

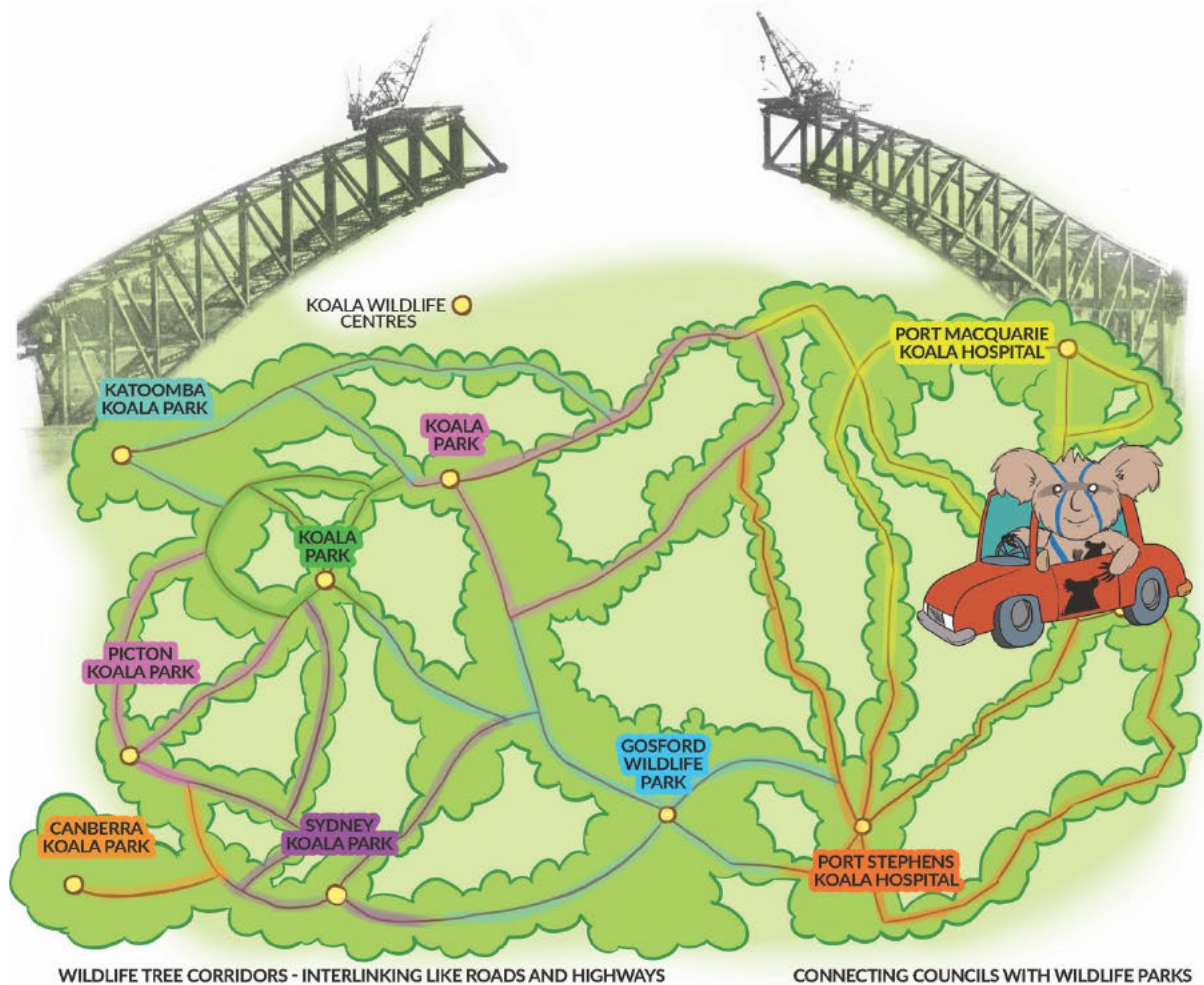
INQUIRY INTO KOALA POPULATIONS AND HABITAT IN NEW SOUTH WALES

Organisation: Koala Retreat

Date Received: 31 July 2019

Koala Retreat Submission Aug 2019

Re: Legislative Council
Inquiry into koala populations and habitat in
New South Wales



The opportunity

Koalas are an untapped 'resource' that can create significant revenue for the State.

