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Koala Strategy Submissions
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The Clarence Environment Centre has a proud quarter of a century record as a strong advocate for the environment, environmental issues, and native wildlife under pressure from human development. We strongly support the NSW government's initiatives to help koalas persist in health in NSW, and welcome this opportunity for comment and suggestions.

This submission attempts to address all priority actions amended from the Koala Recovery Plan (2008), where relevant to our various members' experience and expertise, with the intention of helping to further the aims of the NSW Koala Strategy, and guiding a positive and long-lasting outcome for koalas. It also includes several other connected documents (with permission to reference work carried out for the NSW Wildlife Information, Rescue & Education Service (WIRES) where applicable)

- Appendix I - Forest Red Gum (*Eucalyptus tereticornis*) & Koala Connection Theory
- Appendix II - The Significance of Eucalyptus Subgenus *Symphyomyrtus* Section *Exsertaria*, and oil gland form to Koalas
- Appendix III - Expense record, typical costs for koala with chlamydia
- Appendix IV - Livestock Health & Pest Authority Review submission Nov 2011. -
A role for LHPA in wildlife veterinary care
- Appendix V - Letter to LHPA SMC Chair, Vets for Wildlife submission
- Appendix VI - Suggested Koala pen and pre-release pen designs and costs
- Appendix VII - WIRES koala rescue records, Clarence Valley 2004-2017
- Appendix VIII- Example. Daily activity sheet, in-care koala, Clarence Valley WIRES

Overview

The whole-of-government NSW Koala Strategy is to be based around priority actions set out by the Priority Action Statement (PAS) for Koalas (*Phascolarctus cinereus*). The PAS actions were amended from actions first proposed by the NSW Koala Recovery Plan (2008), and the final PA Statement was adopted by the Chief Executive of the Office of Environment and Heritage (OEH), on 25 July 2014.

Please note : While attached to this submission, appended documents [I] *Forest Red Gum (Eucalyptus tereticornis) & Koala Connection Theory* (P Edwards, redrafted 2017), and [II] *The significance of Eucalyptus Subgenus Symphyomyrtus Section Exsertaria, and oil gland form to Koalas* (P Edwards

2017) are intended to be read in conjunction as a submission to the Strategy, as well as presenting further information on points referenced by this letter.

Priority Actions, comments and suggestions

2014 PAS (Table 2)

1)

- ***Implement the objectives of State Environmental Planning Policy (SEPP) 44 and the National Koala Conservation Strategy for the conservation of koalas and their habitat in NSW.***

SEPP 44 is an instrument under the EP&A (Planning) Act. That Act is overloaded with responsibilities based around the conflicting spheres of development and conservation. Its aim is to promote human social and economic welfare, this through provision and management of land for agriculture; forests; public use; minerals (mining); water; cities, towns and villages; communication and utility services; community services and facilities, and affordable housing. Protection of the environment, including plants and animals and threatened species, is included among the top-heavy human demands. The objectives of SEPP44 cannot be met from within this legislation.

Also SEPP44 will not be considered under any Part of the EP&A Act other than Part 4, which applies to development applications. (SEPP44 Part 2 - Land to which this Part applies (b) land in relations to which a development application has been made).

The Guidelines laying out the assessment process for councils (pending) will therefore apply only to Part 4, where DAs are lodged. The SEPP will not be triggered by proposals assessed under Part 5 Environmental Assessment, including Part 5.1, Significant Infrastructure.

The CEC is of the firm belief that in most situations a revised SEPP44's objectives will be unable to be legally implemented, so will not be addressed, and that under this legislation the SEPP will again fail to protect koalas.

As the Strategy is intended to be a whole-of-government approach to koala protection, the CEC therefore strongly urges a Federal solution to conflicting NSW legislation by way of a separate comprehensive, conditional-free Koala Conservation Act, in order to properly protect koalas in Queensland, NSW and the ACT, not just in NSW.

2)

- ***Consideration will be given to amending Schedule 2 (Feed Tree Species) of SEPP 44 to include additional food tree species of koalas.***

Please refer to **Appendix I**, pages 4-6, in conjunction with attached spreadsheet **Appendix II**

3)

- ***The Office of Environment and Heritage (OEH) will determine the distribution of koalas across NSW by conducting a community-based survey***

Community-based surveys need to be ongoing, not a one-off event. Communities need a single, set, recognisable, user-friendly contact for reporting koala sightings and exchanging information (ie not Sydney-based, with electronic instructions; numbers to enter and waiting times). We suggest that local councils may, with funding support, employ a wildlife officer, whose duties would include lodging koala records on an in-house datasheet and also on the NSW Wildlife Atlas (BioNet).

4)

- ***OEH will analyse patterns of koala road deaths to enable recommendations to road managers on appropriate management measures which limit the risk to koalas on existing roads***

The simple act of lowering speed limits through wildlife (Koala) habitat is a first common-sense approach. People in general are readily adaptable to change once set in place, while any drivers who cannot develop patience and tolerance are safer where legally controlled.

Speed limits also need to be permanent, not able to be changed by an impatient few who manage to gain the attention of a local sitting member (eg, as for the Iluka Road through significant wildlife / koala habitat, where the speed limit was lifted from 80 to 100kph by the local member by way of an outdated petition).

