Koalas, Climate, Conservation, and the Community

A Case Study of the Proposed Great Koala National Park, New South Wales, Australia

Tim Cadman, Rolf Schlagloth, Flavia Santamaria, Ed Morgan, Danielle Clode, and Sean Cadman

Abstract

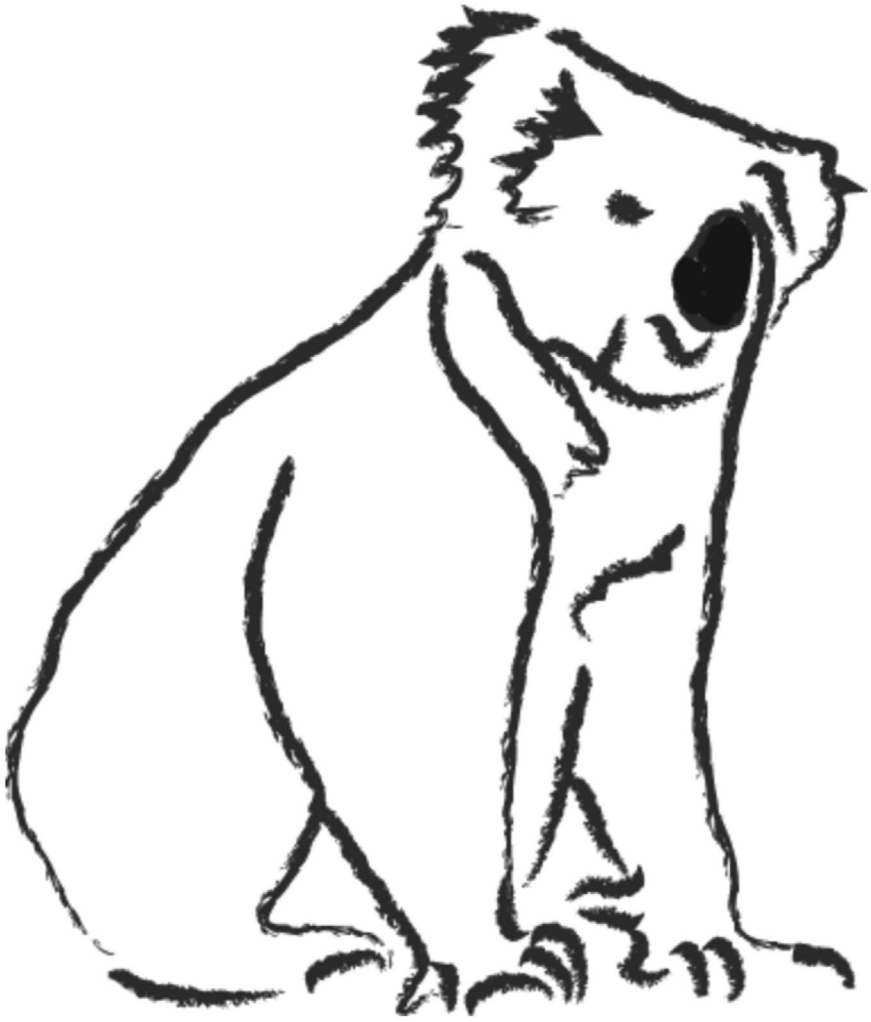
Koalas are one of the most globally recognized conservation species. With populations rapidly declining in core forest habitats in northern New South Wales, pressure has mounted on successive governments to create a regionwide park to protect this population from further decline. Establishing a conservation-effective national park at a landscape level in a highly fragmented area with high pressure from alternative land uses, such as forestry, agriculture, and urban development, presents considerable challenges in design. The authors explore how the exclusion of prime koala habitat from the proposed park for logging is inconsistent with koala protection, which needs to consider the integrity of the broader reserve system and be accorded the requisite status of World Heritage. A commentary on the implications from the social quality perspective is provided.

Keywords: conservation, habitat protection, hardwood plantations, koala, native forest logging, New South Wales, *Phascolarctos cinereus*

The authors acknowledge the Gumbaynggirr people on whose land the proposed park is located, and pay their respects to Elders past, present, and emerging. They also wish to recognize Dr. Leonie van der Maesen for her groundbreaking methodologies on sustainable forest management and community-based conservation in Australia. With the exception of Sean Cadman, all authors are members of the Koala History and Sustainability Research Cluster (www.khsrc.com) and acknowledge the assistance and support of other members of the group; the plantations-related research was conducted by Dr. Tim Cadman, funded by an internal grant provided by the Arts Education and Law Group of Griffith University, "Ensuring the Sustainability of Plantation Management: A Citizen Science Approach" (protocol 2022/466). Artwork: Danielle Clode.

This article is dedicated to the memory of Trevor Bailey, 10 July 1952–10 December 2023, a great friend to the koala.

ISSN: 1757-0344 (Print) • ISSN: 1757-0352 (Online)
doi:10.3167/IJSQ.2023.130104



Untitled Koala I, by Danielle Clode

The koala occupies a special place in the pantheon of Australian native animals. It has been a flagship species for conservation since its near extinction from hunting in the early 1900s and internationally attracts considerable funds for conservation and welfare efforts. Extensive land-clearing, forestry operations, urban development, and bushfires, exacerbated by climate change, have led to claims that, unless drastic action is taken, the koala will become extinct in parts of its native range by 2050. Domestically, there are continuing community calls for increased and improved protection for koalas.

This article begins with a description of the animal, its physiology, population dynamics, threats, and efforts to protect it at the landscape level. Touching on the so-called "koala wars" of recent decades, the article delineates the political environment confronting koala conservation. A case study situates this discussion in the context of the proposed Great Koala National Park (GKNP) in northeast New South Wales (NSW) and explores the challenges this initiative faces in trying to balance the political, economic, social, and environmental dynamics that a park of this scale must address if the koala is to survive in the wild. The article concludes that unless all forestry activities are ended within the GKNP footprint, and the area is listed as World Heritage, conservation strategies will not protect this internationally acclaimed icon, nor its habitat.

From a social quality perspective, the plight of the koala represents in microcosm the overall sustainability challenges of the Anthropocene. Beyond simply compensating resource-extractive industries for lost revenue, the community must be included in land-use decision-making at the local level, and global efforts to decarbonize the economic system must be accelerated as a matter of urgency. Without these actions, the current trajectory of the koala—and humanity—toward extinction is likely to continue.

Koala Biology

The koala (*Phascolarctos cinereus*), the sole living representative of the family Phascolarctidae (Strahan 1995), is a popular and iconic animal, internationally recognized as a flagship for conservation (Schlagloth et al. 2018). Koalas are a widely dispersed species across much of the forested southern and eastern seaboard of Australia.

A mostly solitary species, koalas generally maintain a very low population density, with one animal per 1 ha–300 ha (Clode 2022: 129), and maintain territory through vocalization and scent marking (Gordon et al. 1991). Koalas are a slow-breeding species, living for up to fifteen to eighteen years, reaching sexual maturity at two years, and usually giving birth to one young each year (Martin and Handasyde 1991). Many of these life history traits relate to the koala's diet as a specialist *Eucalyptus* spp. folivore. Koalas are reported to feed on around eighty-one of the 910 species of eucalypts found in Australian forests (Mitchell 2015) many of which are characterized by varying levels of toxicity and nutritional value, which is processed by the koala's specialized gut (Brice et al. 2019). Individual koalas are mostly restricted to a few *Eucalyptus* species prominent in a particular habitat (Moore and Foley 2000), but they are known to eat or use a wider range of tree species including *Lophostemon*, *Allocasuarina*, *Corymbia*, and *Melaleuca* (NSW Department of Planning and Environment 2023a). Consequently, in order to manage the varying and complex balance of toxicity and nutrition, koalas require large forest areas with the requisite number of suitable feed and shelter trees (Clode 2022).

History of Koala Populations

Once widespread across the forested areas of southeastern mainland Australia, populations of this unique marsupial were reduced to fragmented and isolated remnant populations by the early nineteenth century through land clearance and fur hunting, and they were declared extinct across most of their southern range. The koala's modern range spans the forested regions of five states and territories along the southeast and east coast of Australia: from north Queensland, through New South Wales, Australian Capital Territory, Victoria, and into the southeast corner of South Australia (Phillips 1990). They currently have a somewhat patchy distribution on the eastern seaboard and in the hinterland of New South Wales and southern Queensland, with large populations in small areas descended from reintroduced individuals and remnant populations in Victoria and South Australia (Clode 2022). There are no wild koala populations in Western Australia, Tasmania, or the Northern Territory.

While Indigenous Australians historically managed their interactions with koalas through complex systems of traditional knowledge and cultural lore (e.g., Cahir et al. 2020), the relations between European colonizers and the koala have been fraught. A study undertaken for the Australian Government by the International Union for the Conservation of Nature (IUCN) Threatened Species Commission in the mid-1990s claimed that since European settlement, numbers throughout the species' range may have decreased by more than 50 percent (Maxwell et al. 1996). Subsequent studies confirmed this trend (Melzer et al. 2000), with some claiming that almost a quarter of those remaining had gone by the second decade of the new millennium (Adams-Hosking et al. 2011) and with Queensland and New South Wales populations decreasing in abundance or becoming extinct (Rhodes et al. 2011; Seabrook et al. 2011). In February 2022, the koala was listed as endangered in Queensland, New South Wales, and the Australian Capital Territory (Department of Agriculture, Water and the Environment 2022a) under the Environment Protection and Biodiversity Conservation (EPBC) Act 1999 (Department of Climate Change Energy the Environment and Water 2023a).

Threats to Koalas

Although koalas are no longer hunted for fur, and now attract valuable tourist dollars, the koala still faces many threats to its survival (Department of Agriculture, Water and the Environment 2022b). These are outlined below.

Climate Change and Bushfires

Severe drought and bushfires have caused large numbers of koala deaths in certain populations in Queensland, such as Noosa (McAlpine et al. 2006), in New South Wales,

such as Port Stephens (Matthews et al. 2016), and in South Australia (Robinson et al. 1989; Dunstan et al. 2021). These factors are ongoing and expected to increase with continuing loss and fragmentation of koala habitat and the expected worsening in climatic conditions (Department of Agriculture, Water and the Environment 2022a; Lunney et al. 2007). Koalas are highly vulnerable to bushfires, which are a common feature of Australian eucalypt forests. The increased number and intensity of wildfires (Lunney et al. 2007) and climate change (Department of Agriculture, Water and the Environment 2022b; Rhodes et al. 2015; Seabrook et al. 2011) pose significant threats to koala survival through a range of factors, including changes to habitat and rainfall, as well as by potentially altering toxicity in leaves. The bushfires of the now infamous Black Summer of 2019–2020 have been estimated to have resulted in the death or injury of over sixty thousand koalas, although determining exact numbers is difficult (Cristescu et al. 2023; Penn et al. 2000; Van Eeden et al. 2020).