This requires us to look closely at the legislation to ensure for flexibility for investors. With the right framework, the koala industry can become a tourist drawcard, drive large-scale projects, and create long-term employment opportunities while ensuring the koala's health and sustainability.

Innovating, taking a different approach to understanding and managing the koala, presents a real opportunity. And it's this opportunity I hope to share with your panel.

Overview - a flexible, three-pronged approach to protection

If we modernise our legislative policies and framework to allow for the various different approaches to land and koala management, we will undeniably increase our koala population.

Depending on the location, different koala management strategies are appropriate.

1. **National Parks.** A traditional conservationist approach can be applied that is based on creating habitat, with a hands-off management approach. In order to be effective, vegetation corridors need to be created that connect the various National Parks. Koalas, in particular the young males looking for their own territory and some females, are known to travel 1-2 kms per week.
2. **Semi dense urban and rural environments,** such as the Hawkesbury area. To ensure koalas can cross roads safely, it is important that structures, such as overpasses and underpasses, are incorporated into any existing and new urban infrastructure. These allow koalas to safely cross roads.
3. **High density urban environments,** such as Picton Road in Campbelltown which is a known hotspot of koala deaths due to koalas attempting to cross the road. Fencing as planned is inappropriate as it does not take into account the koalas' need to move large distances to find a mate or better feed. Rather than fence roads, overpasses and underpasses are required. In addition, koala consultants need to be engaged to help koalas change their behaviour with food behavioural techniques that train koalas to use the overpasses and underpasses and stay away from roads as much as possible. The koala management approach to be taken in these high-density urban environments is a more direct approach similar to the approaches taken in the captive sector of koala management rather than the hands-off conservationist approach of approaches taken in National Parks.

All industries add value – the logging industry provides wood, creates jobs, and drives industries. With the right approach, koalas can exist well in a society driven by commerce. They *can* increase in numbers, and they *can* live comfortably with society.

This is because koalas, when taken care of, only want the *illusion* of free will. The challenge we face today is reducing their stress levels to the point where they *feel* in control. These stresses can be alleviated with a new approach to landscape architecture that enables

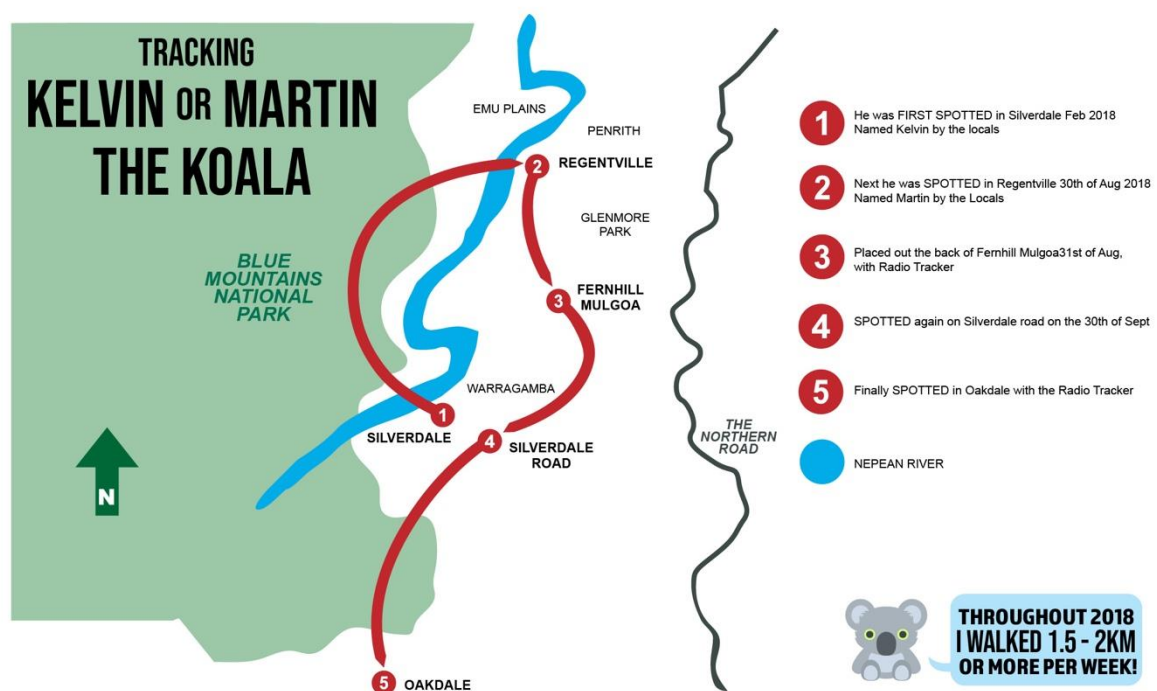
logging, road expansion, and other developments to continue *without* compromising the long-term survival of the koala.