Also, where roads are short, one-way, or recreational only, speed humps are ideal through koala habitat. (eg, on the access road to the Shannon Creek dam, south of Grafton). These also serve to give tourists time to look around at their surroundings while the children try to spot a koala. People don't always need to be in a rush.

5)

- ***OEH will analyse the impact of dogs to identify whether dogs pose a significant threat to koala populations, and alert land managers to the problem***

There is no need to waste valuable funds on this issue. The data is already available. Wildlife care records are accessible and serve as an already invaluable indicator to the problem. All dogs pose a potential threat when an unfamiliar animal enters their territory. Some dogs do quickly come to recognise and accept a koala in their patch and leave it alone, but any possible risk to a koala's life is unacceptable. Each dead koala is a potential healthy female removed from the breeding pool, a dependent joey left without a mother, or removal of an alpha male that could lead to a population collapse. The Companion Animals Act 1998 needs amending to safely restrain dogs in developed areas in koala habitat, or ban them altogether. Colourbond metal fencing should be enforced - ▪ to prevent koalas from climbing and entering dog pens, ▪ to deter dogs from terrorising a koala while on the ground, and ▪ to prevent attack on a koala through an unsubstantial, inappropriate mesh fence. Councils also need to mandate trimming of any trees and shrubs that can enable access to a dog pen by a koala. Alternatively, where a dog run includes large forest red gum trees (preferred koala food trees), the owner needs to be approached to see if the pen might be reduced or altered, to give koalas access to the trees

6)

- ***OEH will undertake and encourage other researchers to undertake population studies of koalas in a range of habitats in relation to a range of issues such as fire, drought, dogs, cars, habitat fragmentation, and climate change***

'Other researchers' must include staff and volunteers for dedicated koala care facilities, and wildlife care and rehabilitation groups whose work involves koalas. Many of the answers are already known and recorded.

The most critical requirements for koalas that dictate their health, habits and habitat are moisture in the leaves sustained by a healthy drainage line network. Fire, drought, residential development and roads all contribute in some way to climate change. A combination of heat and loss of moisture in the leaves is already having a dire impact on remaining koalas.

Please refer to **Appendix I & II** as CEC's response to this action.

7)

- *Analyse community-based survey data on koala distribution in NSW in relation to features such as habitat, tenures, catchment management authority and bioregional boundaries, and compare 2006 survey results with those of the 1986 survey.*

Please refer to **Appendix I & II** as CEC's response to this action

8)

- *Disseminate the results of the community-based survey on koala distribution in NSW, including in a standard scientific publication*

9)

- *Define the factors that determine koala habitat including soils, elevation, climate and tree species (food and shelter).*

Please refer to **Appendix I & II** as CEC's response to this action

Note: An addendum to the food tree preference list needs to include the importance of *Allocasuarina torulosa* (Forest oak). This species is a vital food source for koalas in areas with a high percentage of the trees in a forest's sub-canopy and mid layer. Its significance was proven in February 2016, when a juvenile female koala with a broken leg came into care from the Black Mountain area bordering the Nymboi Binderay National Park. In all the time of her lengthy 6 month's treatment and therapy with Queensland's Australian Wildlife Hospital this koala was known to take an occasional pick of *E tereticornis* (Qld blue gum) but otherwise only *A torulosa*. On a check for a suitable release site *A torulosa* was found to make up virtually the entire mid-story around the NSW area she had been found in. On release her immediate first action was to start eating it.

The CEC's main concern is that Rural Fire Service volunteers, landowners, developers, council workers and the general public are unaware of the vital importance of this species to koalas. Much of it will be, and has already been, lost to clearing, under-scrubbing and fires. As with all pine type species, *Allocasuarinas* burn easily, generate a hot fire where plentiful, and (most significantly) do not recover. This has already led to an extreme shortage of large mature trees that enable a koala to safely escape when pursued. Few smaller trees would be strong and safe enough for a largish mammal like a koala to leap from tree to tree, meaning a cornered koala would be in danger of a fall through the flexible young branches and possible fatal injury. Which could well have been the cause of the above example koala's injury.

The CEC therefore urges a total fire exclusion from forests supporting a good percentage of *Allocasuarins torulosa*, other than by natural causes.

10)

- *Undertake local and/or regional surveys in selected koala populations with particular emphasis on repeating earlier surveys to search for trends and causes of changes in koala distribution*

The CEC is adamant there should be no more trapping of koalas. We urge all koala care and conservation groups to support this request.

Koalas die during a trapping and survey program. Known situations include koalas hung up by tracking collars, and at least one known over-stressed female koala left to die in the interests of 'uncontaminated' scientific findings, when timely intervention would have saved her. This can no longer be seen as acceptable. Koalas have been studied quite enough, for long enough. What is needed now is collation of all taxpayer funded data and material already gathered from the many studies over many years. It is time for the Australian people to start to see koalas in their natural environment, and study them for themselves.

11)

- ***OEH will identify important koala populations in NSW for active management, monitoring and conservation***

Study of koala's DNA has proven that despite some geographic differences koalas are all the same animal. Today's isolated populations have been created only by European activities over a short period of occupation. No one population is more significant than another. All koalas must be conserved, if the second part of SEPP44's aim, to reverse koala decline and increase their numbers, is to be achieved. Enabling a return of koalas to their historic range is the only way their decline can be rectified, and reversed.