Habitat Loss and Fragmentation

Habitat loss and fragmentation are two of the many anthropogenic changes greatly affecting koala populations throughout Australia (Department of Climate Change, Energy, the Environment and Water 2023a; Lunney et al. 2007). The increased edge effect caused by habitat clearing can lead to a greater risk of predation and increased exposure to heat, exacerbated by climate change (Youngentob et al. 2021a; NSW Department of Planning and Environment 2022). Such changes also increase the distance between high-use areas within koala ranges (Rus et al. 2021), which increases energy expenditure and water intake (Davies et al. 2013). The low-nutrient and high-toxicity folivorous diet of koalas provides most of the water they need; however, water availability significantly impacts koala physiology and energetic balance. Climate change presents a further potential driver for reduced water access, affecting the ability to raise young and increasing mortality (Beale et al. 2018; Youngentob et al. 2021b).

Forestry and Agriculture

The impact of logging on koalas varies, and is dependent on type, intensity, frequency, and extent (Law et al. 2022a, 2022b). Forest conversion, or the clearing of native forest and its replacement with plantation timber, significantly affects biodiversity (Ashman and Watchorn 2019). Plantation forestry itself can also have a negative impact, due to the practice of clear-felling, which involves the complete removal of forest canopy, requiring koalas to leave these areas and find suitable habitat elsewhere (Hynes et al. 2021). Conversely, plantations can also provide highly desirable habitat, and habitat connectivity to natural forests (Ashman et al. 2020), if the right mix of plantation species and mature trees is present; however, the replacement of preferred browsing trees with secondary species not palatable to koalas degrades habitat suitability (Natural Resources Commission 2022) while failure to retain forest remnants

reduces the habitat value of plantations (Kavanagh and Stanton 2012). Overuse of clear-fall forestry, notably the creation of large gaps and the subsequent replacement of cleared areas with nonpreferred browse tree species, as well as the removal of favored koala tree species in native forestry and an emphasis on encouraging the regrowth of secondary, non-favored, species, have been criticized as incompatible with koala conservation (Smith 2004). The mortality of koalas in plantations due to forestry practices has led to efforts in the NGO sector to encourage the uptake of a consistent national code of practice (Phillips et al. 2014), but to date this has been unsuccessful, and koalas continue to be killed or injured during logging (Mayers and Jeuniewic 2023).

Land-clearing for agricultural activity also results in fragmentation and loss of biodiversity as increasing global food production leads to the conversion of native vegetation to farmland. This is resulting in an overall decline of koala numbers in the rural landscape, requiring management strategies that consider varying spatial and temporal scales, and involve a wide range of stakeholders across properties and tenures (Dargan et al. 2019). Farm forestry, particularly blue gum plantations, may attract koalas, but can also result in large-scale deaths if management operations are not properly supervised (Mayers and Jeuniewic 2023).

Urban Development, Predation, and Collision

Australia's sprawling suburbs are resulting in ever-increasing peri-urban contact between human development and the natural environment. Development, which results in both habitat loss and fragmentation, has transformed areas that were previously wild into urban ecosystems, where animals such as the koala must contend with housing, roads, domestic animals, and traffic if they are to survive (Gentle et al. 2019; Hundloe et al. 2015). Koalas are naturally hunted by dingoes, large owls, eagles, and snakes, with juveniles, back-young, and their mothers being the most vulnerable, but domestic and feral animals such as the dog, fox, and cat also prey on koalas, and vehicles and roads continue to take their toll and arguably pose a much greater threat (Lunney et al. 2022; Rhodes et al. 2015).

Genetic Diversity and Disease

Populations that become isolated due to loss of habitat risk the loss of genetic diversity due to the potential of genetic bottlenecks and diseases (Department of Agriculture, Water and the Environment 2022b; Sherwin et al. 2000; Tarlinton et al. 2005). Anthropogenic stressors have a direct impact on the health of wildlife, including koalas, with the increase in common and novel disease outbreaks causing the decline of many populations (Deem et al. 2001; McAlpine 2011). In fact, loss of habitat has been associated with the spread of infectious diseases in koalas (Rhodes et al. 2017a). Disease causes stress in koalas (Santamaria et al. 2023) and stressed koalas have an increased likelihood of being further affected by illnesses, hindering their natural recovery and

well-being (Department of Environment and Heritage Protection 2023). Furthermore, management initiatives, such as translocation, which may be implemented to mitigate the effect of habitat loss, can also be responsible for both acute and chronic stress, increasing the likelihood of disease occurrence such as *Chlamydia* infection (Chipman et al. 2008; Maxwell et al. 1996; Santamaria and Schlagloth 2016; Waugh et al. 2016). *Chlamydia pecorum* is one of the bacteria causing devastating diseases in koalas, affecting the urogenital system with cystitis, endometritis, pyelonephritis, and prostatitis, as well as causing blindness and impacting the respiratory tract (Burach et al. 2014).

Historical and Contemporary Approaches to Conserving Koalas at a Landscape Level

Effective koala conservation in a highly fragmented landscape with high pressure from alternative land uses, such as forestry, agriculture, and urban development, presents considerable challenges to conservation. Previous historical efforts at koala conservation in the early twentieth century in Australia were based on the capture and translocation of wild koalas to offshore islands in order to maintain insurance populations for reintroduction onto the mainland at a later date. This approach has been successful in that there are now thriving translocated "southern" populations of koala in both Victoria and South Australia. These animals have expanded into and recolonized areas of suitable habitat. This history is largely distinct from that of the extant wild "northern" populations of southeast Queensland and northern New South Wales. It is this wild, northern NSW population that inhabits the case study area, discussed below.

An integrated landscape approach to koala conservation allows for the consideration of the management of natural resources in a more holistic and cross-sectoral manner than conventional, single-sector management approaches (Arts et al. 2017; Freeman et al. 2015; Reed et al. 2017; Sayer et al. 2013; Coffey et al. 2011). In general, these approaches recognize that landscapes have multiple ecosystems and multiple stakeholders seeking differing, and sometimes conflicting, uses of the landscape. A similar model for public land management recommendations has been successfully employed in Victoria since the 1970s (Coffey et al. 2011). These approaches seek to balance protection of the ecosystems and their function with multiple uses and values (Arts et al. 2017; Freeman et al. 2015).

Recent years have seen a greater focus on Koala Plans of Management (KPoMs), with limited success. Although KPoMs are an effort to encourage an integrated landscape approach to koala management, they are limited by existing institutional arrangements and stakeholder priorities, including centralization and development (Schlagloth et al. 2022). For example, existing arrangements recognize neither the importance of genetic diversity in koala populations nor the maintenance of landscape linkages between previously connected populations. The loss of koalas from any part

of their historical range drastically reduces the genetic diversity of surviving populations. Conservation must therefore be prioritized on the basis of the scale and intensity of the processes that threaten surviving populations (Lott et al. 2023).

Case Study: The Proposed Great Koala National Park (GKNP)

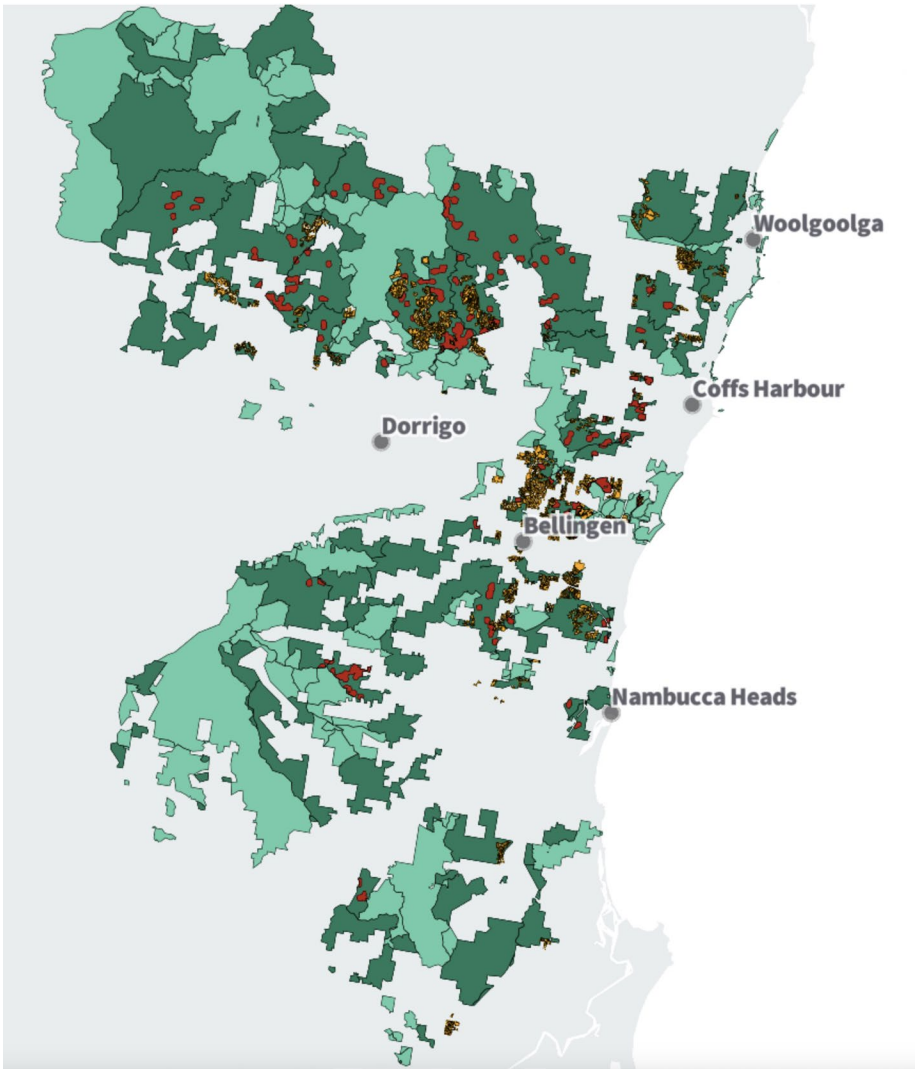


Figure 1. Great Koala National Park. OpenMapTiles, Open Street Map and contributors, Commons, public domain (Cadman and Clode 2023). Light green indicates existing national parks; dark green, state forests; red, koala hubs; yellow, plantations.

Background: The NSW Koala Wars

Koala policy in NSW in recent decades can be characterized as a series of unsuccessful attempts to balance protection with development. The Liberal–National Party (LNP) Coalition governments (2011–2023) were internally conflicted regarding natural resource management, culminating in the so-called "koala wars" between the more progressive, largely urban Liberals and their rural National counterparts (Davies 2020). While this epithet has been applied to political tensions over koala policy in other Australian jurisdictions (Haigh 2009), it is in NSW that they have been the most pronounced.

In 2016, in the face of a declining koala population, Liberal Premier Gladys Berekjiklian commissioned the state's Chief Scientist to undertake a review of policy, which resulted in a series of recommendations, notably on the need for the creation of a formal Koala Strategy to manage and mitigate threats at a landscape level, and the creation of a network of conservation areas across land tenures (O'Kane 2016). The Office of Environment and Heritage was given the task of analyzing records to map likely koala habitat as well as identifying areas of regional and local koala significance (ARKS and ALKS), also referred to as "koala hubs" (Rennison and Fisher 2017, cited in Brearley et al. 2019). The report was not made public at the time, leading to allegations that the NSW government was concerned that reservation of these areas was not "politically or industrially convenient" (National Parks Association of NSW 2018: 1), and the report was not formally published until April 2020, with minor changes (see NSW Department of Planning, Infrastructure and Environment 2020).