The goal is simple. As a growing population, we can't stop progress. But we *can* reframe our thinking, modernise legislation, and take an alternative approach to accommodate both human and marsupial needs.

In the past, we've allocated 'free range space' to koalas and used fencing and other mechanisms to retain them to particular areas. ***As the declining numbers attest to, it doesn't work.*** We need a multi-faceted approach that considers the current conflicts in approaches to koala management (namely the *conservation* approach and the *captive* approach), how we can develop the koala as a species (including diversity of their diet and how it influences behaviour), and how infrastructure developments can be developed to support koala habitation while also delivering commercial benefits.

Increasing population density and urban/rural development requires flexibility and new approaches to managing koalas, in particular in dense urban areas adjoining habitat that result in koala death hotspots such as on Picton Road in Campbelltown.

Koala are nomads - Kelvin the Koala



Kelvin the Koala (as he was named) was first spotted back in Silverdale in February 2018. It was spotted again in Regentville on 30 Aug 2018.

Since the second sighting of this young male koala in Regentville, the local conservationist placed a radio-tracker on the koala and managed to follow him along the Nepean River North (it was very dry winter in 2018, a drought), roughly 15-20 kms away from Silverdale by road (maybe longer, as there is no such thing as a straight line in a koala's world, and if he followed the river, it could have been twice that distance). After having a radio tracker placed on him and given a second name, the koala returned to Silverdale exactly 4 weeks later, another 15-20 kms South (he travelled roughly 5 kms per week). This included a rest stop for one week in the one area, after a local conservationist released him at a confusing site,

which disoriented him for week. He then again gained some mileage in a very short amount of time.

The latest report is that he's even further down south in Oakdale NSW, travelling around as free-range koalas do. According to my calculations, this is around 50 kilometres, not calculating tree to tree movements (vertical movement). This is just horizontal movement. I would say, he moved somewhere between 80 to 100 kilometres in the one year, as a youngster. That's around 2 kilometres per week, possibly more when taking into account the starting and stopping depending on weather patterns. That's bloody good for a koala of his age. Koalas - even males - do slow down with age. The example of Kelvin the Koala shows a level of movement that the general community find hard to believe, when in fact, we see this type of behaviour in captivity and in the wild all the time. This is the other side of the story which is hardly ever told.

A diversity of approaches to koala management and protection is required

We need a variety of approaches to koala management and protection. This allows for flexibility to support both a growing human and koala population. Having several strategies would help start and create a type of new industry and set-up the foundation in order to see all different types of situations, can facilitate a number of nature and artificial means to help koalas move around (such as overpasses, underpasses and vegetation corridors), and maintain society cohesion.

There are a variety of koala management and protection approaches - from *indirect approaches to direct approaches*. *Captive techniques* and *conservation techniques* should be combined.

Direct approaches to Koala protection are:

- Hands on approach
- Creating a half-way house - a centre
- Developing a koala personality and temperament assessment
- Short and long-term relocation methods
- Education measures

Indirect approaches to Koala protection are:

- Landcare measures
- Tree selection
- Balancing Human Density
- Balancing society infrastructure/agriculture
- Education measures (pamphlets to community)
- Development of new architectural means in aid of koala movement (such as overpasses and underpasses)

Taking a multi-faceted approach, we can not only protect the koala in line with infrastructure development, but also drive tourism and other commercial benefits.

What we've always reverted to – and a new approach

In the past, the sole focus has been placed on studying the ecology of the land koalas need for long-term survival. The restrictive nature of this approach has rendered it unsuccessful.

Boundary free approach to koala management and protection

Potential establishment of a free-range koala set-up with no formal boundary or any direct action taken on the koala itself.

- Not hands-on but observation from a distance and potential electronic tracking
- No formal fencing structure, enabling them to move as desired
- In the rural part of society and, as in the wild, responsible for self-defence

With this approach, the koala population can relate to anyone or anything, in terms of human population density.

Using boundaries for koala management and protection

Koalas are in the open but with boundaries/obstacles/hurdles to restrain a core group to a particular area.