Please refer to **Appendix I & II** as CEC's response to this action

12)

- ***A translocation proposal consistent with the National Parks and Wildlife Service (NPWS) Policy for the Translocation of Threatened Fauna in NSW will be prepared for any proposed movement of koalas. OEH will disseminate info regarding translocation of koalas.***

If the Koala Strategy is strictly focused on corridor creation and koala welfare, without an imbalance in favour of seen human good before animal good, then long-distance translocations will be unnecessary. On a regional basis however, selected young dispersal-age koalas released from care facilities could benefit by being moved to empty historic habitat within their own region, and could enable expansion and merging of populations. Such habitat can include areas from which koalas disappeared during the early days of settlement, when landowners were under a government mandate to clear at least 75% of their land, or lose it.

The CEC recommends that any such translocations should be undertaken only in consultation with

- care group members who have been managing the selected koalas;
- long-time residents for knowledge and confirmation of a one-time presence of koalas in the translocation area, and
- other local residents who will provide policing, monitoring and protection for their own community koalas.

13)

- ***OEH will undertake research on koala ecology to better understand the primary issues affecting their conservation, and coordinate/contribute to the disparate interests and activities relevant to understanding and managing koalas in NSW***

This appears to cover two separate issues - ecological research, and funding for groups or individuals to continue their work with koalas. It is recommended the former will not include yet more invasive catching and trapping programs.

Please refer to **Appendix I & II** as CEC's response to the first part of this action

The CEC recommends funding be made available for studies into food preferences and nutritional values in certain Eucalyptus leaves, to gauge the truth, or otherwise, of statements made and data presented for consideration by Appendices I & II. Also that OEH supports studies into ascertaining the truth or otherwise, of questions and suggestions raised by the submitted documents

14)

- ***OEH will make available/disseminate the information gathered during the implementation of the 2008 recovery plan for the koala.***

15)

- ***Accredited and licensed wildlife rehabilitation groups will continue to rescue and rehabilitate injured, orphaned and/or diseased koalas according to the NPWS policy "Koala Care in NSW: Guidelines and Conditions", including an upgraded recording system.***

Koalas are estimated to attract 10% of Australia's national average tourism income. It therefore seems somewhat shortsighted for a government to plan to leave the work of keeping NSW's koalas healthy and available resting on the shoulders of a handful of volunteers. Especially since the majority of wildlife carers are aged retirees, mostly pensioners or other non-working (ie mainly non-wealthy) people who are free to volunteer their time.

The biological makeup and nature of ailments of koalas makes them considerably more costly to care for than most other native animals, (see **Appendix III** for average costs of veterinary care for a koala suffering from chlamydia). Among wildlife rescue and care groups much of the large accrued costs of animal care (medications; fuel for rescues and release; animal foods; care equipment (bottles, teats, heat-pads; housing, aviaries etc) are subsidised or reimbursed as per each group's policy, and again only through the fundraising efforts of a few hard-working members.

The physical assessment and care of just one koala is also extremely labour intensive. For example, each koala coming into care needs a vet assessment under general anaesthetic for age; anaemia; gum, tongue, jaw and tooth health and alignment; possible skeletal damage, lymph node health, rehydration therapy, blood tests to diagnose kidney or other organ failure, and an ultrasound check which shows up any organ displacement through attack or a fall; cystic growths in females, and bladder wall width for viability, all to ensure the animal might make it to release before treatment can start. Where a koala presents with conjunctivitis or symptoms of cystitis, the eye retinas must be checked for ulceration before treatment, and swabs and blood samples collected for laboratory testing to confirm Chlamydiosis, which is fatal if not treated. Where chlamydia is identified the koala must then undergo a 28 day course of subcutaneous injections with Chloramphenicol (*see note below), and twice-daily eye treatments, followed finally by a 2-week quarantine, then a further swab collection and lab tests to prove the chlamydia is gone. If it hasn't, then the koala must undergo another 28 days of treatment. Each koala will require 3-4 vet visits while in care (all *pro bono* labour) before being given the all-clear for release.

In the meantime the carer (without help if an individual) must collect large quantities of fresh eucalypt leaves daily (a scarce commodity on most properties, and even less readily reached where trees are tall), to ensure the koala has the correct amount and type of leaves to ensure it can gain and maintain an acceptable weight. The leaves must be trimmed and arranged into leaf-pots, which are emptied, rinsed and refilled each evening, and set up at two or three feeding stations to ensure the koala can access all the leaves it needs to eat overnight. As well as its daily medications, an underweight koala must also have supplementary milk formula to boost a good weight gain. Scats (pellets) must be collected daily, counted, assessed for health (colour, size, texture), recorded, and cleared out of the pen; perches must be cleaned, towels changed and washed, and the koala weighed regularly to direct its correct management, while comprehensive daily records must be kept throughout its entire time in care. (See **Appendix VIII** - example of a daily record sheet for an in-care koala)

All the above routine and labour is for just one koala, to help it back to where it must continue to try to survive among the hurdles of human development, to bring joy and pleasure while governments and laws operate towards its demise. Where the koala has suffered a dog attack or has a broken limb, then the requirement is for it to be immediately transferred to the Australian Wildlife Hospital or Currumbin WH for emergency treatment. For a carer in the Clarence Valley for instance (Grafton) this entails 8 hours of mindless wasted man-hours in a return journey (16 hours if taking a passenger) spent behind a wheel staring at a strip of tar.