The Black Summer bushfires of 2019–2020 had a devastating impact on koalas and threatened species habitats, with the government permitting salvage logging operations in burnt forests, as well as in unburnt areas, and increasing logging in plantations (Cox 2020; Perkins and Foley 2020). A report arising from a parliamentary inquiry into koala populations and habitat in New South Wales found that, of the estimated 36,000 koalas extant in the wild, at least 5,000 had been lost to the fires, and the animal would become extinct in NSW before 2050 unless urgent action was taken (NSW Legislative Council 2020). Although the inquiry helped encourage the government to act on koala protection, it also brought internal differences to a head. These were focused around efforts to better protect the koala through a range of proposed changes to the State Environment Planning Policy 44 on agricultural land, the role of the Local Land Services agency and associated policy measures, and the approval of a number of KPoMs under consideration at that time. Effectively these disputes blocked progress on koala conservation (Hannam 2020). The Nationals' Deputy Premier, John Barilaro, threatened to join the cross-benches if the reforms went ahead (Davies and Cox 2020). Although Premier Berejiklian successfully called her Deputy's bluff, forcing him to back down, the hostilities recommenced under the new Premier, Dominic Perrottet, when the Nationals introduced their own, ultimately

unsuccessful, amendments to forestry laws to allow increased removal of habitat (Cox and Rose 2022; Rose and Cox 2022).

In January 2023, in the lead-up to the March elections, the NSW Australian Labor Party (ALP) (re)committed to implementing the Great Koala National Park (GKNP) if elected, pledging $80 million to cover costs of park consultation and creation (Parmeter 2023). Although this was criticized by the premier, the LNP's koala policy may be partially attributable to its defeat in the light of the numbers of independent or "teal" candidates who stood in a number of Liberal Party seats as a protest, among other environmental issues, over the government's failure to combat escalating land-clearing and habitat loss (McGowan and Rose 2023).

Origins of and Developments Regarding the GKNP

The GKNP encompasses more than 315,000 ha of public land, both national park and state forest, and is situated to the west of Coffs Harbour, 530 km north of Sydney in the Australian state of New South Wales. The region sits within the warm temperate and subtropical zones and is characterized by eucalypt forests and rainforests, which extend from the coast to the hinterland ranges. The claim that the GKNP, once gazetted, will be the first national park to protect koalas (University of Newcastle 2021) is not strictly correct. Dungirr National Park, gazetted in 1997, takes its name from the word for koala in the language of the Gumbaynggirr people (NSW National Parks and Wildlife Service n.d.), whose country extends approximately from modern-day Grafton to near Kempsey, and encompasses the footprint of the current proposed park. Other areas on the mid-north coast of NSW with known koala populations were protected during the 1990s. This included 978 ha of eucalypt plantation and native forest in and adjacent to Pine Creek State Forest in 1995, to which was added a further 3,156 ha in 2003 as a consequence of the North East Regional Forest Agreement (NSW Department of Planning, Infrastructure and Environment 2021) forming Bongil Bongil National Park.

These initiatives were largely piecemeal in nature, however. The idea for a larger regionwide park sufficient to protect koalas is said to have arisen out of a comprehensive study of the NSW north coast koala populations commissioned by local environment groups in 2012 (National Parks Association of NSW n.d.a). This examination recognized northern NSW as a koala location of national significance, and identified seven large (meta)populations and twenty-five sub-populations across six local government areas living in a broad range and quality of forest habitats, including hardwood plantations (Scotts 2013). In 2014 environmental NGOs began contemplating the GKNP concept (Bellingen Environment Centre n.d.), and by 2015, these metapopulations had been situated within a series of reserve proposals developed by the National Parks Association of NSW (NPA NSW). The largest and most comprehensive took in the Coffs Harbour–Guy Fawkes and the Bellinger–Nambucca–Macleay metapopulations, and was referred to as the Great Koala National Park, consisting of around 315,000

ha, comprising 175,000 ha of state forests and 140,000 ha of existing national parks (Love and Sweeney 2015). In the same year the NSW ALP, then in opposition, adopted the creation of the GKNP as policy (Nicholls 2015), taking the proposal to two (unsuccessful) elections, and the vision for a park remained unfulfilled.

Analysis of the data collected in the aftermath of the Black Summer bushfires indicates that around 1.6 million ha across northeast NSW were burned, including a significant amount of high-value habitat in both state forests and national parks, with approximately one-third of the proposed park affected, and as much as one-third of the population of koalas lost (Department of Climate Change, Energy, the Environment and Water 2023b; NSW Department of Environment and Planning 2022d; Perkins and Foley 2020).

Uncertainty regarding the future of the GKNP during this period, largely on account of the impacts of the fires and ongoing logging, appear to have sparked a number of smaller initiatives by local, community-based "Friends" groups, aimed at protecting parts of the larger park. A number of conservation proposals were launched, including more than 13,000 ha in the catchment forests of the Kalang, Bellinger, and Nambucca rivers, endorsed by Bellingen Shire Labor (Friends of Kalang Headwaters n.d.; Vivian 2021; Woodward 2023).

Parliamentary efforts to create a koala park in the interim also continued, with the NSW Greens introducing the Great Koala Protected Area Bill 2021 (NSW). While the boundaries of the proposed 2015 park included some plantations and excluded others, the bill explicitly ruled out plantations in the park (ibid., 3). The excision of plantations from the GKNP was endorsed by a number of environmental groups, albeit with some qualifications (Bellingen Environment Centre n.d.; National Parks Association of NSW n.d.b; Vivian 2022b). The removal of native hardwood timber from areas zoned plantation but not necessarily actual plantation, remained a source of concern, with allegations surfacing in the media and in NGO commentary that much of the forest in question had never been planted, and was in fact original forest, or secondary regrowth, and constituted important koala habitat (Pugh 2022; Vivian 2022a).

The bill, introduced in late 2021, was defeated in June 2022, unable to secure the support of either the LNP government or the Opposition. In what was condemned by the Greens as the triumph of politics over koalas (The Greens NSW 2022), NSW ALP Shadow Environment Minister Penny Sharpe justified the party's position by claiming that the bill would "put into the hands of an underfunded government department the creation of a national park that a hostile government does not want" (Fuller 2022).

The GKNP Today

On coming to power in 2023, the NSW ALP was both welcomed by environmental organizations for its commitment to creating the park and also heavily criticized for not suspending forestry operations within the proposed park. Forestry operations have continued within the proposed park since its inception, with claims that recent

activity has impacted somewhere between 10–20 percent, and have escalated due to deliberate targeting of the area, although this is disputed by the Forestry Corporation of NSW (FCNSW) (National Parks Association of NSW 2023b; O'Malley 2023a). NPA NSW again called for an end to native forest logging in the park, and a transition to plantation-based forestry (National Parks Association of NSW 2023a). Support for ongoing operations was confirmed by Minister Sharpe, although she indicated that the government had advised the state's regulatory body, the Environmental Protection Authority, to engage with the FCNSW "to encourage them to take a precautionary approach . . . in areas with highly suitable koala habitat . . . if forestry operations are necessary in these areas" (Jones 2023).

The controversy surrounding plantation forestry within the proposed park came to a head in May 2023. In response to a move by the Greens to turn a motion of support for native forest logging tabled by the National Party into an endorsement of plantation forestry, Minister Sharpe stated the government's explicit support for plantation-based operations within the park footprint and asserted that the government "must be very clear about what is plantation and what is native forestry and the way in which that is managed throughout the process of creating the great koala national park" (NSW 2023: 75).

The government's decision to allow all types of forestry operations within the park proposal over the course of negotiations prompted local residents and conservation organizations to hold a joint press conference in Parliament House, warning of the risks to koala lives and objecting, in the words of a representative of Friends of Orara East State Forest, to "the stench of dead animals that comes up after a logging operation" (Roe 2023a).

Concerns also began to be raised about the impacts of logging from within the scientific community at home and abroad (O'Malley 2023b; Vivian 2023), and in September the government moved to suspend logging in 8,400 ha of koala hubs contained within the state forests, receiving a mixed response. Some of these areas had already been logged, and they constituted a mere 5 percent of the park. With future gazettal deferred until 2025, this left more than 50 percent of known koala habitat in the area unprotected (Cox 2023). In addition, the government excluded plantations from the park assessment process, reducing the state forest to be considered for protection by 4,000 ha from the original 175,000 ha to 171,000 ha (Cadman and Clode 2023; NSW Department of Environment and Planning 2023a).

Having determined the parameters for the assessment of what was to be considered eligible for inclusion in the park, the government also announced that there would be a series of "independent" and "expert" social, economic, environmental, and cultural assessment processes, as well as three advisory panels made up of industry, community, and Aboriginal organizations (NSW Department of Environment and Planning 2023a). The rules of procedure and makeup of the panels are not public, but they are known to include "national and local conservation groups intended to represent the views of their affiliates and members" as well as "elected local government officials"

(Sharpe 2023). Local communities and "Friends" groups have not been included, leaving them to resolve their issues around ongoing logging through legal avenues and other forms of civil engagement (Williams 2023; Mackenzie 2024).

Evaluation of the GKNP at the Landscape Level

A recent synthesis of the multiple conceptualizations of landscape approaches suggests that effective, integrated landscape management rests on three pillars: ecosystem integrity, effective planning, and strong governance (Morgan et al. 2021).

Considering ecosystem integrity ensures that landscape structures and functions, and the ecosystem services they provide, are maintained (Mackey et al. 2023; Rogers et al. 2022). In this context, the exclusion of plantations from the park assessment is problematic. These plantations were established on previously cleared forested lands, and were subsequently replanted with mixed *Eucalyptus* species (*E. piluaris*, *E. grandis*, *E. microcorys*, and *E. saligna*) from the mid-1960s (Forestry Commission of NSW 1966). In some locations within the proposed park, notably Bellingen Shire, they constitute a major component of the forested landscape (see Figure 1). In some cases they are plantations in name only, and comprise silvicultural (post-logging) regrowth and original forest. While a small component of the park, they are important koala habitat due to their location, soil fertility, and moisture, but are being progressively converted to single-species monoculture. If excluded, they will continue to be available for clear-fall forestry, filling the park with holes for the foreseeable future, and severing some of the most important corridors, thereby hindering the movement of koalas across the landscape (Cadman and Clode 2023). Ongoing forestry operations scattered throughout the park severely compromise the ecological integrity of the GKNP.