- Our interaction activities incrementally increase from merely observation to implementing a more hands-on approach via daily techniques associated with Koala husbandry
- The findings from Approach 1 are used to influence the types of infrastructure to ensure their safety
- We apply dietary techniques as a form of motivation and behavioural management
- Proven captive management techniques, such as overhead or underneath tunnels, allow the koalas' freedom of movement
- Education begins with the wider community as well as local volunteers.

A note on boundaries

The boundaries I'm discussing could be a nature setting, such as a body of water, or a steep drop off a mountainside or cliff.

Alternatively, they could be man-made, including the strategic combination of natural landscape architecture with housing and commerce.

Battle between traditional and contemporary koala management and protection approaches

The battle between traditional and contemporary management systems will always pose a risk.

A rounded panel will ensure that you have all areas well represented, ideally preventing public dissent.

Infrastructure development and fragmentation of koala habitat - relocation as short-term solution only

There is evidence that infrastructure developments without native wildlife consideration (such as widening of roads, different forms of fencing, increasing human population, deforestation and habitat destruction) are all fragmenting the koala habitat. Wildlife corridors work only when they are designed well; if they don't support the linking of the right colonies, they lead to further disaster.

Relocation is the ideal short-term solution, while a long-term project with clear outcomes is identified and agreed upon.

Other suggested approaches

Legislation review, analysis, and amendment to transform the *indirect* actions to *direct* actions. This will facilitate the critical transitioning required to ensure the wild koala population meet all the necessary elements for relocation to a known and planned area.

Over the long term, legislation review can be undertaken in line with innovations and future planning, as outlined further below, to establish a new framework for koala cohabitation and commercial investment.

- Relocating a number of koalas where there is overpopulation or an influx in well-established residential areas
- Developing a strong infrastructure platform for the future that gets the support of even the most hardened koala conservationist
- Creating a strong captive infrastructure that provides a safe space to facilitate the acclimatising of koalas prior to relocation, with the support of direct action and supported by constant monitoring and assessment
- Re-educating the koalas around changes to their diet, location, etc
- Delivering community education around techniques, koala myths, etc
- Potentially combining monitoring with tours for long-term success

This is where a flexible approach is required, with direct action that combines input and techniques from both the free-range and captive industries. There is no single solution, and so each area will require a bespoke approach that suits both the koala population and the local residents. Modernising the legislation could enable this flexibility, establishing a framework that reduces koala deaths.

Boundaries are all forms of limitations for koala movements. They include lack of trees, soil contamination, roads, large dog numbers, diseases, natural landscape, large water bodies, untrained and negligent human interactions, large agriculture production, forestry logging, and society infrastructure, such as large housing estates. They defragment colonies by limiting koala movements.

Koalas enjoy fertile soil areas because of the types of trees grown in those areas. They can become used to semi-fertile soils and, in parts of the year, enjoy tree species grown in poor soil characteristics as long as the trees themselves maintain general health. The marsupials are aware of tree health, enjoying stronger and healthier trees.

However, *their* needs are at odds with *our* commercial needs and expanding society. That's because us, as an evolving society, hasn't yet conceptualised and implemented incremental ways to close the gap.

The legislation has room for improvements and reform. This includes flexibility for more ways to look at how the koala can fit in with our evolving species. As the world changes in population and weather extremes, so must the way we see our koalas. They are flexible creatures, but the current legislation doesn't acknowledge the extent to which the latest skills and captive training has improved our understanding of the Koalas' behaviour and has managed to dramatically changed their daily routines.

This combination of 'old school' formula of koala husbandry with today's modern approach has the potential to expand our knowledge and provide koalas with a heavier background of eating a higher percentage of a non-Eucalyptus diet. This then enables us to relocate koalas into areas that haven't been part of their ancestry.

To ensure their survival, koalas need to evolve alongside their surroundings. We can help with that. Diversification will improve their long-term survival rate, create a high form of genetic diversity, and develop commercial benefits between people such as myself and developers of the future, working within the boundaries defined by the state NSW Government to bridge the gap.

Goal: free-range koalas in urban environments

It is my vision that infrastructure will be built in such a way that koalas can cohabit with humans in the environment, without the constant threat of being run over by a car.

For this to become reality, it is necessary:

- To create well-planned wildlife corridors for Koalas that support the major infrastructure necessary for large human population
- That Koalas and society cohabit amongst tall native trees
- to combine the captive and conservation sectors as one.

