

**Submission
No 163**

INQUIRY INTO KOALA POPULATIONS AND HABITAT IN NEW SOUTH WALES

Organisation: National Parks Association of NSW

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NPA submission to NSW Inquiry into Koala Populations and Habitats

About us

The National Parks Association of NSW (NPA) was formed in 1957 and six decades later has 15 branches and over 20,000 members and supporters. Our shared goal is to protect nature through community action. NPA believes that caring springs from personal connections with nature, and we deliver more than a thousand bushwalks, community events, bio-blitz surveys and bush regeneration projects each year. We are vigorous advocates for nature, contributing to park management planning, the assessment of development proposals and conducting conservation campaigns across NSW. NPA's strengths include our regional reach, deep local knowledge, evidence-based approach and relentless pursuit of a world-class reserve system for NSW.

Overview

NPA welcomes the Inquiry and appreciates the opportunity to make this submission.

NPA considers that the protection and management of koala habitat through the reservation of land under the *National Parks and Wildlife Act* is the best way to protect koala populations, because it offers the best long-term mechanism to protect critical koala habitat and increase its quality. NPA has worked for several years to identify reserve priorities for koalas on the north coast of NSW and in south-west Sydney (Campbelltown to Appin), focusing our investigations on public land. Our submission focusses on reservations and includes maps of the proposed reserves.

NPA has also contributed to the joint Stand Up for Nature submission.

We would welcome the opportunity to speak to these issues at an Inquiry hearing.

Submission points

The status of koala populations and koala habitat in NSW

Multiple lines of evidence point to koala populations in NSW being in decline (Lunney & Leary 1988; McAlpine et al. 2015; Adams-Hosking et al. 2016). NPA's many discussions with local koala experts and carers on the NSW north coast corroborate these observations and suggest that koalas are disappearing from many areas. Recent extinctions of koalas have taken place in areas such as Pittwater and Iluka (Lunney et al. 2002) for example, while other populations, such as those in the Bega district where 60- 80 animals are believed to persist, act as a sobering warning against complacency. Bega once had a large enough population to support a koala fur trade (Lunney & Leary 1988).

The key concern for NPA is the poor level of overlap between koala habitat and the existing reserve network, and it is this issue that our reserve proposals seek to address. Of the 77,517 hectares (ha) of 'koala hubs' (areas inhabited over time by koalas and therefore of particular importance) identified by the Office of Environment and Heritage in north-east NSW, only 14% are located in national parks. In contrast, 20% (15,552ha) are found in state forests and 66% (51,463ha) on private land. WWF's Koala Habitat Conservation Plan identifies that, across the entire state of NSW, 67% of koala records are from private land, 14% national parks, 8% state forests and 11% crown land. These statistics reflect the historic concentration of the more fertile soils in forestry and agricultural lands.

The National Park estate is heavily biased towards steep, infertile lands, particularly in northern NSW, where threats to koalas are greatest (Pressey et al. 1996; Pressey et al. 2002). Koalas prefer the more fertile forests of the coastal lowlands (Lunney et al. 2016), selectively feeding on trees with greater nitrogen content in the leaves (Moore & Foley 2005). Areas containing such high quality koala habitats need to be incorporated into the reserve network if koala declines are to be reversed.

The key threat to koalas is accelerating habitat loss from land clearing, logging and urban development. Many of the woodlands and forests upon which koalas depend have been identified as either 'crisis ecoregions' or 'very high risk ecoregions' (Watson et al. 2016). As koala habitat is fragmented and lost, animals must spend more time on the ground where they are more vulnerable to dog attack and vehicle strike. Habitat loss also drives stress-related diseases such as chlamydia. All of these issues must be tackled simultaneously to reverse declines (Rhodes et al. 2011; McAlpine et al. 2015), but a failure to address habitat loss will inevitably see continued declines.

The impacts on koalas and koala habitat from the Coastal Integrated Forestry Operations Approvals and Regional Forest Agreements

The new Coastal Integrated Forestry Operations Approval (CIFOA) is a retrograde step for koala protection. The underlying problem is the government's 'twin commitment' of no reduction in wood supply and no erosion of environmental values, which has been taken to prevent action to remove logging from koala habitat.

The government's 'twin commitment' policy effectively precludes the protection of vital koala habitat on public land because of the overlap between those areas of forests that are important for koalas and the Forest Management Zone 4 that provides the majority of timber for the logging industry (see Figures). The forests that are most important for koalas are also those favoured by the logging industry.

