmentation modelling. This maps resulting from this technique have been shown to be seriously flawed (Hunter 2016, Hunter and Lechner 2016, Roff et al. 2016). We therefore have little confidence that a predictive habitat map based on segmentation modelling would accurately reflect koala habitat.

EPA mapping pilot

The NSW Environmental Protection Authority (EPA) recently undertook a koala habitat mapping pilot project (NSW Environment Protection Authority 2016) with the goals of identifying a mapping methodology for koala habitat, trialling different mapping methods, producing management-scale mapping and determining how the mapping could be used in the regulation of forestry operations. The pilot found that mapping could only be used to distinguish suitable and unsuitable habitat based on floristic composition and that it didn't predict the occurrence of koalas. Although identifying habitat is useful in order to protect koala habitat (unoccupied habitat must also be protected in order to allow population recovery), the lack of ability to predict koala occurrence means a map alone is insufficient to protect koalas. The EPA finding, that koala occurrence was only weakly correlated with habitat type, is due to the influence of disturbance history (logging and/or fire) and socio-biology on koala distributions. ***Our recommendation: koala habitat (i.e. vegetation types) is mapped using digital aerial photographic interpretation, and this information complemented with on-ground field surveys by ecologists to determine the locations and trends of koalas.***

Recommendation 4: improve outcomes in the planning system. Improvements in the planning system are crucial in order to reduce the impact of urban development on koala habitat. We note that there is a process underway to review SEPP 44, though as stated in NCCs submission in late 2016 (Appendix 1) much of the detail required to assess what changes will result from the review are contained in 'guidelines' that have not yet been released to the public.

Ineffectiveness of SEPP 44 to date

However SEPP 44 has, to this point, been ineffective with only four local governments having developed and adopted Comprehensive Koala Plans of Management (CKPoMs) in the 22 years since the introduction of SEPP 44. This highlights the importance of state government leadership in ensuring koala habitat protection in the absence of leadership from local governments.

Proposed Local Planning Direction

However, there are also issues of concern and outstanding questions in the changes to SEPP 44. For example, core koala habitat identified under SEPP 44 should currently be incorporated into an environmental protection zone or have special provision to control development under Clause 15. However this requirement is to be removed and instead put into a Local Planning Direction (LPD) that will direct councils as to how they must protect koala habitat. It is unclear from the Explanation whether the requirements will be the same as at present.

Environmental zoning

Further, we are concerned both about how koala habitat is to be protected by zoning, and the interaction between the new environmental zoning approach on the north coast and the revised SEPP. The LPD, effective since 14th April

2016, 'Application of E2 and E3 Zones and Environmental Overlays in Far North Coast LEPs' has implications for the revised SEPP: this change to zoning meant that land could only be zoned environmental if conservation had been the primary function of that land for the prior two years. For example, any land over which a Private Native Forestry (PNF) Property Vegetation Plan was granted prior to April 2014 would likely be ineligible for environmental zoning on the grounds that forestry was the primary land use. In northern NSW, this accounts for approximately 390,000ha. This in effect removed the ability of local government to zone private land into an environmental protection zone—as supposedly required under SEPP 44.

It is unclear how the proposed koala habitat LPD will interact with the LPD on E2 and E3 zones, but there is nothing to suggest that it will replace or have legal authority over the LPD on E2 and E3. If that is the case then the revised SEPP essentially confers little extra protection for koalas as the north coast councils are those with the most extensive koala habitat and largest koala populations. Should the LPD on E2 and E3 zones be extended state-wide, then the confounding effect on local governments would also be manifested on koala populations elsewhere.

Implications of changes to definitions of koala habitat

The proposed changes to the current koala habitat definitions ('core' and 'potential') have scope to strengthen the SEPP by ensuring that all identified tree species are considered habitat, and that non-listed species are deemed habitat if a koala is present. However, it is not possible to assess whether these changes to the definition will result in more protection to habitat as the definitions that will identify the plant communities have not been released. For example, what proportion of trees in a plant community will need to be a listed species for that community to be considered koala habitat? Which plant communities will therefore be defined as koala habitat? How will landholders or local governments identify the location of these plant communities? How will current CKPoMs be amended to include the new definitions and what will happen to identified core and potential koala habitat in the meantime?