We have glimpses of this happening in Queensland, where in some parts, society can and is coexisting with our wildlife. In NSW, we needed to open our understanding of how our legislation can evolve in a flexible manner to enable innovation and new areas of eco-friendly businesses become further involved in koala conservation.

As a business concept, the captive industry and the conservation industry will be brought closer together while the NSW Government is able to drive successful commercial initiatives that not only support employment, but also tourism, business and other sectors.

A note on the critical importance of diet

Diet is possibly **the** most misunderstood element of koala management.

The tasks above would be possible knowing how and when their food should be provided. The origins of their food source is extremely important when feeding them daily.

Just like humans and household pets, koalas behave differently according to the food they receive. Just as we train ourselves and pets, with positive reinforcement, we also mentally motivate koalas to travel or to sit. Without feeding them in a direct way, and without diverse feeding strategies, we will never see their true value or potential.

The challenge we face is that feeding koalas in medium to large numbers has become highly restrictive as zoological institutions manage their commercial obligations. Limiting the supply of food sources to up to four locations all year (if lucky), is having a negative effect on the species.

- Koalas are nomadic animals now living at a fixed address. Limiting their food dulls their interest and motivation to move long distances.
- Food limitations have also created the 'reputation' of the koala being a long-term sleeper. While this is true for an aging koala, it is the opposite for younger ones. Using a single plantation as a source of nutrition (as opposed to field browsing and deliberately sourcing a variety of species to offer a range of nutrient-characteristics) is leading to illness, lethargy and almost depression.

Nutrition characteristics play a key role in not only ensuring the health of our koala colonies. Also important is identifying their behavioural patterns and personality traits. These are critical to consider during relocation, with nutrition-characteristics being a central factor in koala management.

Developing a successful program

A successful program depends on many factors. Representation of a diverse range of specialists is essential. Each specialist adds a different perspective.

For example - behaviour specialists: Koalas and location are about selection. Some koalas can live comfortably in a concrete jungle such as Sydney's Darling Harbour, enjoying crowds of people. Some don't. It's all about matching the right koala with the right environment.

Koalas like routine. Certainty is their security. Unfortunately, scientists and ecologists, although strong in their fields, don't have the luxury of practical observation and interaction in the captive sector.

Representatives of the captive sector also know how to introduce diversity to the koalas' food. This has been proven, as has the impact of food on their health and behaviour. Again, however, scientists and ecologists lack the day-to-day expertise of intensive observation and recording changes that occur on-the-ground, day-to-day in response to food, environment and hierarchy.

Even with boundaries and locations – while an academic and/or ecologist can and should provide support in terms of the areas in which koalas could live in when they are discussing a natural environment (knowing the basic conditions and environment they need for survival), the practical measures have to be built in response to each location *and* with an understanding of that species' and/or colony's behaviour. This is where panel diversity is required, with experts in captive management/artificial environments presenting significant advantages.

Housing and nutritional characteristics need to be considered, including the complexity associated with different koala numbers under a more direct approach. It's not always about good/great fertile soil and a mixture of well-known tree species – it's also the stress levels that each koala creates for the others as they find their feet in either their new or old home range, as this constantly changes from society.

A successful program needs more than an ecologist and scientist. While their theory and conference papers arrive at the same conclusion as the captive sector (but from a different road or narrative), captive sector representatives will bring extensive practical knowledge and a skillset useful for program implementations that allows for necessary adjustments.

Innovation is needed. This needs to be combined with great vision and development, and the support from the State government via legislation that allows for adaptation and good design, architecture and engineering to develop a contemporary habitat where the koala can coexist with society, with that habitat driving significant benefits to developers, society and the industry.