*** Note: Chloramphenicol is the only known treatment for chlamydia in koalas that can be 100% successful in less advanced cases. However it is a scarce commodity at best, and often difficult, frequently impossible, to obtain due to its high cost of production and its non-use by humans. This is one area where governments, preferably Federal, might help to make a definite difference, by ensuring a generous cost percentage subsidy on Chloramphenicol and the necessary accompanying eye treatments (Chlorsig), or (a preferred alternative) by making them freely available to all wildlife hospitals, koala care facilities and individuals who care for and treat sick koalas.**

A koala coordinator with the right facilities might have 2 or even 3 koalas in care at any one time needing the above treatments. Dedicated small care clinics might have a dozen, while large wildlife hospitals consistently have a good many more. And work must continue regardless, through searing summer temperatures, frost and cold, thunderstorms or hail.

The main difficulty faced by wildlife care and rehabilitation groups is having to ask for free professional veterinarian assistance. Most vets willingly work *pro bono* for injured and sick wildlife, in the same way carers freely give their time to these animals that belong to the Australian people. However the majority of vets manage small private businesses, with wages to pay and families to keep. Also it is rare indeed to have a vet close to hand, let alone available when urgently needed, and yet more rare for a vet to be trained and familiar with the handling and treatment of koalas, the complexities of their internal system, and their general behavioural and functional patterns and symptoms.

As the majority of local small-practice vets are untrained in this specialist field, it has to be up to the carer to be familiar and up-to-date with drugs and specific chemicals that can and cannot be used on koalas; which might be too quickly digested and ineffective, and which will kill the koala. This often leaves a carer in a position of having to advise a vet about what to look for and treatments to use. There is also a possibility of an inexperienced new vet seeing him or herself as an authority, whose judgment needs not be questioned, so putting a koala in serious jeopardy.

Recommendations in response to Action 15

Given all the above information, the CEC joins with wildlife care groups in a call for both State and Federal governments to now recognise that for carers to more successfully carry out their work with koalas, there is an urgent need for support for the following innovations and improvements -

- **At least two vets within each rescue and care group's jurisdiction, trained and skilled in koala biology, assessment and treatments; who can attend courses to keep abreast with progressively updated treatments, and can derive financial benefit for their services.**

Please see **Appendix IV & V** as a likely solution - *government vets, paid by the people of Australia, providing professional expertise for Australian wildlife.*

The initial aim of letter Appendix V, to the Chair of the then Lands, Health & Pest Authority [now LLS], was to gain support from that agency for the proposal of paid vets for treating wildlife. Verbal responses were positive and encouraging. The eventual written response suggested a varied version be sent to NSW DPI, for the attention of the wildlife coordinator for the NSW Animal Health Plan, which includes a wildlife program. This suggested downsizing of the important issue of wildlife care and welfare to one of biosecurity for the people was never followed through. This needs nothing less than government attention, and action from the highest level).

- **NSW be brought into line with Queensland, with funding for at least two wildlife hospitals, one in southern NSW and one to the north, of the standard of the Australian Wildlife Hospital, Beerwah, and the Currumbin WH, both of which provide training and**

education through strong ongoing volunteer programs, employment, and career and extensive tourist opportunities.

- **More regional koala care clinics along the lines of the dedicated Friends of Koala Care Centre (Lismore), where standard basic care, quarantine and rehabilitation can be carried out overseen by an experienced vet, and which serves as a halfway-house rest point for koalas during lengthy travel to distant wildlife hospitals.**
- **At least 3 correct standard demountable koala pens within each wildlife care group's jurisdiction where there are koalas, for the use of individual members who live in koala habitat and who specialise in koalas**

Please see **Appendix VI** for a suggested pen design and costs. This erected at Shannondale, South Grafton. Current cost estimate approx \$5,000

- **At least 3 good standard pre-release pens established in strategic areas throughout the koalas' range and within wildlife care group's jurisdiction, erected in koala habitat where there is a known koala population, for the safe release and relocation of young koalas into safe habitat by landowners who are either wildlife group members specialising in koalas, or who can donate the land for the purpose in perpetuity, or for as long as koalas are in need of such help**

See **Appendix VI** design and costs of a high standard release pen within koala habitat

To safeguard public funds these pens might effectively be placed on Council-owned lands, manned and managed by experienced koala carers, or on private VCA title lands solely for koala care and unable to be removed by the landowner. However all selected lands must fit the criteria for ease of leaf collection and secure suitable release habitat

- **For safety of koalas as well as rescuers, much more rigorous training for wildlife rescue and care group members, before a member can be sent to rescue a koala.**