SEPP 44 interacts with Private Native Forestry (PNF) via the identification of core and potential koala habitat on private land and appropriate zoning of that land determining whether PNF can take place. Since 2007 2515 PNF Property Vegetation Plans (PVPs) for PNF covering 342,000 hectares of land have been approved in northern NSW. It is not possible to say what proportion of these licences have resulted in felling as this information is not readily available from the EPA.

In February 2015 in the Coffs Harbour LGA alone, 185 PNF licenses had been issued since 2007. Taking a conservative property size estimate of 40ha, this equates to 7,400ha, 6% of the LGA or 13% of all private land. In November 2015, NPA undertook an analysis of the number of PNF PVPs within 10km of the boundary of NPAs proposed Great Koala National Park. There were 725 covering an area of 65,292ha.

The current Code of Practice for PNF[1] states that 'Forest operations are not permitted within any area identified as 'core koala habitat' within the meaning of State Environmental Planning Policy No. 44 – Koala Habitat Protection.' It is beyond reasonable doubt that the lack of action in developing CKPoMs has resulted in PNF approvals having been granted where they should not have been, and the inclusion of the word 'core' immediately raises a question mark as to what happens when the definition of core koala habitat is removed as proposed. ***Our recommendation: the government defines 'core' habitat as land with a resident population of koalas, as evidenced by recent sightings or signs of koala usage, and high quality habitat (that may be currently unoccupied) with historical records of a population. 'Potential' habitat should be defined as native vegetation where known feed trees constitute at least 15% of the total number of trees in the upper or lower strata of the tree component and native vegetation with recent sightings or evidence of koala usage.***

Interaction between SEPP 44 and the LLS Act

The interaction between the proposed changes to the SEPP and the recently introduced *Local Land Services Amendment Act* (LLS Act) are not clear. The breadth of the codes under the LLS Act do not inspire confidence that koala habitat will be adequately protected, and WWF estimated that up to 2.2 million hectares of koala habitat could be cleared under the equity code alone (Eco Logical Australia 2016). This does not count the areas of woodland and clumps of paddock trees that will be at risk through the efficiency codes[2] and which are also very important for koalas (Crowther et al. 2014). The Environment Minister Speakman responded to WWFs concerns by stating that

[1]http://www.epa.nsw.gov.au/resources/pnf/130563PNFcdNth.pdf

[2]Paddock trees: pest paradises or bastions of biodiversity?
https://d3n8a8pro7vhmx.cloudfront.net/natureorg/pages/144/attachments/original/1465507046/FACT_SHEET_-_Paddock_Trees_.pdf?1465507046

core koala habitat would be protected*[3] and the Government has flagged that core koala habitat will be excluded from application of the Codes, through provisions in the Regulations*[4]. However the new SEPP proposes to change or remove the definition of core koala habitat so it is unclear the exact extent of koala habitat that would be excluded from the codes. We would argue that all koala habitat (not just core koala habitat) be excluded from application of the codes—this is critical to achieve the goal of recovering koala populations, rather than slowing declines. ***Our recommendation: exclude code-based clearing via the LLS Act from koala habitat—including paddock trees and small woodland patches used as stepping stones and shelter.***

Recommendation 5: improved outcomes via the *Biodiversity Conservation Act 2016 (BC Act).*

Land clearing
We strongly urge the NSW government to protect koala habitat from clearing under *both* the BC Act and LLS Act. We note that the Chief Scientist's report does not mention the LLS Act and the potential for clearing under the LLS Act, via self-assessable codes, to impact koala habitat. As contained in our response to Recommendation 4, the breadth of the clearing codes mean that serious impacts to koala habitat are likely to occur. We repeat our recommendation to exclude code-based clearing via the LLS Act from koala habitat—including paddock trees and small woodland patches used as stepping stones and shelter.