Effective planning ensures that the impacts of land use changes and activities are understood and important aspects and values of the landscape are maintained into the future (Morgan et al. 2021). There is evidence that successive NSW governments have heeded the 2016 recommendations of the Chief Scientist, with the NSW Department of Environment and Planning reporting on several initiatives supporting the implementation of a Koala Strategy at a landscape level over the last eighteen months, and that they have developed strategies to enable planning for koala conservation into the future at a landscape level since then (NSW Department of Environment and Planning 2022a, 2022b, 2022c, 2023b). Data collection, availability, and quality to support these initiatives, however, have been beset by problems. Koala and other species sightings are slow to be uploaded onto governmental systems and records are missing, which casts doubt on the effectiveness of policies to protect wildlife (Roe 2023b). It should also be noted that there is no published academic literature on koala hubs, yet the concept has both policy traction and political currency. Its value may lie in the mutability of the concept, as it has been redefined on several occasions (Brearley et al. 2019; NSW Department of Planning and Environment 2023b; NSW Environment

Protection Authority 2023) and is an ongoing source of grants and consultancies (Biolink n.d.; NSW Office of Environment and Heritage 2019) via the state's Saving Our Species program and its Iconic Koala Project (NSW Department of Planning and Environment 2023c). A significant problem for GKNP planning is that much of the data underlying the proposed reservation is both incomplete and out of date, shortcomings that need to be taken into consideration in the context that a third of the park has been burned, including areas identified as hubs.

Strong governance in the forest policy and management arenas ensures that decision-making and deliberation are participatory, productive, and legitimate (Clode 2006: 70–71; Cadman 2012). Together these ensure high-integrity decision-making that considers multiple values and viewpoints and includes consideration of the ecosystems and their benefits in the landscape (Morgan et al. 2021). Including diverse interests and ensuring that they have a voice strengthens governance quality, while exclusion weakens it (Arts 2006; Kjaer 2004; Koenig-Archibugi 2006; Young 2000; Zurn and Koenig-Archibugi 2006). Inclusive and deliberative processes in environmental decision-making are important for the collective determination of what is to be valued, and how it is valued; exclusion of citizens needed for that evaluation undermines the legitimacy of any determined outcome (Vargas et al. 2017). Transparency is also important as it helps those with an interest in a given environmental issue to know and understand who is involved, as this helps shape the evaluation process, and why certain decisions have been made and for what reason (Berni 2017; Drew and Nyerges 2004). Including local knowledge makes the evidence base more accurate and provides an important mechanism for ground-truthing scientific and timber industry research, and once verified such knowledge improves the quality and accuracy of data, which cannot be achieved by species records alone. This is why other states such as Victoria formally integrate public consultation into their consultative processes (Clode 2006). Excluding local communities will lead to questions about the credibility and rigor of the GKNP consultation and its outcomes.

The Way Forward

Research has shown that protected areas increase the viability of koalas in forested landscapes (Terraube et al. 2023). Reserve design needs to focus on habitat quality but also has to take larger considerations into account, notably the threats posed by climate change, resource extraction, and predation (McAlpine et al. 2015; Reckless et al. 2018). Importantly, a broad mix of eucalypt and non-eucalypt tree species (*Angophora*, *Corymbia*, *Lophostemon*, or *Melaleuca*) is important, as is a mosaic of forest age-classes, soil types, and adjacent habitat (McAlpine et al. 2023). In short, an assessment that focuses on the forest the koala lives in, and on identifying, protecting, and restoring forest conservation values, will be critical to the integrity and viability of the park (See Figure 2).

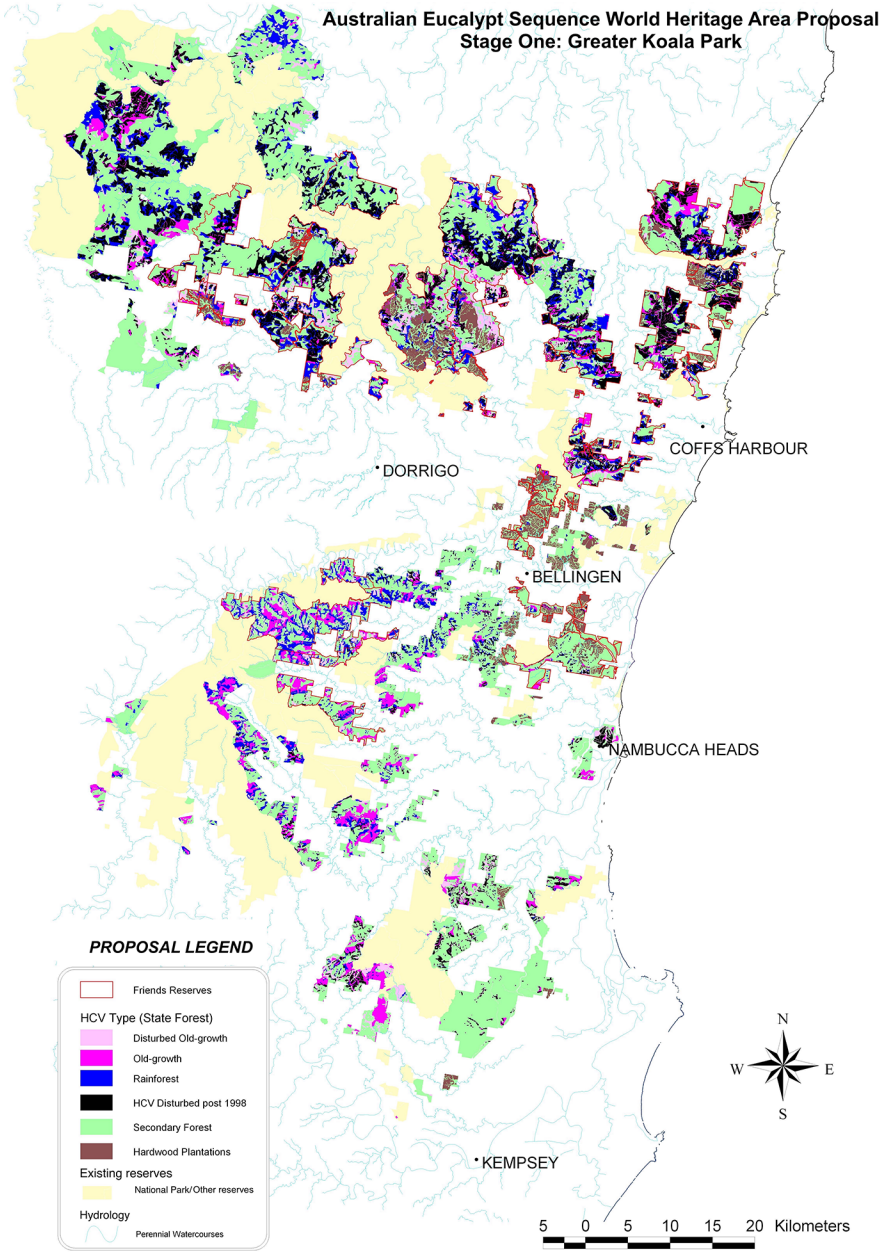


Figure 2. Map of proposed reserve, showing existing protected areas (yellow), Friends reserves (red boundaries), and conservation values within state forests. Source: NSW government data.

It is not the intention of the authors to elaborate in detail the conservation values of the state forests within the proposal footprint, except to note that: (a) a considerable area to the north, and some forests to the south, have seen those values degraded and are therefore in need of restoration; (b) the plantations straddle the entire proposal area and their excision compromises the connectivity and integrity of the park; and (c) the central section is largely undisturbed and of high conservation value and should be maintained as such, free from logging. Maintaining and restoring habitat mosaics, as well as refugia, can assist other species as well (McAlpine et al. 2015; Reckless et al. 2018). While alternative land uses can occur across a landscape, this is not an optimum approach to conservation, and research has shown that koalas survive best in large areas of high-quality habitat. Unless strategies are put in place to maintain these, the koala and other species will continue to decline (McAlpine et al. 2005).

Managing koalas is not merely a scientific process, and little attention has hitherto been paid to the social dynamics of koala conservation. In Queensland, for example, the Koala Expert Panel recognized the need "for partnership development and engagement with the broader community, utilizing an approach that is sensitive to the nature and views of local communities" (Rhodes et al. 2017b: iii). In many ways, the koala epitomizes the conflicts that can arise over competing land uses, with diverse interest groups advocating for (and against) koala protection. Greater collaboration across the natural and social sciences is required to inform policymaking (Stratford et al. 2000).

When scientific expertise is required, it is important that it is given to those sectors that need it in a way that enables them to maintain the specific roles they play, thereby contributing to sustainability. At the same time, however, political and economic players (such as government and industry) need to allow the academy to play its role, thereby balancing sociocultural and socioeconomic interests. If that science is funded, it is critical that it remains independent. It was this approach in Western Australia, for example, that led to a science-informed investigation into the sustainability of the state's forestry activities, and ultimately paved the way for a successful community and NGO campaign to end native forest logging activities (Van der Maesen and Cadman 2015).

Biological and cultural diversity are consequently interdependent, and natural and cultural heritage, it has been argued, should be considered as primary components of sustainable development (Roa 2012). The nomination and inscription of any future koala park on the list of World Heritage properties maintained by the United Nations Educational Scientific and Cultural Organization (UNESCO) may provide a greater level of national and international recognition and status than a simple national park. Visitor numbers to World Heritage-listed areas are usually higher, and they attract a greater number of international visitors and are beneficial to local interests and communities (Buckley 2004). The main body associated with evaluating World Heritage nominations, the IUCN, also "promotes a rights-based approach to conservation" and expects to "see indigenous peoples and local communities meaningfully involved in the development and implementation of laws, policies and plans when it comes

Table 1. List of the criteria for World Heritage assessment and indicative justification for nomination.

	Selection criteria	Value(s)	Eligibility	Indicative justification
(i)	to represent a masterpiece of human creative genius;	Cultural	NO	N/A
(ii)	to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning, or landscape design;	Cultural and Natural	YES	Cultural landscape managed by First Nations over millennia
(iii)	to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization that is living or that has disappeared;	Cultural	YES	Locality of First Nations creation stories and living culture relating to country
(iv)	to be an outstanding example of a type of building, architectural or technological ensemble, or landscape that illustrates (a) significant stage(s) in human history;	Cultural and Natural	YES	See (ii), (iii) above and (v), (vi) below
(v)	to be an outstanding example of a traditional human settlement, land use, or sea use that is representative of a culture (or cultures) or human interaction with the environment, especially when it has become vulnerable under the impact of irreversible change;	Cultural and Natural	YES	Locality of First Nations stories and culture relating to changes in country
(vi)	to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria);	Cultural	YES	See (ii), (iii), (iv), (v) above, notably creation stories
(vii)	to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;	Natural	YES	Several areas already listed with these values
(viii)	to be outstanding examples representing major stages of earth's history, including the record of life, significant ongoing geological processes in the development of landforms, or significant geomorphic or physiographic features;	Natural	YES	Several areas already listed due to Gondwana association
(ix)	to be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal, and marine ecosystems and communities of plants and animals;	Natural	YES	Locality for a diverse array of plants and animals, notably eucalypt species
(x)	to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation	Natural	YES	Known stronghold for endangered species, notably the koala

to designating new sites for World Heritage," which provides a strong participatory aspect to nomination (IUCN 2012). Consequently, while Word Heritage listing provides global recognition of an area as being of outstanding universal value, there is also a strong emphasis on both natural and cultural integrity (Gullino and Larcher 2013). Previous effort has been made in arguing the case for World Heritage for the unique *Eucalyptus* forests of northeastern NSW (Cerese 2012), and a nomination of various forest types, or sequences, would simultaneously capture koala habitat. Table 1 above lists assessment criteria and the rationale for nomination.