Koalas cannot be treated like any other animal. A stressed koala is a sick koala. Their own inadequate protection against damage to their internal organs by a flimsy rib cage makes them vulnerable to rough or incorrect handling or dropping, while their size, weight and muscle mass, large sharp claws, strong jaws and sometimes lightning responses can put an inexperienced rescuer at grave risk of serious injury. New recruit volunteers for wildlife rescue organisations are highly likely to be inadequately trained to rescue and care for a koala on completion of an initial basic care course. In some cases even years of experience fail to provide the required level of expertise to do this. **All volunteers working with koalas need to be specialist koala-trained, and certificated for koala care, before being able to rescue and care for koalas.**

16)

- ***OEH will assist wildlife rehabilitation groups to interpret the ecological relevance and application of rescue work and rescue records for koala conservation***

See **Appendix VII** for a record of koala rescues (this set is a personal collection, collated and Atlassed by Patricia Edwards, koala coordinator for Clarence Valley WIRES). The record sheet clearly shows the value of recording precise locations of animals for Atlassing purposes. Many earlier records have been lost through slipshod recording.

As an example of the relevance of koala rescue statistics, these records have been referred to by Council in developing the Koala Plan of Management for Ashby, Woombah and Iluka, and activities such as brochure design and placement of koala warning signs. In conjunction with GPS locations lodged with the NSW Wildlife Atlas it is an important aid to Council in assessment of, and recommendations for, proposed developments.

Much of the GPS atlassing work was facilitated by the ArcView 0.3 program, which was an invaluable tool used off line on a personal computer. Without it, the otherwise perpetual travel and unacceptable fuel usage required to collect GPS location readings would have been impossible, and not attempted. This old program is now unusable, unable to be transferred to an updated computer. Six Maps is a good, easy to use program for checking habitat by satellite maps and gathering GPS readings. However it is limited in its lack of editing and theme layer features and savable spacefiles.

It is therefore suggested that for wildlife rescue group koala coordinators to continue to help governments on a professional basis, they should have free licensed use of the latest GIS programs and upgrades, as well as training courses to learn how to use them and how to lodge data on BioNet.

17)

- *OEH will analyse NSW koala care records, assist in developing improved protocols to record data to ensure consistency among rehab groups and to provide useful information for koala conservation*

See Appendix VIII for a typical record sheet for a koalas in care (this one a personal unofficial record using a template adapted from a format designed by the WildCare Australia, Australian Zoo Wildlife Hospital, Qld). This sheet provides an important record of first sight impressions and obvious problems, and serves as a guide to assessment of a caged koala by a coordinator, as well as for a vet carrying out a professional checkup of a koala under general anesthetic. It is suggested that something of this nature could form a base template to help with this action, with alterations and additions to suit as needed

18)

- *OEH, through collaboration with a wide range of researchers and conservation partners, will coordinate and promote implementation of the recovery plan, using the Priorities Action Statement as the primary information and coordination tool.*

19)

- *Conduct research on the relative impacts of different levels of habitat loss and fragmentation on koala populations, and on the ability of koalas to move between patches, relating to both daily movements and long-term dispersal*

Please refer to **Appendix I & II** as CEC's response to this action

This action suggests yet more trapping and tracking of koalas. The CEC again highlights the deaths and stress caused to koalas by this form of activity, and our firm opposition to it. Apart from taking much too long in the face of an immediate urgent need for positive action, **the fact that koalas were designed by nature to never need to come down to the ground must be kept front and centre of all actions to save them.** Habitat loss is well known and officially recognised as the key threat to koalas, including loss of food, water and shelter through fire. The results of this are openly obvious. Koalas are listed as threatened because of it. Corridor creation and retention by law is essential, and must be a priority direction for any available funding, not yet more trapping and radio collaring to see which tree a koala will move into next.

20)

- *OEH, in partnership with planning research groups, will prepare a generic approach to planning guidelines as an application of the research done on the impacts of habitat loss, fragmentation and the impediments to koala movement between fragments.*

Linking action 19 and 20 means the eventual planning guidelines for SEPP44 will also not be prepared until the research is enacted. Again we emphasise that this will take much too long, and that further research is unnecessary.

In accordance with SEPP44, any prepared planning guidelines will be considered only under Part 4 of the EP & A Act where DAs are required. In CEC's submission into the SEPP44 Review we propose koalas be moved out of the control of the EP & A Act and a special Koala Act be prepared.

Australian koalas are a national asset, of global concern. It is the CEC's opinion that individual states are not entitled to govern and control them. We therefore call on the Federal Government to take over management of this vital asset for Australia, and adopt the role of ensuring any legislated changes for koala conservation be decided and adopted by this higher level of government, in keeping with the across-government approach of the Strategy

21)

- ***OEH will work with councils to assist in the preparation of Comprehensive Koala Plans of Management (CKPoM) under SEPP 44.***

Emphasis needs to be on funding support for councils in preparation and implementation of CKPOMs. Also completed council-approved KPOMs needs to be signed off by the State Planning Dept much faster than is now the case. Councils are in touch with their residents and communities. Unless involved and *au fait* with the wishes and preferences of a local community State government needs only check that legislated requirements are met by a KPOM and duly issue approval. It should not take years to do this. Koalas can no longer wait while the NSW government procrastinates and drags the chain.