Further, there is scope to protect koala habitat via the BC Act. For example, impacts on koala habitat should be identified as 'serious and irreversible impacts' and excluded from offsetting under the new biodiversity offsetting scheme, including for major projects. Koala habitat could also be identified as an Area of Outstanding Biodiversity Value under the BC Act, and protected for further clearing that way. ***Our recommendation: declare koala habitat as an Area of Outstanding Biodiversity Value, and identify impacts on koala habitat as a 'serious and irreversible impact' for the purpose of the BC Act.***

Private land conservation
There are opportunities for positive outcomes to accrue from the government's focus on private land conservation via the BC Act. For example, stewardship payments could be targeted at areas of important koala habitat in lieu of issuing Private Native Forestry (PNF) licenses, or existing PNF licenses in important koala habitat could be 'bought out' in return for a conservation covenant. This approach would work best by protecting habitat on private land alongside the establishment of new protected areas on public land, rather than as a replacement for protecting public land. ***Our recommendation: the government prioritises private land conservation in areas where public land reserve gains can also be achieved in order to maximise efficiency and cost-effectiveness.***

Recommendation 6: guide and incentivise collaborative best practice. We agree that there is need to urgently improve the way in which existing activities impact upon koala habitat and are conducted in areas with koala populations.

Land clearing and farm certification
If the government accepts this recommendation it will be necessary to exclude koala habitat from clearing under the BC and LLS Acts. The government could consider a certification scheme for landholders that manage their land in such a way as to maintain or improve koala habitat. Farm certifications schemes exist in the USA to encourage predator-friendly farming(Johnson and Wallach 2016) and certification schemes have been recommended by the Wentworth Group of Concerned Scientists as a way to reward farmers who manage their land to maintain 'natural capital'(Wentworth Group of Concerned Scientists 2015). The Australian Koala Foundation has implemented a koala-friendly farming certification scheme in Queensland that could be considered for NSW*[5]. ***Our recommendation: exclude koala habitat from clearing under the BC and LLS Acts and consider the development of a farm certification scheme to reward responsible farmers.***

*[3]Sydney Morning Herald 13th October 2016. http://www.smh.com.au/environment/conservation/prime-koala-habitat-threatened-under-land-clearing-proposal-wwf-20161013-gs1d9v.html
*[4]The Government's FAQ's on the land management website says that "*There will be some special categories of land on which no clearing under any codes will be permitted, including coastal and Ramsar wetlands, littoral rainforest, core koala habitat, critically endangered ecological communities, old growth forests and high conservation value grasslands. This will be agreed jointly by the Minister for Primary Industries and the Minister for the Environment and will be detailed in the Regulations. Individual codes will also be able to specify additional land that cannot be cleared under the code*". https://www.landmanagement.nsw.gov.au/land-management-and-regulatory-maps/#faqs
*[5]https://www.savethekoala.com/sites/default/files/docs/conserve/ecolabel.pdf

Private native forestry

The government committed as part of the Review of Biodiversity Legislation to review regulations around PNF. ***Our recommendation: if the government is to ensure that best-practice outcomes happen in the context of PNF, it will be necessary to audit the effectiveness of PNF in protecting koala habitat to this point and to increase the ability of the EPA to assess the accuracy of PNF applications (currently applications are self-assessed by the landholder and subject to a desktop review by the EPA) and to periodically audit landholders to ensure compliance.***

Native forest logging

The NSW State of the Environment Report 2015 showed that native forest logging is now responsible for the largest loss of canopy on an annual basis in NSW, and the trend is rising (NSW Environment Protection Authority 2015). This indicates that logging is intensifying over time, and as a consequence the public forest estate is likely to be getting younger. This corroborates the EPA view, expressed in the Chief Scientists report, that logging under 'regeneration harvesting' intensified in 2007 (pg. 17). Both the EPA (NSW Environment Protection Authority 2016) and independent scientists (Moore and Foley 2005) have found that koalas prefer larger trees for feeding, and the EPA also found that they prefer mature forest age-classes and less disturbance from logging.