Conclusions and Recommendations

Complex, multidimensional problems require a comprehensive approach, and a positive transformation of the sociopolitical, sociocultural, socioenvironmental, and socioeconomic dimensions is required if overall sustainability is to be improved (Nijhuis and Van der Maesen 2021; Van der Maesen 2018). The overall sustainability of the approaches currently being adopted to address what might be termed the koala problematic have been limited at all levels of Australian government. In the specific context of the Great Koala National Park, an overly political focus on securing a forestry deal that appeases environmental groups and the timber industry risks losing sight of the koala and their habitat requirements. On a broader level, the complex of activities currently underway will impact both the course of those efforts and the measures and outcomes taken. The koala occupies a unique cultural position in Australia as well as internationally, and failing to take this into account may have negative political consequences, as well as a societal impact (Stratford et al. 2000; Nijhuis and Van der Maesen 2021).

An integrated approach that identifies, maps, and protects community, cultural, and natural values at the landscape level is the best way forward for the koala into the future. Consequently, an emphasis on protecting forest habitat in collaboration with the community should be the focus of any koala strategy, whether regional, in the case of the koala park, or local, in the case of municipal plans of management. Such an emphasis allows for scalability, which will be critical given expanding human populations and escalating environmental threats caused by climate change.

The NSW government has a simple choice when it comes to implementing the GKNP. It can opt for a purely state-based 'national' park, or it can aim for a reserve suitable for World Heritage nomination. In the case of the first option, it can afford to overlook the local community and exclude plantations, but risks undermining the integrity of the park and the viability of the local koala population. Alternatively, it can pursue World Heritage nomination, but this would require greater consultation and a more comprehensive assessment of the cultural and natural values of the park. Whatever decision it makes, it must concentrate on expanding, maintaining, and restoring habitat. To do anything less would be to fail to see the koala for the trees.

Untitled Koala II, by Danielle Clode

Tim Cadman is from the Institute for Ethics, Governance and Law, Griffith University, Nathan 4111, Australia. He specializes in the governance of sustainable development, climate change, natural resource management including forestry, responsible investment, and institutional performance. He has a long-term working relationship with the people of Nepal, with whom he is currently working to implement governance standards for red panda conservation, natural habitat protection, and forest governance. He also works with researchers, local communities, and other stakeholders to ensure the long-term survival of Australia's wild koala population.
ORCID: 0000-0002-9531-5018; email: t.cadman@griffith.edu.au
(corresponding author).

Rolf Schlagloth is from Koala Research—CQ and the Flora, Fauna and Freshwater Research Cluster, Central Queensland University, Rockhampton North 4701, Australia. He is a lecturer, researcher, and koala ecologist at Central Queensland University and leads Koala Research—CQ. His PhD and subsequent work have examined koala roadkill blackspots along highways in Victoria and Queensland and the use of habitat in these areas by koalas. Since 1992, Rolf has worked on many aspects of the koala in different capacities, collaborating with universities, industry, government, and community on projects relating to koala history, education, ecology, and management. He believes in the power of the koala as a flagship for education and conservation and recognizes that we must learn from our history to inform future management.
ORCID: 0000-0001-7710-3786; email: r.schlagloth@cqu.edu.au.

Flavia Santamaria is from Koala Research—CQ and the Flora, Fauna and Freshwater Research Cluster, Central Queensland University, Rockhampton North 4701, Australia. She is a koala biologist with Koala Research—CQ at the School of Health, Medical and Applied Sciences at Central Queensland University. Flavia's PhD investigated the impact of translocation on the health (chlamydial disease), tree species selection, and movement of radio-tracked koalas relocated from French Island to forests around Ballarat. Flavia has been collaborating with Australian and international researchers in the field of metabolomics, adrenocortical activity, and veterinary applications to successfully find the best approach to detect stress in koalas. She established the Koala Research—CQ laboratory, focusing on noninvasive approaches to the study of koala health. ORCID: 0000-0002-6557-1336; email: f.santamaria@cqu.edu.au.

Ed Morgan is from the Cities Research Institute, Griffith University, Nathan 4111, Australia. He is a transdisciplinary Research Fellow at the Policy Innovation Hub, Griffith University. His research focuses on developing, implementing, and evaluating policy, planning, and governance for landscape and natural resource management, sustainable livelihoods, ecosystem-based climate change adaptation, and environmental protection. He is interested in applying, evaluating, and improving planning and governance to support transdisciplinary, participatory action research around issues

of sustainability, natural resource management, and environmental governance in both developing and industrialized countries, and particularly in the role knowledge can play in addressing environmental challenges. Email: ed.morgan@griffith.edu.au.

Danielle Clode is from the College of Humanities, Arts and Social Sciences, Flinders University, Adelaide 5000, Australia. She is a conservation biologist and interdisciplinary scholar as well as the author of popular and environmental science books. She has written widely on Australian environmental science history, including paleontology, environmental land management, and bushfire history. Her latest book, *Koala: A Life in Trees*, provides a broad synthesis of the current state of research into koalas, from their prehistory to current challenges across a wide range of disparate disciplines. The book received a Whitley Award from the Royal Zoological Society of New South Wales for best popular ecology book in 2023.
ORCID: 0000-0001-9838-6105; email: contact@danielleclode.com.au.

Sean Cadman is from the Cadman & Norwood Environmental Consultancy, PO Box 212, Deloraine, Tasmania 7304, Australia. He is an environmental consultant and a member of the Policy and Standards Committee of the Forest Stewardship Council International (Bonn). He has had a long career in the environmental field as a professional working at a policy level, undertaking technical assessment work and conservation mapping. He is a strong advocate of environmental justice, particularly as it relates to the management and protection of forests. He is based in Tasmania where he helps manage Forest Walks Lodge and undertakes consultancy and advocacy work. Email: sean.cadman@gmail.com.

References

Adams-Hosking, C., H. S. Grantham, J. R. Rhodes, C. McAlpine, and P. T. Moss. 2011. "Modelling Climate-Change-Induced Shifts in the Distribution of the Koala." *Wildlife Research* 38 (2): 122–30.

Arts, B. 2006. "Non-State Actors in Global Governance: New Arrangements beyond the State." In *New Modes of Governance in the Global System: Exploring Publicness, Delegation and Inclusiveness*, ed. M. Koenig-Archibugi and M. Zurn, 177–200. Basingstoke: Palgrave Macmillan.

Arts, B., M. Buizer, L. Horlings, V. Ingram, C. Van Oosten, and P. Opdam. 2017. "Landscape Approaches: A State-of-the-Art Review." *Annual Review of Environment and Resources* 42: 439–463.

Ashman, K. R., A. R. Rendall, M. R. E. Symonds, and D. Whisson. 2020. "Understanding the Role of Plantations in the Abundance of an Arboreal Folivore." *Landscape and Urban Planning* 193: 103684.

Ashman, K. R., and D. Watchorn. 2019. "Quantifying Landscape Change as a Consequence of Plantation Forestry Expansion: A Case Study of the Koala Zone in South-West Victoria." *Australian Forestry* 82 (2): 116–122.

Beale, P. K., K. J. Marsh, W. J. Foley, and B. D. Moore. 2018. "A Hot Lunch for Herbivores: Physiological Effects of Elevated Temperatures on Mammalian Feeding Ecology." *Biological Reviews* 93 (1): 674–692.

Bellingen Environment Centre. n.d. "The Great Koala National Park." https://www.bellingenenvironmentcentre.org.au/bec/web/great-koala-national-park (accessed 30 January 2024).

Berni, M. 2017. "Dialogue and Transparency in Decision-Making." *Valori e Valutazioni* 17: 25–28.

Biolink. n.d. "Past Projects." https://www.biolink.com.au/projects/past (accessed 30 January 2024).

Brearley, G., S. Phillips, K. Wallis, and K. Lane. 2019. "A Bird in the Hand . . . Coming to Grips with the Concept and Components of Koala Source Populations." Uki: Biolink Ecological Consultants. https://www.biolink.com.au/sites/www.biolink.com.au/files/publications/Koala%20Hubs.pdf (accessed 30 January 2024).

Brice, K. L., P. Trivedi, T. C. Jeffries, M. D. Blyton, C. Mitchell, B. K. Singh, and B. D. Moore. 2019. "The Koala (*Phascolarctos cinereus*) Faecal Microbiome Differs with Diet in a Wild Population." *PeerJ* 7: e6534.

Buckley, R. 2004. "The Effects of World Heritage Listing on Tourism to Australian National Parks." *Journal of Sustainable Tourism* 12 (1): 70–84.

Burach, F., A. Pospischil, J. Hanger, J. Loader, T. Pillonel, G. Greub, and N. Borel. 2014. "Chlamydiaceae and Chlamydia-Like Organisms in the Koala (*Phascolarctos cinereus*): Organ Distribution and Histopathological Findings." *Veterinary Microbiology* 172 (1–2): 230–240.

Cadman, T. 2012. "Evaluating the Quality and Legitimacy of Global Governance: A Theoretical and Analytical Approach." *International Journal of Social Quality* 2 (1): 4–23.

Cadman, T., and D. Clode. 2023. "A Home among the Gum Trees: Will the Great Koala National Park Actually Save Koalas?" *The Conversation*, 3 December. https://theconversation.com/a-home-among-the-gum-trees-will-the-great-koala-national-park-actually-save-koalas-217276.

Cahir, F., R. Schlagloth, and I. D. Clark. 2020. "The Historic Importance of the Koala in Aboriginal Society in New South Wales, Australia: An Exploration of the Archival Record." *ab-Original* 3 (2): 172–191.

Cerese, B. 2012. *The Eucalypt Forests of Northeast New South Wales: A Preliminary Assessment and Documentation of Their World Heritage Values*. Sydney: National Parks Association NSW.

Chipman, R., D. Slate, C. Rupprecht, and M. Mendoza. 2008. "Downside Risk of Wildlife Translocation." USDA National Wildlife Research Center—Staff Publications, 1896. https://digitalcommons.unl.edu/icwdm_usdanwrc/1896 (accessed 30 January 2024).

Clode, D. 2006. *As If for a Thousand Years: A History of Victoria's Land Conservation and Environment Conservation Councils*. Melbourne: VEAC.

Clode, D. 2022. *Koala: A Life in Trees*. Melbourne: Black Inc.

Coffey, B., J. A. Fitzsimons, and R. Gormly. 2011. "Strategic Public Land Use Assessment and Planning in Victoria, Australia: Four Decades of Trailblazing but Where to from Here?" *Land Use Policy* 28 (1): 306–313.

Cox, L. 2020. "State MPs Dismayed at NSW Forestry Logging Unburnt Habitat after Bushfires." *Guardian*, 15 March. https://www.theguardian.com/environment/2020/mar/15/state-mps-dismayed-at-nsw-forestry-logging-unburnt-habitat-after-bushfires.