22)

- ***OEH will encourage the revision and/or production of a regional list of koala food and shelter trees for catchment management authorities, local government areas and other local/regional koala plans that deal with specific issues and/or locations.***

Please refer to **Appendix I & II** as CEC's response to this action

This has to be right. There is scientific evidence as to why koalas eat from the trees they do, while ignoring the rest. The attached spread sheet (Appendix II) provides all necessary detailed information, and an offered scientific theory for this

23)

- ***Consideration will be given to having a single definition of koala habitat, instead of 'core' and 'potential' habitat and to expanding the list of koala foods***

Please refer to CEC's submission to the SEPP44 Review. Also refer to **Appendix I & II** as CEC's response to this action

24)

- ***OEH will revise the local government area list on the basis of the 2006 map of koala distribution (from the community survey) and consider whether to recommend its incorporation into SEPP 44***

25)

- ***Consideration will be given to amending SEPP 44 to: allow for other koala plans to be developed by councils on a regional or local government basis; and allow for Schedule 2 (Feed Tree Species) of SEPP 44 to include additional koala food tree species.***

26)

- ***OEH, together with Department of Planning, will work with councils and CMAs to assist them in developing koala habitat protection measures for incorporation in relevant local environmental plans, and regional natural resource and vegetation management plans***

For this to be effective for koalas the EP&A Act will need to be revised; the revised SEPP44 will need to apply to all land-alteration proposals, not just those that call for a DA, and the Local Land Services Amendment Act 2016 will need to be re-amended again to specifically include koala protection. To save time and further overlaps by clumsy NSW legislation, koalas need to be removed as a priority from the blanket EP&A Act Part 4 and into secure protection by federal law

27)

- ***OEH will provide specific advice arising from the koala recovery plan, as required, to consent and determining authorities regarding their decision-making responsibilities under SEPP 44, the Environmental Planning and Assessment Act and the Native Vegetation Act***

With the previous Baird government's new Biodiversity Conservation Act about to enable further uncontrolled land clearing, and koala habitat by SEPP44 still to be assessed only under Part 4 of the EP&A Act, this action might as well be deleted. (A revised version of Guidelines to Councils needs to be placed on public exhibition for comment)

28)

- ***OEH will prepare environmental impact assessment guidelines for the koala.***

The CEC urges extreme caution if this plan is enacted. Only experienced koala ecologists, handlers and care groups working constantly with koalas understand the full impacts each individual development will have on koalas. In line with the Recovery Plan, koalas need to spread and expand their normal ranges to maintain a healthy combined population. If koala habitat is present, but koalas are extinct from the area, then that habitat will still need to be left intact for natural colonisation through dispersal

29)

- ***OEH will approach key stakeholders to negotiate conservation outcomes for important koala populations in NSW***

Koalas did not occur in separate populations before European arrival. If they had, they would have evolved as different animals, and would not all share the same DNA as has now been proven. There was no such thing as separate koala populations 150 years ago. Shooting, the fur trade, clearing and burning are the cause of today's individual fragmented populations. No single seen 'population' in NSW is more significant than others. It must be recognised that what today may be seen as important koala populations are in fact urban populations, and these are rapidly becoming isolated populations. The only explanation for today's urbanised koalas is that within a human community they can still find small but stable habitat, and don't regularly lose their numbers through being burned by fires. Therefore the only successful conservation outcome is to enable integration and intermingling by creation and full protection of connected, and fire-free, corridors.

30).

- ***OEH will contribute to koala habitat rehabilitation and revegetation activities undertaken by individuals, community groups and government agencies by identifying priority areas for work in each koala management area and providing technical advice and support***

Please refer to **Appendix I**, its explanation of priority revegetation corridor locations by contour habitat mapping, as CEC's main response to this action

As an example of how OEH can contribute - within the Clarence Valley LGA, for instance, the Shannondale/Shannon Creek koala population could very quickly and easily be linked to the Waterview population by a TPO on forest red gums and small planting projects, particularly along fence lines and waterways that cannot be utilised by graziers. In turn this would help to spread the

koalas now arriving into South Grafton suburbs, and with a little bit of help could expand the territory across the river to link the koalas at Companhurst and beyond.

Given that most northern rivers are narrower, deeper, faster-flowing and more dangerous to koalas than in pre-settlement days, the CEC also suggests installation of carefully located overhead, above-flood level wildlife river crossings will effectively link koala populations now separated by these rivers.

Also it needs to be urgently noted that favoured koala food trees, *Eucalyptus tereticornis* (Forest red gums), are increasingly under attack by insects through loss of natural predation by bushland birds. The CEC therefore calls on the NSW government to strengthen the Native Vegetation Act to prevent the practice of underscrubbing frequently carried out by new property owners moving to the bush. These people first buy good tracts of natural bushland because they are cheap, then more often than not decide they want parkland or cleared paddocks instead. They then remove the valuable mid-layer vegetation, mostly in breach of the Act, and without monitoring, fines or other penalties.

A good undergrowth system therefore needs to be reestablished throughout all designated wildlife corridors to encourage bushland birds to recolonise and prevent an escalation of Forest red gum dieback before it's too late. Also, since public money is at stake, these corridors once established need to be firmly and irreversibly protected from clearing and burning, for any reason, by permanent legislation that cannot be changed at the political whim of an incoming government.