The current intensifying trend in industrial native forest logging cannot therefore be assessed as best-practice from a koala conservation perspective, a view shared (Smith 2004) by an expert scientist (Andrew Smith) that sat on the EPA's panel for the mapping pilot. Incredibly, the EPA does not possess data on the age-class distribution of public native forests managed for timber production, despite this being a key indicator as to the industry conforming to the principles of Ecologically Sustainable Forest Management. A further consequence of native forest logging is the promotion of bell-miner associated dieback (BMAD). BMAD is a complicated chain of ecological events, triggered by a removal of canopy, that results in the death or dieback of canopy species (Wardell-Johnson et al. 2006). BMAD is a key threatening process in NSW (NSW Scientific Committee 2008), and currently affects areas of koala habitat in north coast forests.

Far from seeking to improve outcomes from logging operations for koalas, conservation groups are of the view that the development of a new Integrated Forestry Operations Approval, that will remove the need to conduct pre-harvest surveys for koalas, will not result in best practice. Instead, it is viewed as an attempt to lower the cost of logging operations by decreasing the necessity of on-ground surveys. As the EPA mapping pilot showed, simply identifying koala habitat will not accurately identify koala occurrence.

Our recommendation: to ensure koala populations are not further jeopardised by logging, logging should be excluded from all koala habitat on public land until the effectiveness of existing prescriptions in protecting koalas is assessed, the age-class distribution of forests determined and compared to that at the signing of the RFAs, and the recommended studies in regeneration harvesting areas completed.

Urban development

In regards best practice urban development, we draw the government's attention to Koala Beach*[6] on the NSW north coast. This development occurred in conjunction with AKF and involved the development occurring around the koala population, rather than the koala population having to adapt to a development that didn't consider their needs. Cats and dogs are not permitted in the development. Koala Beach offers an example of how development can occur within the range of koala populations while as far as possible maintaining the habitat features that koalas require and minimising other threats such as dog attack and vehicle strike. We would support the government in guiding developers to adopt these development standards in koala habitat, but would also contest that they should also occur where other threatened forest species (e.g. gliders) occur. We note that the industry is likely to resist calls to increase development standards to that of Koala Beach, as it means 'sacrificing' some valuable land. The NSW government therefore needs to show leadership to improve development standards. ***Our recommendation: the NSW government identifies best-practice urban development for koalas and implements this via the review of SEPP 44***

Recommendation 7: Identify priority areas of land for conservation management and threat mitigation. This recommendation is as close as the whole of government strategy comes to recommending the protection of koala habitat (see section entitled 'habitat'), though it is not explicitly stated.

*[6]https://www.savethekoala.com/our-work/koala-beach-housing-development

Private land conservation shouldn't replace formal reserve creation
We support a cross-tenure landscape approach, but do not believe that a focus on private land management can replace the creation of new protected areas. This is because much koala habitat on the coastal lowlands is likely to be expensive to acquire as it is high value either for agriculture or urban expansion and therefore the amount of habitat likely to be protected is low (see next section). Rather private land conservation should occur as a complementary mechanism to the creation of new protected areas—either by a tenure change on public land or acquisition of private land. The Great Eastern Ranges Initiative is an example of a successful private land conservation project that has generated much goodwill among landholders.

Policy settings undermine efforts
We note that the NSW government recently announced that $10 million would be made available to purchase important koala habitat. While this is welcome investment, it will not be anywhere near sufficient to make a meaningful contribution to koala conservation. In fact, this sum would only purchase 6000ha of land on 2015 prices*[7], which are likely to be a conservative estimate in more fertile parts of the state. To put this in perspective, 10 properties applying the equity code could clear this in a single year. Much greater investment (in the order of hundreds of millions of dollars) is needed to procure large areas of well-connected koala habitat, and reservations should also target important parcels of public land as this is a cost-effective means of protecting habitat. For example the Great Koala National Park would remove a key threat, logging, from 175,000ha of koala habitat for no purchase of land to protect two of the most important koala metapopulations in NSW containing an estimated 4,500 koalas. Targeting private land acquisition around the boundaries of the GKNP would in turn be a means of improving boundary configuration, enhancing connectivity and increasing the area of koala habitat protected. ***Our recommendation: gazette the GKNP, and complement the GKNP with targeted private land investment in the order of hundreds of millions of dollars to acquire priority habitat on private land***