Cox, L. 2023. "Greens and Environmentalists Question Initial Plan to Pause Logging in Just 5% of NSW's Promised Koala Park." *Guardian*, 13 September. https://www.theguardian.com/environment/2023/sep/13/greens-and-environmentalists-question-initial-plan-to-pause-logging-in-just-5-of-nsws-promised-koala-park

Cox, L., and T. Rose. 2022. "NSW Government Accused of Reopening 'Koala Wars' with New Forestry Bill." *Guardian*, 9 November. https://www.theguardian.com/australia-news/2022/nov/09/nsw-government-accused-of-reopening-koala-wars-with-new-forestry-bill.

Cristescu, R. H., R. Gardiner, J. Terraube, K. McDonald, D. Powell, A. L. Levengood, and C. H. Frère. 2023. "Difficulties of Assessing the Impacts of the 2019–2020 Bushfires on Koalas." *Austral Ecology* 48 (1): 12–18.

Dargan, J. R., M. Moriyama, V. S. Mella, D. Lunney, and M. S. Crowther. 2019. "The Challenge for Koala Conservation on Private Land: Koala Habitat Use Varies with Season on a Fragmented Rural Landscape." *Animal Conservation* 22 (6): 543–555.

Davies, A. 2020. "Eats, Shoots and Leaves Politics in Disarray: The Week Koala Wars Broke out in Australia." *Guardian*, 12 September. https://www.theguardian.com/australia-news/2020/sep/12/eats-shoots-and-leaves-politics-in-disarray-the-week-koala-wars-broke-out-in-australia.

Davies, A., and L. Cox. 2020. "Koalas Still under Threat in NSW Despite Berejiklian's Ultimatum to Nationals." *Guardian*, 15 September. https://www.theguardian.com/environment/2020/sep/15/koalas-still-under-threat-in-nsw-despite-berejiklians-ultimatum-to-nationals.

Davies, N., G. Gramotnev, L. Seabrook, A. Bradley, G. Baxter, J. Rhodes, et al. 2013. "Movement Patterns of an Arboreal Marsupial at the Edge of Its Range: A Case Study of the Koala." *Movement Ecology* 1 (1): 1–15.

Deem, S. L., W. B. Karesh, and W. Weisman. 2001. "Putting Theory into Practice: Wildlife Health in Conservation." *Conservation Biology* 15 (5): 1224–1233.

Department of Agriculture, Water and the Environment. 2022a. *Conservation Advice for* Phascolarctos cinereus *(Koala) Combined Populations of Queensland, New South Wales and the Australian Capital Territory*. Canberra.

Department of Agriculture, Water and the Environment. 2022b. *National Recovery Plan for the Koala* Phascolarctos cinereus *(Combined Populations of Queensland, New South Wales and the Australian Capital Territory)*. Canberra. https://www.dcceew.gov.au/sites/default/files/documents/recovery-plan-koala-2022.pdf (accessed 30 January 2024).

Department of Climate Change, Energy, the Environment and Water. 2023a. "Koalas." https://www.dcceew.gov.au/environment/biodiversity/threatened/species/koalas (accessed 30 January 2024).

Department of Climate Change, Energy, the Environment and Water. 2023b. "National Indicative Aggregated Fire Extent Dataset." https://fed.dcceew.gov.au/datasets/erin::national-indicative-aggregated-fire-extent-dataset/explore?location=-30.373633%2C152.638598%2C10.00 (accessed 30 January 2024).

Department of Environment and Heritage Protection. 2023. "Koala Threats." https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/threats (accessed 30 January 2024).

Drew, C. H., and T. L. Nyerges. 2004. "Transparency of Environmental Decision Making: A Case Study of Soil Cleanup inside the Hanford 100 Area." *Journal of Risk Research* 7 (1): 33–71.

Dunstan, E., O. Funnell, J. McLelland, F. Stoeckeler, E. Nishimoto, D. Mitchell, et al. 2021. "An Analysis of Demographic and Triage Assessment Findings in Bushfire-Affected Koalas (*Phascolarctos cinereus*) on Kangaroo Island, South Australia, 2019–2020." *Animals* 11 (11): 3237.

Forestry Commission of NSW. 1966. *Major Plantation Species of New South Wales*. Technical Paper 0548-6807, no. 11. Sydney.

Freeman, O. E., L. A. Duguma, and P. A. Minang. 2015. "Operationalizing the Integrated Landscape Approach in Practice." *Ecology and Society* 20 (1).

Friends of Kalang Headwaters. n.d. "Headwaters Conservation Proposal." http://friendsofkalangheadwaters.com.au/index.php/headwaters-conservation-proposal/ (accessed 30 January 2024).

Fuller, K. 2022. "NSW Premier Defends State's Koala Plan as Outgoing MP Catherine Cusack Slams it as 'Sheer Madness.'" *ABC Illawarra*, 9 June. https://www.abc.net.au/news/2022-06-09/nsw-govt-defends-koala-plan-amid-fresh-accusations-of-politicisa/101140520.

Gentle, M., B. L. Allen, J. Oakey, J. Speed, L. Harriott, J. Loader, et al. 2019. "Genetic Sampling Identifies Canid Predators of Koalas (*Phascolarctos cinereus*) in Peri-Urban Areas." *Landscape and Urban Planning* 190.

Gordon, G., D. McGreevy, and B. Lawrie. 1991. "Koala Population Turnover and Male Social Organization." In *Biology of the Koala*, ed. A. K. Lee et al., 189–192. Sydney: Surrey Beatty.

Great Koala Protected Area Bill 2021 (NSW). Parliament of New South Wales. https://www.parliament.nsw.gov.au/bills/Pages/Profiles/great-koala-protected-area-bill-2021.aspx (accessed 30 January 2024).

Gullino, P., and F. Larcher. 2013. "Integrity in UNESCO World Heritage Sites: A Comparative Study for Rural Landscapes." *Journal of Cultural Heritage* 14 (5): 389–395.

Haigh, G. 2009. "The Koala Wars." *Guardian*, 23 November. https://www.theguardian.com/environment/2009/nov/23/koala-extinction-australia-political-war.

Hannam, P. 2020. "A State of Disarray as Koala War Continues to Rage." *Sydney Morning Herald*, 22 November. https://www.smh.com.au/environment/conservation/a-state-of-disarray-as-koala-war-continues-to-rage-20201120-p56gik.html#sections.

Hundloe, T. J., B. McDougall, and C. Page. 2015. *The Gold Coast Transformed: From Wilderness to Urban Ecosystem*. Clayton: CSIRO.

Hynes, E. F., D. A. Whisson, and J. Di Stefano. 2021. "Response of an Arboreal Species to Plantation Harvest." *Forest Ecology and Management* 490: 119092.

IUCN [International Union for Conservation of Nature]. 2012. "Regaining their Rights: Indigenous Peoples and World Heritage." 24 June. https://www.iucn.org/content/regaining-their-rights-indigenous-peoples-and-world-heritage.

Jones, A. 2023. "Conservation Council Calls for Logging Moratorium in Proposed Great Koala National Park." *ABC Mid North Coast*, 29 May. https://www.abc.net.au/news/2023-05-29/great-koala-national-park-logging-moratorium/102386396.

Kavanagh, R. P., and M. A. Stanton. 2012. "Koalas Use Young *Eucalyptus* Plantations in an Agricultural Landscape on the Liverpool Plains, New South Wales." *Ecological Management and Restoration* 13 (3): 297–305.

Kjaer, A. M. 2004. *Governance*. Cambridge: Polity Press.

Koenig-Archibugi, M. 2006. "Introduction: Institutional Diversity in Global Governance." In *New Modes of Governance in the Global System: Exploring Publicness, Delegation and Inclusiveness*, ed. M. Koenig-Archibugi and M. Zurn, 1–30. Basingstoke: Palgrave Macmillan.

Law, B., L. Gonsalves, J. Burgar, T. Brassil, I. Kerr, C. O'Loughlin, et al. 2022a. "Regulated Timber Harvesting Does Not Reduce Koala Density in North-East Forests of New South Wales." *Scientific Reports* 12 (1): 3968.

Law, B., C. Slade, L. Gonsalves, T. Brassil, C. Flanagan, and I. Kerr. 2022b. "Tree Use by Koalas after Timber Harvesting in a Mosaic Landscape." *Wildlife Research* 50 (7): 581–592.

Lott, M. J., G. J. Frankham, M. D. Eldridge, D. E. Alquezar-Planas, L. Donnelly, K. R. Zenger, et al. 2023. "Reversing the Decline of Threatened Koala (*Phascolarctos cinereus*) Populations in New South Wales: Using Genomics to Define Meaningful Conservation Goals." *bioRxiv*.

Love, A., and O. F. Sweeney. 2015. "A Blueprint for a Comprehensive Reserve System for Koalas (*Phascolarctos cinereus*) on the North Coast of New South Wales." Sydney: National Parks Association of New South Wales. https://npansw.org.au/wp-content/uploads/2016/10/blueprint_v2.pdf (accessed 30 January 2024).

Lunney, D., S. Gresser, L. E. O'Neill, A. Matthews, and J. Rhodes. 2007. "The Impact of Fire and Dogs on Koalas at Port Stephens, New South Wales, Using Population Viability Analysis." *Pacific Conservation Biology* 13 (3): 189–201.

Lunney, D., M. Predavec, L. Sonawane, C. Moon, and J. R. Rhodes. 2022. "Factors that Drive Koala Roadkill: An Analysis across Multiple Scales in New South Wales, Australia." *Australian Mammalogy* 44 (3): 328–337.

Mackenzie, B. 2024. "Logging Operations to Continue between NSW and Queensland after Judge Rejects Environmentalists' Court Bid." *ABC News*, 20 January. https://www.abc.net.au/news/2024-01-10/nsw-forestry-court-decision-logging-nefa/103300986.

Mackey, B., E. Morgan, and H. Keith. 2023. "Evaluating Forest Landscape Management for Ecosystem Integrity." *Landscape Research*.

Martin, R. W., and K. Handasyde. 1991. "Population Dynamics of the Koala (*Phascolarctos cinereus*) in Southeastern Australia." In *Biology of the Koala*, ed. A. K. Lee et al., 75–84. Sydney: Surrey Beatty.

Matthews, A., D. Lunney, S. Gresser, and W. Maitz. 2016. "Movement Patterns of Koalas in Remnant Forest after Fire." *Australian Mammalogy* 38 (1): 91–104.

Maxwell, S., A. A. Burbidge, and K. Morris. 1996. *Action Plan for Australian Marsupials and Monotremes: Part 1*. Canberra: Environment Australia.

Mayers, L., and L. Jeuniewic. 2023. "Magistrate Fines Earthmoving Contractor $79k over Koala Deaths at Victorian Bluegum Plantation." *ABC Ballarat*, 16 November. https://www.abc.net.au/news/2023-11-16/cape-bridgewater-koala-deaths-bryants-forestry-and-earthmoving/103112004.

McAlpine, C. 2011. "Relationships between Human-Induced Habitat Disturbance, Stressors and Disease in Koalas." Paper presented at the Proceedings of the Koala Research Network Disease Workshop, Brisbane, Australia.