31)

- ***OEH will encourage groups to undertake research on any aspect of koala biology and to communicate with OEH when research is being undertaken and when results are published, so officers managing the recovery plan have access to the best available info.***

We question the form this encouragement will take, and suggest this needs clarifying. The most vital need for koalas at this point is release of the anti-chlamydiosis and retrovirus vaccine. This product was proving capable of curing quite advanced cases of chlamydia five years ago, while still in its early stages of research. It is past time now for this drug to be released and used to control this serious disease while there is still time.

Apart from this, the CEC underlines its strong opposition to any further trapping of koalas solely for research purposes. There are plenty of living and dead koalas and records available through koala care and rehabilitation groups and hospitals to render any further field study programs unnecessary.

32)

- ***Undertake coordinated surveys of koalas across a range of scales, using appropriate methods and focusing on different issues at the site, landscape/regional, and state scale, including a mechanism for identifying endangered populations.***

Please refer to **Appendix I & II** as CEC's suggested course for any on-ground surveys, without involving trapping living animals.

Otherwise just trying to establish a single direction for a number of disassociated surveys will take too long for them to reach any useful conclusions. Again we underline the point that koalas need to eat and sleep, and not be hassled by human intrusion. If the habitat is present, then koalas should be present, and most likely will be in time if left alone. Please also see CEC's comment for Action 33.

33)

- ***Compare and assess the reliability of different koala survey and analytical techniques.***

Quite surely the veracity of all official studies and techniques into koalas' biology, ecology, habits and habitat should be well proven by now. If they aren't, then countless sums of public money have already been wasted on useless activities. Funding instead needs to be immediately channeled into habitat

purchase, tree planting and enlisting and educating the general public on koalas' needs, and legislative changes to meet those needs.

No official koala studies can beat an ordinary local resident seeing a koala in their yard; keeping records of sightings; posting photographs on social media; observing scratches and scats on their trees, and reporting their information to a relevant body for official record. The Citizen Scientist program is all that's needed for a satisfactory outcome.

34)

- *Assess koala population dynamics and habitat use across the NSW range*

This is already theorised, awaiting only ground-truthing. (See **Appendix I & II** for CEC's response to this action)

35)

- **Investigate the relative importance of different threats to koalas, how to ameliorate them and the effectiveness of mitigation measures**

Please see **Appendix I & II** for CEC's response to this action

36)

- *Undertake studies of the history of koala management as part of an adaptive management strategy*

It's an unfortunate fact that the human psyche for some reason sees a need to 'manage' everything. As native animals koalas needed no management before we arrived, and would do very well without it now. A much better outcome would be gained by providing them with plenty of habitat and switching the focus to managing human occupation and actions, leaving the koalas alone to manage their own business

37)

- *Assess the significance and extent of over-browsing which is likely to emerge in NSW*

The Recovery Plan does not outline specific management practices relating to over-browsing and makes no allowance for this in NSW. Neither should it. NSW is not an island. Over-browsing is not likely to be a factor if trees are planted; if TPOs are enforced; if empty habitat is connected for dispersal, if road and river crossings are in place, and if corridors are established to aid a single naturally-functioning coastal koala population

38)

- *In areas where over-browsing becomes a significant issue, develop management strategies based on the National Koala Conservation Strategy*

This is something of a circular issue. It is up to the actions devised by this Strategy to guide those conservation outcomes that ensure over-browsing will never occur.

Given the seriously depleted koala numbers around NSW, should over-browsing ever become an issue then, in part at least, this proposed Koala Strategy will have been successful. However, with the correct outcomes, this should never be a serious issue. At best koalas may increase and recolonise currently empty habitat, to the point where they might be delisted as a threatened species - which should in fact be the main aim of this and every conservation plan

39)

- ***OEH will design and implement a program to monitor changes in the status of koalas and koala habitat and evaluate the success of recovery actions in improving the conservation status of koalas in NSW.***

40)

- ***Examine the population of koalas in Bongil Bongil National Park to assist in the implementation of the Koala Recovery Plan in this icon forest***

41)

- ***OEH will approach the Department of Planning to jointly develop and provide specific advice to local government about the incorporation of koala protection into their new local environmental plans, currently under development.***

42)

- ***Management of all OEH estate will specifically provide for the protection of koalas.***

This needs also to extend into State Forests (SFs), which are involved in serious constant koala habitat destruction. Government focus when first creating national parks was on rainforest, which in the main does not support koala habitat. Therefore for koalas to be protected by national parks, more national parks will need to be created. If the many areas of koala habitat within SFs could be converted to National Parks, this would bring a satisfactory outcome almost immediately for koalas.

43)

- ***OEH will approach Forests NSW to collaborate in developing policy and practice consistent with the NSW Koala Recovery Plan; exchange information, given koalas move across tenure boundaries; and work within the context of agreed regional forest agreements***

A good percentage of koala habitat statewide occurs in SFs. As for #42 above, The CEC suggest that where feasible all areas of SFs where koalas are known should be moved into the National Parks estate. Otherwise the NSW IFOA will need to be amended to better protect areas where this is unfeasible. Which, while necessary in our view, will take far too long to be helpful.