The Chief Scientist's report recognises that remnant habitat is an important predictor of koala use of planted (i.e. restored) habitat, and states that connecting remnant paddock trees by planting food and shelter trees could increase habitat area and connectivity in the landscape. Unfortunately, current government policy is diametrically opposed to achieving this outcome. The LLS act, via the 'efficiency codes', is set to dramatically increase the number of instances in which code-based clearing of individual trees and groups of trees can occur while the equity code is likely to result in the rapid contraction of available koala habitat unless it is appropriately excluded from application of the Codes (see our comments above). As the Chief Scientist's report notes, configuration of habitat is an important determinant of koala activity (McAlpine et al. 2006, Moore et al. 2010) and therefore current policy settings that are set to reduce the total area of habitat, increase fragmentation and decrease connectivity will work against efforts to protect koalas. ***Our recommendation: the government must exclude the clearing of koala habitat, including non-feed habitat used for shelter and movement (Crowther et al. 2014), under both the BC and LLS Acts if it is to have any chance of meeting the goals of the strategy.***

Recommendation 8: The government convene two symposia. We are not optimistic about the outcomes from symposia. We note that there has been much research conducted on koalas (with the exception of research analysing the impact of logging on koalas) and that the policy and conservation challenges are well known (McAlpine et al. 2015). We also question the inclusion of 'land managers' in a symposium to develop a koala research plan: a research plan should target the outstanding research questions that must be answered to ensure koala conservation and should be free of influence from self-motivated 'land managers'. We also note that non-governmental conservation organisations (who do not have a financial motivation unlike some 'land managers') will also be able to add value to the development of a research plan given their on-ground experience. It is disappointing that the Chief Scientist chose not to recommend the involvement of NGOs in the development of the research plan. ***Our recommendation: ensure that any koala research plan will deliver on ground outcomes for the conservation of the species, address contradictory policy signals and include environment groups in the development of the plan.***

There may be some benefit in a symposium of carers to share knowledge on best-practice rehabilitation of koalas. Key to ensuring optimised delivery and support of carers will be financial and logistic support from government. We note that, following the relaxation of land clearing laws in Queensland, the number of wild animals requiring rescue has dramatically increased*[8]. On the Gold Coast, carers have reported a 30% rise in the number of koalas requiring

*[7]https://www.ruralbank.com.au/assets/responsive/pdf/publications/farm-land-values-2015.pdf
*[8]http://www.abc.net.au/news/2016-04-05/spike-in-native-animal-injuries-land-clearing-habitat/7301942

treatment as a result of urban sprawl*[9]. ***Our recommendation: change policy settings to deal with the root causes of why koalas are coming into care (i.e. land clearing, urban development, infrastructure development and native forest logging) rather than rely on carers to pick up the pieces resulting from government policy.***

Recommendation 9: The Australian Museum is the preferred repository for koala genetic samples. We have no comment on the most suitable institution for genetic sample storage.

Recommendation 10: the government facilitate the exchange of information. We welcome the fact that, unlike under Recommendation 8, the entire community is recognised in this recommendation. There are opportunities to improve the flow of information, and we support the proposals to better educate the public on koala conservation and land management.

Recommendation 11: the government draws on knowledge and shares information with local communities. As in Recommendation 8, environmental NGOs are not mentioned as a stakeholder. We contend that many environment groups, because they are comprised of members of local communities, harbour knowledge that could be of benefit in efforts to protect koalas. For example, NPA has on multiple occasions made representation to the NSW government on koala reserve proposals in northern NSW. Unfortunately, the government is currently choosing to ignore the knowledge contained in environment groups. Unless this stance changes we are sceptical that this recommendation will result in meaningful outcomes for koalas. We would also call on the government to recognise and support the role of koala rehabilitation groups, such as International Fund for Animal Welfare and the veterinarians who work with them, who deal with the impact of policy decisions on wildlife. ***Our recommendation: the government make a genuine attempt to consult with and listen to environment and wildlife groups engaged in koala conservation***

Saving Our Species

In general, we are supportive of SOS because there is a need to address multiple threats simultaneously (Lunney et al. 2007, Rhodes et al. 2011, Santika et al. 2015), and the broad threats-based approach of SOS will help achieve this. We also see no reason to question the koala management areas.