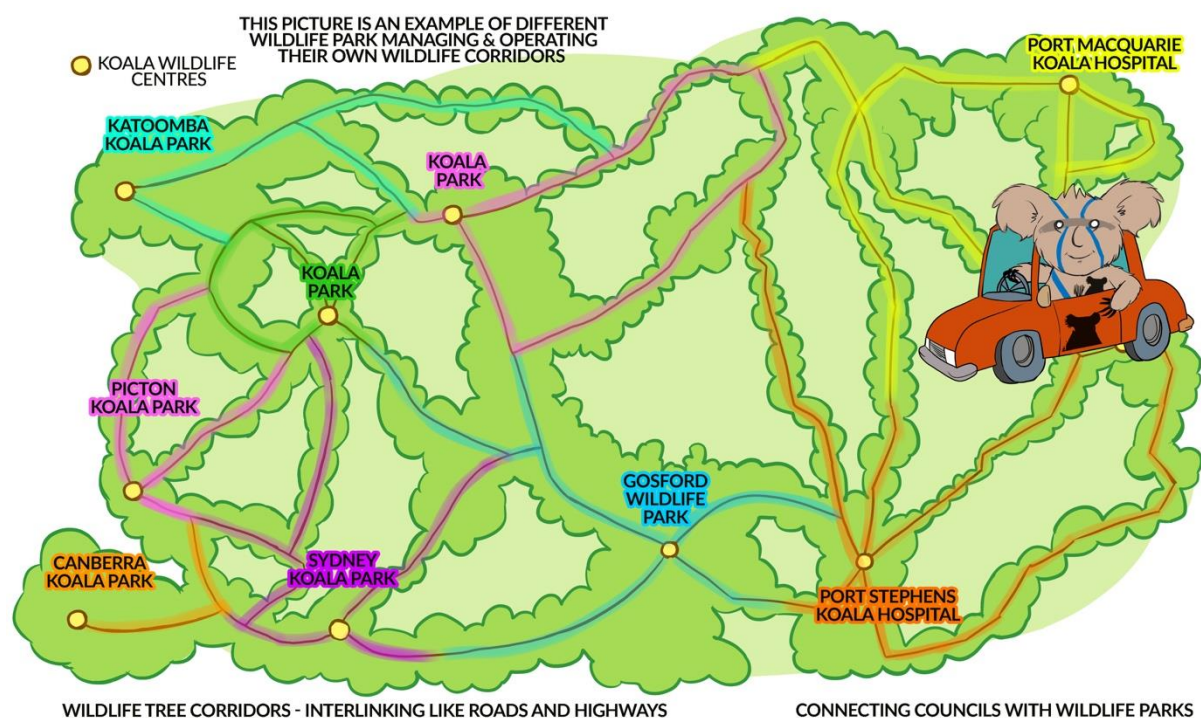
Concepts for consideration - a new direction for the Koala

It is easy to say, but it is absolutely necessary to set a new direction for the Koala.

If done correctly, it can and should allow other industries to partner on infrastructure projects that will provide ongoing support to society.

We *have* the pieces in place: wildlife parks, zoos, koala hospitals, universities, tourism, transport system and a social hub. However, we need to stop segregating and start developing ways to mesh with the wildlife corridor, while developing infrastructure that meets the greater needs of our commercial and social communities.

Wildlife corridors and commercial entities combined



The task is to establish a long-term commercial conservation industry that can stand on its own two feet.

For me, it's somewhat simple. Yes, immersing each puzzle piece into the wildlife corridor is disruptive. But it's also innovation. And it's the way to move forward while protecting our valued marsupial **and native plants**.

I see the first stage as establishing a wildlife corridor from Queensland to Melbourne. As evidenced by Dr Kelly's work in the Blue Mountains, koalas can live in diverse and extreme weather conditions.

Conceptually, this corridor can be achieved via the state forest and recently allocated hectares in the Southern Highlands and North Coast, connecting it north to Queensland and south towards the new National Park in the southern Highlands. This will further link south of the Blue Mountains with Morton National Park and, eventually, further south towards Melbourne.

Ownership can be provided to each part of the corridor, providing new entities with the appeal that they can attract commerce within legislative requirements that aren't as limiting as our current regulations.

Great success was achieved in the 80s and 90s in the South-east of Australia. During a time when koala handling was allowed, a strong koala hub was created, and the tourism sector was strong. The koala industry itself flourished, and our knowledge base was strong given that competition increased the standard of work. Each Sanctuary actively sourced professionals with the strongest work ethics, innovation and skills.

A similar commercial model will work with the right approach and methodology when supported by a long-term outlook. It will reverse the dwindling numbers we are seeing - not only of the koala, but also of all native wildlife.

With existing infrastructure in place, such as National Parks, roads, housing, and legislation already enacted on certain areas of land, there will be challenges. **However, given the underutilised nature of our land**, there are many opportunities. Consider a company such as the **Clara Group**, which has put forward its vision of another further six cities along the route between Sydney and Melbourne.