We would like to underscore our point made for the SEPP44 review, that the SEPP should, as a priority, be amended to apply to SFs. Since SFs are run at a loss to Australian taxpayers, SF activity within koala habitat needs to require a DA. We reiterate, many NSW SFs or parts of , could simply be closed down to logging activities and passed into the National Park estate.

44)

- ***OEH will approach Road and Maritime Services (RMS) to align its policy and practice with the koala recovery plan; exchange info and produce plans; ensure RMS has an active program to implement engineering solutions and other measures to reduce adverse impacts of vehicles on koalas.***

Again, SEPP44 does not apply to the EPA Act Part 5, Critical Infrastructure, and to our knowledge RMS has not aligned its policies and practices to anything or anyone. It has been allowed to become a powerful authority, which seems to be accountable to no other portfolio. Creating jobs and keeping its weighty machinery inventory operating is RMS' main priority, and it appears to be able to do that at will. The RMS will not change its plans for koalas.

The Pacific Highway upgrade is one good example. The new route is no shorter than the old, is costing the Australian taxpayer many millions of dollars more than a simple upgrade of the existing highway would have done, and has now destroyed koala habitat in a number of places.

Without a change in legislation RMS will not change, nor need to change, its current aims or practices. Our suggestion for a future government is to allocate the rail portfolio to this agency, in place of maritime. If this had only been done by the O'Farrell government, taxpayers today would now be looking forward to the completion of a modern passenger and freight rail service connecting our major coastal cities, in place of another high maintenance cost road overloaded with more and more weightier CO2 emitting transport vehicles. All of which at this time, although too late, would have been relevant to preserving koala habitat across many coastal areas.

45)

- ***OEH will advise the consent and determining authorities on appropriate measures which should be included in the design and construction of new roads which may have the potential to impact on koala habitat***

Without a reining in of developers and enforcing future local subdivisions to be developed solely within already cleared lands, this action cannot successfully be applied to local councils under State Government Planning laws to avoid koala habitat. Presumably therefore this clause refers to public roads, and again to the RMS. The CEC would like to suggest that today we have quite enough roads already, to take everyone with a vehicle wherever they want to go. The enormity of land acreage currently taken up by tar and dirt to accommodate people wanting to move from A to B is inestimable. The future can only be for downsizing - for small people-movers maneuvering through, not destroying, koala habitat; for efficient public transport, and rail. And we now have an astonishing network of cleared roadways to select the most efficient corridors to construct them on.

46)

- ***Information regarding koalas and koala habitat, including maps of koala habitat, will be prepared by OEH and disseminated, following discussions, to relevant bush fire management committees.***

We have to question - then what? Merely looking at a map and having a chat will not save koalas from fire. Fire kills many koalas annually. It causes instant localised extinctions. At best it destroys koala food leaves for often kilometers across their range. Fire is the most lethal force impacting koalas today. So much so that most koala populations are now found around stabilised townships and suburbs where they are safe from fire and have a few secure food trees. As with the RMS, the RFS is another authority that can demolish a significant tract of koala habitat - and any wildlife habitat - as easily as can the RMS, with full authority to do so.

Also, although burning is legally listed as clearing under the Native Vegetation Act, so purportedly is in breach of the law, any landowner can light a fire at inappropriate times without need for a permit, then suffer no consequences if that fire sparks up and gets out of control. The RFS's main response to this situation is to bulldoze containment lines and back-burn into yet more bushland, regardless of koala habitat, to protect human assets. Without changing the laws, to put a total ban on **all** firelighting by anyone other than qualified RFS personnel, and then on a case-by case basis, the CEC suggests this action will be pointless.

We also suggest that, with fire being such a lethal element in a heating climate, any matches and other firelighting implements, even cigarette lighters, should be banned from all motor vehicles. No one should smoke while driving - or needs to.

47)

- ***OEH will provide appropriate regional koala food tree species lists to catchment management authorities***

48)

- ***OEH will investigate with stakeholders the value of holding another koala summit (state conference).***

The CEC strongly advises - please, no more valuable funding wasted on yet more people speak. Let's just concentrate available money on activities that will immediately benefit the koalas.

49)

- ***OEH will prepare and make available/disseminate information to drivers in areas where koala populations occur regarding the threat posed to koalas by vehicles***

While nice to see, only the converted will pick up koala information brochures from Information Centres. The most effective method of warning drivers of any upcoming situation is flashing roadside lights. Unless the warning is in their face, drivers will quickly lose interest and forget. We understand that flashing lights, along with speed limits and speed bumps, is again the domain of the RMS

50)

- ***OEH will provide information in relation to the management of dogs and their threat to koalas.***

Here again, without legislation, information will not be taken in by anyone who doesn't care. The Companion Animals Act needs to stipulate required fencing materials for dog pens in known koala habitat, and enable its enforcement under local council's Keeping of Domestic Animals policies. Otherwise local councils need to be free to, and encouraged to, enforce dog-free developments.

51)

- ***Assess the economic and non-biological values of koalas to the whole community***

52)

- ***Investigations into the cultural significance of koalas to Indigenous Australians will be encouraged.***

We thank the State Government for this encouraging initiative to protect koalas in New South Wales. We await its results and outcomes with interest, and an earnest hope that it does not come all too late

Yours sincerely

Patricia Edwards (Clarence Environment Centre President).