However, although SOS may have some good outcomes at local or regional levels, it is our view that given the overarching policy settings in regards land clearing and native forest logging that SOS is the equivalent of putting a finger in a dam wall. We also note that because SOS is the NSW government's replacement for recovery planning, a formal review of the NSW recovery plan for the koala should have been undertaken to ensure that SOS avoided the same pitfalls.

Our recommendation: to ensure that SOS has the best possible chance of achieving the goal of protecting koalas, one or more protected areas should be established in every koala management area to complement the SOS activities.

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*[9]http://www.abc.net.au/news/2016-12-09/influx-of-injured-koalas-a-strain-on-currumbin-hospital/8108018

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Appendix 1: NCC submission on explanation of intended effect: state environmental planning policy no 44 – koala habitat protection

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16 December 2016

NCC SUBMISSION ON EXPLANATION OF INTENDED EFFECT: STATE ENVIRONMENTAL PLANNING POLICY NO 44 – KOALA HABITAT PROTECTION

Dear Sir/Madam,

The Nature Conservation Council of NSW (**NCC**) is the peak environment organisation for New South Wales, representing over 150 member societies across the state. Together we are committed to protecting and conserving the wildlife, landscapes and natural resources of NSW.

We welcome the opportunity to provide feedback on the Explanation of Intended Effect: State Environmental Planning Policy No 44 – Koala Habitat Protection **(EIE).**

KOALAS AT RISK OF EXTINCTION

Koalas are a national symbol of Australia and an internationally renowned species. Koalas are not only important to Australia's tourism economy, but are essential when addressing conservation of biodiversity and the protection of symbolic native species. Koalas are listed as a vulnerable species under the NSW *Threatened Species Conservation Act 1995* and the Commonwealth *Environment Protection and Biodiversity Act 1999*.

Koalas are largely under threat due to habitat destruction and fragmentation, urban development, and pressures from climate change. Since 1990, Koala populations in NSW have decreased by a third of their original size. If current trends continue, the Koala could become extinct in NSW by 2055[10]. Failure of governments to effectively implement and enforce laws intended to protect koalas and koala habitat has put pressure on the species, as important Koala habitat has failed to be identified and adequately protected from destruction.

When State Environmental Planning Policy No 44 – Koala Habitat Protection (**SEPP 44**) was introduced it was intended to provide additional protection for important koala habitat. However the ability of SEPP 44 to achieve the necessary outcomes has been undermined by poor implementation, lack of absolute protections for koala habitat, weak biodiversity offsetting policies, inadequate forestry regulations and processes that facilitate major projects. These factors must also be considered when reviewing the performance of SEPP 44 in achieving environmental outcomes to date.

The government's poor management and protection of Koala habitat will result in the loss of an iconic species if action isn't taken to address the proper protection of Koala habitat, and the creation of distinct Koala conservation areas. It is in this context that the NSW Government is reviewing SEPP 44.

FEEDBACK ON EXPLANATION OF INTENDED EFFECT (EIE)

NCC welcomes the review of SEPP 44 and sees this as an opportunity to strengthen protections for koalas and koala habitat in NSW, particularly in light of the ongoing decline in koala numbers.
Unfortunately the EIE does not provide the specific wording of proposed new provisions which makes it difficult to comment on whether the proposed changes will improve outcomes for koalas in NSW. For example:

[10] Sydney Morning Herald, Fears for koalas under state government's native forest logging overhaul, 23 December 2015 www.smh.com.au/nsw/fears-for-koalas-under-state-governments-native-forest-logging-overhaul-20151223-glu3l3.html

- The new definition of koala habitat is not provided
- The wording of the proposed new Local Planning Direction under section 117 of the EP&A Act is not provided, and therefore we cannot compare existing requirements with what is proposed.
- The content of the proposed guidelines which will guide both development assessment and the making of comprehensive plans of management is not available.