McAlpine, C. A., M. E. Bowen, J. G. Callaghan, D. Lunney, J. R. Rhodes, D. L. Mitchell, et al. 2006. "Testing Alternative Models for the Conservation of Koalas in Fragmented Rural–Urban Landscapes." *Austral Ecology* 31 (4): 529–544.

McAlpine, C. A., J. Callaghan, D. Lunney, J. R. Rhodes, R. Goldingay, W. Goulding, et al. 2023. "Influences on Koala Habitat Selection across Four Local Government Areas on the Far North Coast of NSW." *Austral Ecology* 48 (5): 928–951.

McAlpine, C. A., J. G. Callaghan, D. Lunney, M. E. Bowen, J. R. Rhodes, D. L. Mitchell, and H. P. Possingham. 2005. *Conserving South-East Queensland Koalas: How Much Habitat is Enough*. In *Biodiversity Conference Proceedings*, 11–17. Gatton: University of Queensland.

McAlpine, C., D. Lunney, A. Melzer, P. Menkhorst, S. Phillips, D. Phalen, et al. 2015. "Conserving Koalas: A Review of the Contrasting Regional Trends, Outlooks and Policy Challenges." *Biological Conservation* 192: 226–236.

McGowan, M., and T. Rose. 2023. "Koala Preservation Opens New Front for NSW Teals as They Seek to Win Coalition Seats." *Guardian*, 20 January. https://www.theguardian.com/australia-news/2023/jan/20/koala-preservation-opens-new-front-for-nsw-teals-as-they-seek-to-win-coalition-seats.

Melzer, A., F. Carrick, P. Menkhorst, D. Lunney, and B. S. John. 2000. "Overview, Critical Assessment, and Conservation Implications of Koala Distribution and Abundance." *Conservation Biology* 14 (3): 619–628.

Mitchell, D. 2015. *National Koala Tree Planting List*. Brisbane: Australian Koala Foundation. https://www.savethekoala.com/wp-content/uploads/2017/02/20150212_AKF_National_Koala_Tree_Planting_List.pdf (accessed 30 January 2024).

Moore, B. D., and W. J. Foley. 2000. "A Review of Feeding and Diet Selection in Koalas (*Phascolarctos cinereus*)." *Australian Journal of Zoology* 48 (3): 317–333.

Morgan, E. A., T. Cadman, and B. Mackey. 2021. "Integrating Forest Management across the Landscape: A Three Pillar Framework." *Journal of Environmental Planning and Management* 64 (10): 1735–1769.

National Parks Association of NSW. 2018. "Saving Koalas Will Take More Than Token Gestures but the Pathway is Clear." Report on Freedom of Information request. https://npansw.org.au/wp-content/uploads/2018/09/KoalaGIPAanalysis_Sep18.pdf (accessed 30 January 2024).

National Parks Association of NSW. 2023a. "NSW Must Follow Victoria's Lead on Ending Native Forestry Logging by the End of the Year." 24 May. https://npansw.org.au/2023/05/24/nsw-must-follow-victorias-lead-on-ending-native-forestry-logging-by-the-end-of-the-year/.

National Parks Association of NSW. 2023b. "Time for an Moratorium on All Logging of Native Forests in the Great Koala National Park." 9 February. https://npansw.org.au/2023/02/09/time-for-an-moratorium-on-all-logging-of-native-forests-in-the-great-koala-national-park/ (accessed 30 January 2024).

National Parks Association of NSW. n.d.a. "The History of the Great Koala National Park Proposal." https://www.koalapark.org.au/history (accessed 30 January 2024).

National Parks Association of NSW. n.d.b. "Public Plantations." https://npansw.org.au/public-plantations/ (accessed 30 January 2024).

Natural Resources Commission. 2022. *Koala Response to Harvesting in NSW North Coast State Forests*. NSW Koala Strategy, Department of Planning and Environment. Sydney. https://www.nrc.nsw.gov.au/Final%20report%20-%20Koala%20research%20program%20-%20December%202022%20v2.1.pdf?downloadable=1 (accessed 30 November 2024).

Nicholls, S. 2015. "'We Have to Act': Luke Foley Promises Australia's First Koala National Park on NSW North Coast." *Sydney Morning Herald*, 18 January. https://www.smh.com.au/national/nsw/we-have-to-act-luke-foley-promises-australias-first-koala-national-park-on-nsw-north-coast-20150118-12slku.html.

NSW. 2021. "Great Koala Protected Area Bill 2021." https://www.parliament.nsw.gov.au/bill/files/3936/FirstPrint.pdf (accessed 1 March 2024).

NSW. 2023. "Parliamentary Debates. Legislative Assembly. Wednesday 31 May 2023." https://api.parliament.nsw.gov.au/api/hansard/search/daily/pdf/HANSARD-1820781676-92004 (accessed 30 January 2024).

NSW Department of Environment and Planning. 2022a. "NSW Koala Strategy 2018–21 Final Report." https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/koala-strategy-2018-21-final-report-220109.pdf (accessed 30 January 2024).

NSW Department of Environment and Planning. 2022b. "NSW Koala Strategy Implementation Plan and Progress Report 2021–22." https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/koala-strategy-implementation-plan-and-progress-report-2021-22-220576.pdf (accessed 30 January 2024).

NSW Department of Environment and Planning. 2022c. "NSW Koala Strategy: Towards Doubling the Number of Koalas in New South Wales by 2050." Parramatta. https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/koala-strategy-2022-220075.pdf (accessed 31 January 2024).

NSW Department of Environment and Planning. 2022d. *Post-Fire Koala Surveys in North-East NSW 2020*. Parramatta. https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/post-fire-koala-surveys-north-east-nsw-2020-220184.pdf (accessed 30 January 2024).

NSW Department of Environment and Planning. 2023a. "Great Koala National Park." 30 November. https://www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/establishing-new-parks-and-protected-areas/new-parks-and-changes-to-parks/great-koala-national-park.

NSW Department of Environment and Planning. 2023b. "NSW Koala Summit." https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/programs-legislation-and-framework/nsw-koala-strategy (accessed 30 January 2024).

NSW Department of Planning and Environment. 2022. "Koala Habitat Restoration Guidelines." 15 March. https://www.environment.nsw.gov.au/research-and-publications/publications-search/koala-habitat-restoration-guidelines.

NSW Department of Planning and Environment. 2023a. "Restoring Koala Habitat—North Coast Koala Management Area." https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/programs-legislation-and-framework/nsw-koala-strategy/local-government-resources-for-koala-conservation/north-coast-koala-management-area (accessed 30 January 2024).

NSW Department of Planning and Environment. 2023b. "Saving Koalas: Next Steps for the Great Koala National Park." 12 September. https://www.environment.nsw.gov.au/news/saving-koalas-next-steps-for-the-great-koala-national-park.

NSW Department of Planning and Environment. 2023c. "Saving Our Species Program." 29 November. https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/saving-our-species-program.

NSW Department of Planning, Infrastructure and Environment. 2020. "Framework for the Spatial Prioritisation of Koala Conservation Actions in NSW." Sydney. https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/framework-spatial-prioritisation-koala-conservation-190045.pdf (accessed 30 January 2024).

NSW Department of Planning, Infrastructure and Environment. 2021. "NSW National Parks and Wildlife Service: Bongil Bongil National Park; Plan of Management." https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Parks-reserves-and-protected-areas/Parks-plans-of-management/bongil-bongil-national-park-plan-of-management-210129.pdf (accessed 30 January 2024).

NSW Environment Protection Authority. 2023. "Coastal Integrated Forestry Operations Approvals." https://www.epa.nsw.gov.au/your-environment/native-forestry/public-native-forestry/integrated-forestry-operations-approvals/coastal-ifoa (accessed 30 January 2024).

NSW National Parks and Wildlife Service. n.d. "Dungirr National Park." https://www.nationalparks.nsw.gov.au/visit-a-park/parks/dunggir-national-park (accessed 30 January 2024).

NSW Office of Environment and Heritage. 2019. "Iconic Koala Project Investment for 2016–19." Sydney. https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/iconic-koala-project-investment-190138.pdf (accessed 30 January 2024).

NSW Legislative Council. 2020. *Koala Populations and Habitat in New South Wales*. Portfolio Committee No. 7—Planning and Environment. https://www.parliament.nsw.gov.au/lcdocs/inquiries/2536/Koala%20populations%20and%20habitat%20in%20New%20South%20Wales%20-%20Report%203.pdf (accessed 30 January 2024).

Nijhuis, H. G. J., and L. J. G. van der Maesen. 2021. "The COVID-19 Pandemic and Climate Change: Expressions of Global Ecological and Societal Misbalances." *International Journal of Social Quality* 11: 321–35.

O'Kane, M. 2016. *Report of the Independent Review into the Decline of Koala Populations in Key Areas of NSW.* NSW Chief Scientist and Engineer and Chair of the Koala Advisory Committee. https://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0010/94519/161202-NSWCSE-koala-report.pdf (accessed 30 January 2024).

O'Malley, N. 2023a. "Before Creation of Koala National Park, Loggers Target Key Habitat." *Sydney Morning Herald*, 23 May. https://www.smh.com.au/environment/conservation/before-creation-of-koala-national-park-loggers-target-key-habitat-20230520-p5d9w0.html.

O'Malley, N. 2023b. "'Minds Were Blown': These Scientists Were Stunned at What's Happening on the NSW North Coast." *Sydney Morning Herald*, 2 September. https://www.smh.com.au/environment/conservation/minds-were-blown-these-scientists-were-stunned-at-what-s-happening-on-the-nsw-north-coast-20230831-p5e11w.html.

Parmeter, N. 2023. "NSW Labor Promises to Create Great Koala National Park on Mid North Coast if Elected." *ABC Coffs Coast*, 19 January. https://www.abc.net.au/news/2023-01-19/labor-great-koala-park-national-plan-grafton-to-kempsey/101871048.

Penn, A. M., W. B. Sherwin, G. Gordon, D. Lunney, A. Melzer, and R. C. Lacy. 2000. "Demographic Forecasting in Koala Conservation." *Conservation Biology* 14 (3): 629–638.

Perkins, M., and M. Foley. 2020. "Loggers Return to Native Forests Burnt in Summer Bushfires." *The Age*, 30 April. https://www.theage.com.au/national/loggers-return-to-native-forests-burnt-in-summer-bushfires-20200430-p54ok1.html.

Phillips, B. 1990. *Koalas: The Little Australians We'd All Hate to Lose*. Canberra: Australian Government Publication Service.

Phillips, S., C. Flanagan, T. Wilson, and C. Phillips. 2014. "Management of Koalas in Forestry Plantations Operational Code of Practice." International Fund for Animal Welfare/National Koala Alliance. https://www.biolink.com.au/sites/www.biolink.com.au/files/project-files/Plantation_CoP%20.pdf (accessed 30 January 2024).

Pugh, D. 2022. "The Plantation Debacle." North East Forest Alliance. https://assets.nationbuilder.com/ncec/pages/111/attachments/original/1661071432/The_plantation_debacle.pdf?1661071432 (accessed 30 January 2024).