This type of vision could be the drawcard the environment is looking for. **The Clara Group** is looking to add value to its infrastructure. Consider their **hyper-loop train concept**, which would compete with airlines. **Built in line with a wildlife corridor**, we could develop cities of the future. Underground watering systems would eliminate back-burning and bushfires, with utilities connecting each household to trigger a water system across homes and buildings that reduce any threat. Underground water storage and other underground utilities will be eco-friendly and, with the average house off the ground, wildlife can freely move underneath and around the house.

Positive steps taken by the Government

The Government has certainly taken positive steps to support the industry, including:

1. The NSW Government announcement in May 2018 that it will set aside more than 20,000 hectares of state forest on the Central Coast, Southern Highlands, North Coast, Hawkesbury and Hunter, to be used as new koala reserves. In addition, over 4,000 hectares of native forest on the Mid North Coast will be transferred to the National Parks Estate.
2. Port Stephens will receive \$3m as part of the strategy for a new koala hospital to care for sick and injured koalas.
3. A new National Park in the Southern Highlands, a fantastic addition to the National Parks Estate and a vital part of the Great Western Wildlife Corridor, will help link the southern Blue Mountains with Morton National Park.
4. A great incentive (announced by the media on 8 July 2019) where local residents are given payments to learn the correct type of trees to plant for koala habitat – an incredibly proactive step towards protecting our koala habitat.

What's key is a collaborative effort and overarching approach that hasn't been taken before; an approach that sees a wildlife corridor traverse commerce and community. A singular platform that infuses all the known pieces of modern society into one vision aimed at harmonising mankind, plant and wildlife.

Regulatory body is required to avoid past mistakes

With no defining regulatory body, the industry is in trouble.

Infighting between different movements has seen the koala conservation movement rendered inept and inconsistent.

An example is the Gold Coast Council disaster that was profiled on the ABC program '4 Corners' ('Koala Crunch Time', 2012).

They failed to assemble the right people, with the right mix of knowledge and skills, and instead went for a quick solution. They relocated 200 koalas but had a 25% survival rate, with the project doomed from the beginning.

Why? There was a terrible timeline. They suffered from an inadequate understanding of the amount of work required. Their inefficiencies led to a lack of understanding around the diversity of koala food palatability. Everything about the program was designed to fail, generating significant media interest and negative publicity.

Koalas can be relocated to certain areas. If the committee recommends this approach for certain groups of koalas, this can be done with success. It is critical, however, to have the right knowledge base on the panel to not only develop the project plan, but also ensure the correct undertaking of koala assessment, re-education, and relocation, as well as putting in place planting programs and other transitional requirements.

As a senior adviser with a strong background in understanding koala nutrition, I believe I will add significant value to the panel. Koalas have varied personalities but can all adapt as long as you establish an operational framework designed for long-term success. As a koala behaviourist, I can identify these personalities via several captive management techniques.

My work and research examines in-depth how we can traverse the current gap established by an industry in trouble and a culture that's rapidly expanding. **The koala habitat is defragmented because society is defragmented.** And the koala and our wildlife are caught in between.

Again, this can be corrected with the right architecture. While it takes great planning, Australia can achieve world's best practice.

National Parks as Koala habitats and commercial hubs

National Parks are stretched to their limits and under-skilled, but we can turn National Parks into commercial hubs, like environment centres, and combine that with other commercial adventures similar to current zoos and wildlife parks. If we find ways for National Parks to be more commercial - to create a number of incomes, draw more and more people to their own centres, and other wildlife centres, such as Koala Retreat- Centres right along wildlife corridors -, then we have a real chance, for our wildlife to prosper. And everything else in-between.

My vision for the future

My vision for the future is:

1. Where Koalas aren't limited to just a Eucalyptus diet. They can eat a non-Eucalyptus diet as well.
2. A Koala Research Centre - to diversify the koala itself as a species, and our understanding of them.
3. A platform in which where the koala sector works with other major industries
4. Have koala and wildlife habitat built into existing and new Australian infrastructure designs. For example: the New Hyper-Loop Train System, currently in the planning stages with the Clara Group, going From Sydney to Melbourne.
5. Finally, building a future whereby koalas and native wildlife live side by side in residential living.

I kindly submit my Submission towards the future of our Koalas and other Australia Native Wildlife and Plants to this committee for review, and formally request that I be considered for your panel.

31 July 2019