Without this essential information our ability to provide constructive feedback is limited and we are unable to form a view as to whether we support the proposed changes. We strongly urge the Government to exhibit a draft SEPP and Guidelines before finalising the revision of SEPP 44.
That said, we make the following comments:

Application of SEPP
We support updating the names of local councils following recent council amalgamations. We note that Gwydir Shire Council (formerly Bingara and Yallaroi Councils) is not identified in the list of councils in the EIE, despite both Bingara and Yallori currently identified in Schedule 1 of SEPP 44. We suspect this is an oversight and suggest that Gwydir Shire Council be added to the list.

Definitions
As outlined above it is difficult to provide feedback on the proposed new definitions of koala habitat as the exact wording is not available. We do however generally support the updated list of 65 tree species, and also the proposal to amend the definition of koala habitat to include any area where koalas are present, regardless of tree species.

The development assessment process
The EIE explains the development assessment as follows:

1. Applicant to determine whether the site contains koala habitat following an assessment of vegetation
2. Where Koala habitat is established further assessment is required to determine if koalas are present
3. If Koalas are present at the site but the vegetation is not koala habitat the assessment will continue as if it were koala habitat

While the Guidelines may provide further detail on the assessment process, it is unclear on the face of the EIE how the assessment will operate in practice. For example, how is the assessment of vegetation to be undertaken? Will it be a desktop study or an onsite field assessment? In our view, a field study must be required because, firstly, mapping can be unreliable, and secondly, it is unclear how koalas would be identified on the site (for the purpose of step 3 in the development assessment) unless a field study is carried out.

Plans of management
The EIE proposes retaining the requirement to make comprehensive plans of management (in accordance with requirements in the Guidelines), but suggests that site scale plans of management will no longer be required (in cases where a comprehensive plan of management is not in place), with decision makers instead needing to consider a set of criteria set out in Guidelines.
Without seeing the content of the Guidelines, it is difficult to determine whether the uniform assessment criteria would provide better outcomes than individualised plans of management.
It is also unclear what will happen to existing site specific plans of management, and whether they will continue to have effect. This should be clarified.

Further, there is no information as to whether the Government will take any additional action to support councils to prepare comprehensive koala plans of management or finalise Plans that have already been drafted (e.g. Campbelltown, Ballina, Bellingen, Tweed). We note that to date only four comprehensive koala plans of management have been approved by the Minister – for Kempsey, Port Stephens, Coffs Harbour and Lismore councils. The failure to mandatorily require councils to develop and finalise Comprehensive Plans of Management has been one of the weaknesses of how the SEPP has operated to date. Further it is unclear whether existing Final or Draft Plans will need to be updated in accordance with the revised SEPP and Guidelines. This should also be clarified.

Local Planning Direction

The EIE suggests that Local Planning Directions (LPD) are the appropriate setting to instruct local councils on plan making and it is proposed to update and transfer the plan making functions to a Local Planning Direction. While we do not oppose this suggestion, we have not seen the proposed LPD and the updated instructions that will be given to councils.

Further, we are concerned with how the LPD for koala habitat will interact with other planning directions, particularly the Section 117 direction relating to the application of E2 and E3 Zones and Environmental Overlays in Far North Coast LEPs.

INTERACTION WITH OTHER ENVIRONMENT AND PLANNING LAWS

While we generally welcome the review of SEPP 44, we recognise that SEPP 44 alone cannot provide all the necessary protections for Koalas in NSW. As outlined above, the ability of SEPP 44 to achieve outcomes for the koala has been undermined by poor implementation, lack of strict protections, weak biodiversity offsetting policies, inadequate forestry regulations and processes that facilitate major projects. We highlight some of these additional issues below.

Lack of absolute protection for koala habitat

While SEPP 44 requires decision makers to take into account additional matters of consideration, including plans of management, when determining development applications that will impact on core koala habitat, it does not provide absolute protection for core koala habitat. That is, SEPP 44 does not prohibit outright activities or development that will impact on core koala habitat.