Reckless, H. J., M. Murray, and M. S. Crowther. 2018. "A Review of Climatic Change as a Determinant of the Viability of Koala Populations." *Wildlife Research* 44 (7): 458–470.

Reed, J., J. van Vianen, J. Barlow, and T. Sunderland. 2017. "Have Integrated Landscape Approaches Reconciled Societal and Environmental Issues in the Tropics?" *Land Use Policy* 63: 481–492.

Rennison, B., and M. R. Fisher. 2017. *Framework for the Spatial Prioritisation of Koala Conservation Actions in NSW*. Saving our Species Iconic Koala Project Report to the NSW Office of Environment and Heritage.

Rhodes, J. R., H. Beyer, H. Preece, and C. McAlpine. 2015. "South East Queensland Koala Population Modelling Study." Department of Environment and Heritage Protection, University of Queensland. https://cabinet.qld.gov.au/documents/2016/Apr/Koala/Attachments/Study.PDF (accessed 30 January 2024).

Rhodes, J., A. Melzer, A. Mucci, and A. Hood. 2017a. "Koala Expert Panel Interim Report." https://environment.des.qld.gov.au/__data/assets/pdf_file/0025/88621/koala-expert-panel-interim-report.pdf (accessed 30 January 2024).

Rhodes, J. R., A. Hood, A. Melzer, and A. Mucci. 2017b. *Queensland Koala Expert Panel: A New Direction for the Conservation of Koalas in Queensland*. Queensland Koala Expert Panel.

Rhodes, J. R., C. F. Ng, D. L. de Villiers, H. J. Preece, C. A. McAlpine, and H. P. Possingham. 2011. "Using Integrated Population Modelling to Quantify the Implications of Multiple Threatening Processes for a Rapidly Declining Population." *Biological Conservation* 144 (3): 1081–1088.

Roa, K. 2012. "Pathways to Sustainable Development." In *World Heritage: Benefits beyond Borders*, ed. A. Galla, 325–332. Cambridge: Cambridge University Press.

Robinson, A. C., R. Spark, and C. Halstead. 1989. "The Distribution and Management of the Koala in South Australia." *South Australian Naturalist* 64 (1): 4–24.

Roe, I. 2023a. "Concerns Logging Operations Risking Koala Lives as NSW Government Urged to Fast-Track Reserve." *ABC News*, 28 June. https://www.abc.net.au/news/2023-06-28/calls-for-great-koala-national-park-to-save-koala-lives/102536232.

Roe, I. 2023b. "Missing Rescue Data Casts Doubt on Effectiveness of Policies to Protect Wildlife in NSW." *ABC News*, 4 September. https://www.abc.net.au/news/2023-09-04/nsw-bionet-missing-four-years-wildlife-recue-data-/102805330.

Rogers, B. M., B. Mackey, T. A. Shestakova, H. Keith, V. Young, C. F. Kormos, et al. 2022. "Using Ecosystem Integrity to Maximize Climate Mitigation and Minimize Risk in International Forest Policy." *Frontiers in Forests and Global Change* 5: 929281.

Rose, T., and L. Cox. 2022. "'Koala Wars': NSW Government Scraps Contentious Native Forestry Bill to Head off Revolt." *Guardian*, 14 November. https://www.theguardian.com/australia-news/2022/nov/14/koala-wars-nsw-government-scraps-contentious-native-forestry-bill-to-head-off-revolt.

Rus, A. I., C. McArthur, V. S. Mella, and M. S. Crowther. 2021. "Habitat Fragmentation Affects Movement and Space Use of a Specialist Folivore, the Koala." *Animal Conservation* 24 (1): 26–37.

Santamaria, F., and R. Schlagloth. 2016. "The Effect of Chlamydia on Translocated Chlamydia-Naïve Koalas: A Case Study." *Australian Zoologist* 38 (2): 192–202.

Santamaria, F., R. Schlagloth, L. Valenza, R. Palme, D. de Villiers, and J. Henning. 2023. "The Effect of Disease and Injury on Faecal Cortisol Metabolites, as an Indicator of Stress in Wild Hospitalised Koalas, Endangered Australian Marsupials." *Veterinary Sciences* 10 (1): 65.

Sayer, J., T. Sunderland, J. Ghazoul, J.-L. Pfund, D. Sheil, E. Meijaard et al. 2013. "Ten Principles for a Landscape Approach to Reconciling Agriculture, Conservation, and Other Competing Land Uses." *Proceedings of the National Academy of Sciences* 110 (21): 8349–8356.

Schlagloth, R., E. Morgan, T. Cadman, F. Santamaria, G. McGinnis, H. Thomson, et al. 2022. "Applying Landscape-Level Principles to Koala Management in Australia: a Comparative Analysis." *Journal of Environmental Planning and Management* 67 (3): 542–563.

Schlagloth, R., F. Santamaria, B. Golding, and H. Thomson. 2018. "Why is It Important to Use Flagship Species in Community Education? The Koala as a Case Study." *Animal Studies Journal* 7 (1): 127–148.

Scotts, D. 2013. "Conserving Koala Populations of the New South Wales Upper Mid-North Coast: Preliminary Mapping of Populations as a Basis for Further Survey, Research and Planning." Report for the North Coast Environment Council, Bellingen Environment Centre, Clarence Environment Centre, Nambucca Valley Conservation Association and NSW National Parks Association. https://npansw.org.au/wp-content/uploads/2023/02/Koala_3-metapops-report_Jan20131.doc (accessed 30 January 2024).

Seabrook, L., C. McAlpine, G. Baxter, J. Rhodes, A. Bradley, and D. Lunney. 2011. "Drought-Driven Change in Wildlife Distribution and Numbers: A Case Study of Koalas in South West Queensland." *Wildlife Research* 38 (6): 509–524.

Sharpe, P. 2023. "A Letter to Friends Groups." 18 December. Ministerial record MD23/7102.

Sherwin, W. B., P. Timms, J. Wilcken, and B. Houlden. 2000. "Analysis and Conservation Implications of Koala Genetics." *Conservation Biology* 14 (3): 639–649.

Smith, A. P. 2004. "Koala Conservation and Habitat Requirements in a Timber Production Forest in North-East New South Wales." *Conservation of Australia's Forest Fauna* 2 (1): 591–611.

Strahan, R. 1995. *The Mammals of Australia*. Chatswood: Australian Museum/Reed.

Stratford, E., N. Mazur, D. Lunney, and D. Bennett. 2000. "Managing the Koala Problem: Interdisciplinary Perspectives." *Conservation Biology* 14 (3): 610–618.

Tarlinton, R., J. Meers, J. Hanger, and P. Young. 2005. "Real-Time Reverse Transcriptase PCR for the Endogenous Koala Retrovirus Reveals an Association between Plasma Viral Load and Neoplastic Disease in Koalas." *Journal of General Virology* 86 (3): 783–787.

Terraube, J., R. Gardiner, K. Hohwieler, C. Frère, and R. Cristescu. 2023. "Protected Area Coverage Has a Positive Effect on Koala Occurrence in Eastern Australia." *Biodiversity and Conservation* 32 (7): 2495–2511.

The Greens NSW. 2022. "Politics Wins over Koalas: Great Koala National Park Bill Defeated." 8 June. https://greens.org.au/nsw/news/media-release/politics-wins-over-koalas-great-koala-national-park-bill-defeated.

University of Newcastle. 2021. "Report: Australia's First National Park for Koalas Projected to Generate $1.2 Billion in Economic Output and 9,800+ Jobs." *University News*, 2 February. https://www.newcastle.edu.au/newsroom/featured/report-australias-first-national-park-for-koalas-projected-to-generate-$1.2-billion-in-economic-output-and-9,800-jobs.

Van Eeden, L. M., D. Nimmo, M. Mahony, K. Herman, G. Ehmke, J. Driessen, et al. 2020. "Impacts of the Unprecedented 2019–2020 Bushfires on Australian Animals." Ultimo: WWF Australia.

Van der Maesen, L., and T. Cadman. 2015. "Sustainable Forest Management: The Role of Government Agencies, NGOs, and Local Communities in Western Australia." *International Journal of Social Quality* 5 (2): 46–61.

Van der Maesen, L. J. G. 2018. "Addressing Marine Plastic Pollution: The Plastic Soup Foundation and the Four-Dimensional Application of the Social Quality Approach." *International Journal of Social Quality* 8 (2): 47–77.

Vargas, A., A. Lo, M. Howes, and N. Rohde. 2017. "The Problem of Inclusion in Deliberative Environmental Valuation." *Environmental Values* 26 (2): 157–176.

Vivian, A. 2021. "Cate Faehrmann Supports Pine Creek Forest Bridge." *News of the Area*, 4 November. https://www.newsofthearea.com.au/cate-faehrmann-supports-pine-creek-forest-bridge.

Vivian, A. 2022a. "Differing Definitions of Plantations Muddy Timber Classifications." *News of the Area*, 26 August. https://www.newsofthearea.com.au/differing-definitions-of-plantations-muddy-timber-classifications.

Vivian, A. 2022b. "'Just Do It': Campaign for Great Koala National Park Gathers Pace." *News of the Area*, 3 November. https://www.newsofthearea.com.au/just-do-it-campaign-for-great-koala-national-park-gathers-pace.

Vivian, A. 2023. "Scientists Urge Government to Suspend Logging in Great Koala National Park." *News of the Area*, 27 August. https://www.newsofthearea.com.au/scientists-urge-government-to-suspend-logging-in-great-koala-national-park.

Waugh, C., J. Hanger, P. Timms, and A. Polkinghorne. 2016. "Koala Translocations and Chlamydia: Managing Risk in the Effort to Conserve Native Species." *Biological Conservation* 197: 247–253.

Williams, A. 2023. "Forest Future Still Uncertain." *Bellingen Shire News* 54, 20 December. https://bellingenshirenews.com/2023/12/20/forest-future-still-uncertain/.

Woodward, A. 2023. "Local Labor Commends Kalang Headwaters Conservation Proposal." *Bellingen Shire Labor*, 5 February. https://bellingenshirelabor.net/2023/02/05/local-labor-commends-kalang-headwaters-conservation-proposal/.

Young, I. M. 2000. *Inclusion and democracy*. Oxford: Oxford University Press.

Youngentob, K. N., K. F. Marsh, and J. Skewes. 2021a. "A Review of Koala Habitat Assessment Criteria and Methods." Report prepared for the Department of Agriculture, Water and the Environment, Canberra. https://www.agriculture.gov.au/sites/default/files/documents/review-koala-habitat-assessment-criteria-and-methods-2021.pdf (accessed 30 January 2024).

Youngentob, K. N., D. B. Lindenmayer, K. J. Marsh, A. K. Krockenberger, and W. J. Foley. 2021b. "Food Intake: An Overlooked Driver of Climate Change Casualties?" *Trends in Ecology and Evolution* 36 (8): 676–678.

Zurn, M., and M. Koenig-Archibugi. 2006. "Conclusion II: Modes and Dynamics of Global Governance." In *New Modes of Governance in the International System: Exploring Publicness, Delegation and Inclusion*, ed. M. Koenig-Archibugi and M. Zurn, 236–254. Basingstoke: Palgrave Macmillan.