Overreliance on biodiversity offsetting

Weak environmental offsetting policies have allowed core koala habitat to be destroyed on the premise that impacts on koalas and koala habitat can be offset. Offsets theoretically work by protecting and managing biodiversity values in one area in exchange for impacting on biodiversity values in another area, by restoring habitat on previously cleared land or increasing the habitat quality of a patch. Improvement in the biodiversity values of an offset area is generally required to achieve a no let loss in biodiversity values. In our view, due to the inherent challenges in biodiversity offsetting[11] biodiversity offsetting is not appropriate in all circumstances. Further, recent weakening of biodiversity offsetting policies in NSW now allows the use of supplementary measures or mine rehabilitation in lieu of genuine like-for-like offsets. In our view, core koala habitat is so critical that biodiversity offsetting is not an appropriate mechanism for ameliorating impacts.

New conservation and land management laws

New biodiversity and land management laws recently introduced by the NSW Government are likely to have a significant, detrimental impact on efforts to protect and restore koalas and koala habitat. In our view, the new laws will increase land clearing across NSW due to increased reliance on code based clearing, and expansion of weak offsetting rules[12]. There is nothing in the new *Biodiversity Conservation Act* 2016 or *Local Land Services Amendment Act* 2016 which recognises the important need to protect koala habitat.

Forestry activities

Poor forestry practices on both public and private land have had significant impacts on koalas to date and must be addressed if effective protection for koalas and koala habitat is to be achieved in NSW. For example, poor regulation of Private Native Forestry practices combined with poor implementation of SEPP 44 may have resulted in the clearing of koala habitat under approved PNF agreements. Further the EPA and Forestry Corporation have been strongly criticised for failing to protect koalas and koala habitat during forestry practices on State land[13].

[11] See Walker S. et.al (2009) *Why Bartering Biodiversity Fails* Conservation Letters 2 (2009) 149-157; Maron M. et. al.(2012) *Faustian bargains? Restoration realities in the context of biodiversity offset policies, Biological Conservation* 155 141-148; Curren. M. et al. *Is there empirical support for biodiversity offset policy?* Ecological Applications, 24(4) 2014 pp 617-632.

[12] See further *The Future for Biodiversity in NSW*, *Environment groups' joint response to the consultation package of reforms to land management and biodiversity conservation in NSW*, June 2016, www.nature.org.au/media/213826/environment-groups-joint-submission_final-270616.pdf

[13] See, for example, Green Left Weekly, *Forest groups demand NSW government halt logging to save koalas*, 31 July 2015 www.greenleft.org.au/content/forest-groups-demand-nsw-government-halt-logging-save-koalas; ABC New, *NSW Forestry Corp defends logging of koala habitat*, 12 July 2013, www.abc.net.au/news/2013-07-12/koala-logging/4816422

NSW Koala Strategy

We note that the NSW Government has announced public consultation on the development of a new NSW Koala Strategy. This comes off the back of the Chief Scientist' *Report of the Independent Review into the Decline of Koala Populations in Key Areas of NSW*. This Chief Scientist's report recommends that "in addition to the current review of SEPP 44, within 12 months of receipt of this report Government should start a broader evaluation of the effectiveness of SEPP 44 as a planning tool and the Comprehensive Koala Plans of Management for protecting koalas and their habitat". In light of this recommendation it may make more sense to undertake the broader evaluation of SEPP 44 as recommended by the Chief Scientist before finalising the current review. DOPE and OEH must continue to work together on the future management of koalas and responding to the Chief Scientist's Report.

CONCLUSION

The review of SEPP 44 must now be considered in the context of the Government's plans to develop a NSW Koala Strategy. Consideration must also be given to other process, such as private native forest logging, changes to land clearing laws, and new biodiversity offsetting policies, that undermine the ability of SEPP 44 to provide adequate protection for koalas and koala habitat. The Department should continue to consult with key stakeholders, including NCC members, as it continues to review SEPP 44, and the draft SEPP and guidelines should be put on public exhibition before being finalised.

Yours sincerely,

Kate Smolski
Chief Executive Officer