The NPA's reserve proposals as described below starkly demonstrate the inconsistency between the twin commitment and the protection of habitat essential to the long-term survival of koalas in NSW. This situation contributes to NPA's view that all logging in public native forests should end, with industry transitioning to plantation timbers with limited extraction of high value native timbers on private land. The choice is stark, koalas or the continued logging of public forests. The twin commitment is a disingenuous policy that risks the extinction of koalas in NSW.

NPA recommendation 1: the NSW Government's 'twin commitment' policy be replaced by a commitment to retain and protect koala habitat throughout public native forests.

Identification of key areas of koala habitat on private and public land that should be protected

Protecting existing habitat is cheaper and more efficient than habitat restoration. If nothing is done to protect and reconnect koala habitat, population declines will continue unabated and local extinctions are inevitable. In order to avoid this eventuality, NPA has identified a series of proposed reserves to protect critical areas of koala habitat (Love & Sweeney 2015, NPA 2017). Each proposal is described in detail below.

The largest of the reserve proposals is on the north coast of NSW, which has been identified as a future climate refuge (Adams-Hosking et al. 2012; Adams-Hosking et al. 2014; Maxwell et al. 2019). Koala habitat in this bioregion will be extremely important for the future survival of koalas and other forest dependant species. All of our north coast reserve proposals are entirely on public land. Their

effectiveness could be greatly enhanced by adjacent private landholders entering into conservation agreements with the NSW Biodiversity Conservation Trust.

The North Coast reserve proposals were derived using community data and expert opinion from within the north coast region and focussed on describing and mapping the koala populations on the North Coast and hinterlands and areas of state forest that contain koala habitat and would be best included within the reserve system. The proposals are strongly supported by the 'koala hubs' data presented in WWF's Koala Habitat Conservation Plan (Paull et al. 2019), with a high level of correspondence between WWF's hubs and priority areas, data and analysis (Koala Hubs and Areas of Regional Koala Significance, ARKS) done by the NSW Office of Environment and Heritage (OEH), and by predictive habitat mapping from the Department of Primary Industries.

Smaller scale, but important reserve proposals include publicly acquired lands along the Georges River, comprising approximately 4,000 ha of regional open space in Campbelltown and Wollondilly LGAs and the Murrumbidgee Flora reserves in southern NSW. The Georges River proposal includes State owned land managed by the Commonwealth as a buffer for the Holsworthy range.

NPA has been collaborating with researchers at Western Sydney University over more than 3 decades, monitoring the numbers and health of koalas in an area close to Sydney. The resultant dataset means that the movements and habitat use of this population is better understood than almost any other, and the steps needed to protect it are clear.

The community-derived reserve proposals have strengths beyond the OEH & WWF hubs data. Hubs are based primarily on koala records analysed for a measure of persistence. Therefore, by their nature, hubs are biased towards areas of greater survey effort and/or habitation and away from remote hinterland areas and private land (the latter is typically under-surveyed). Using expert ecologist knowledge to analyse the landscape configuration, while incorporating knowledge of koala occurrence, distributions and population trends from local koala carers and conservationists, adds another layer to records-based analysis. For this reason our reserve proposals include areas that were not identified as hubs.

The fact that the hubs and ARKS data in most cases, including that of the GKNP, strongly corroborates the community reserve proposals provides confidence that the reserves are well designed for koala protection. However, we acknowledge that contemporary surveys of some areas would be desirable in order to confirm the utility of the areas to koalas.

The hubs data will likely overlook areas of occupied habitat that need protection to achieve an adequate koala reserve system. There is therefore an urgent need to undertake systematic regional surveys to identify all areas of resident populations to target for reservation if koalas are to achieve the protection required to halt their decline towards extinction. The hubs are those areas that the available data identify that we need to urgently reserve to protect resident populations. It will be necessary to protect and restore adjacent habitat to first stabilize, then grow, these core populations.

NPA recommendation 2: That the NSW Government protects the areas of koala habitat described below through reservation under the *National Parks and Wildlife Act*.

Reserve proposal 1- Upper Georges River Reserve

The Upper Georges River Reserve proposal comprises the lands acquired under the Sydney Region Development Fund and some small Crown Reserves stretching from Appin to Glenfield along the Upper Georges River (Figure 1). The area (approximately 4,000 Ha) contains a significant population

of koalas, and endangered ecological communities of Cumberland vegetation. This proposal is not influenced by the 'twin commitment'.

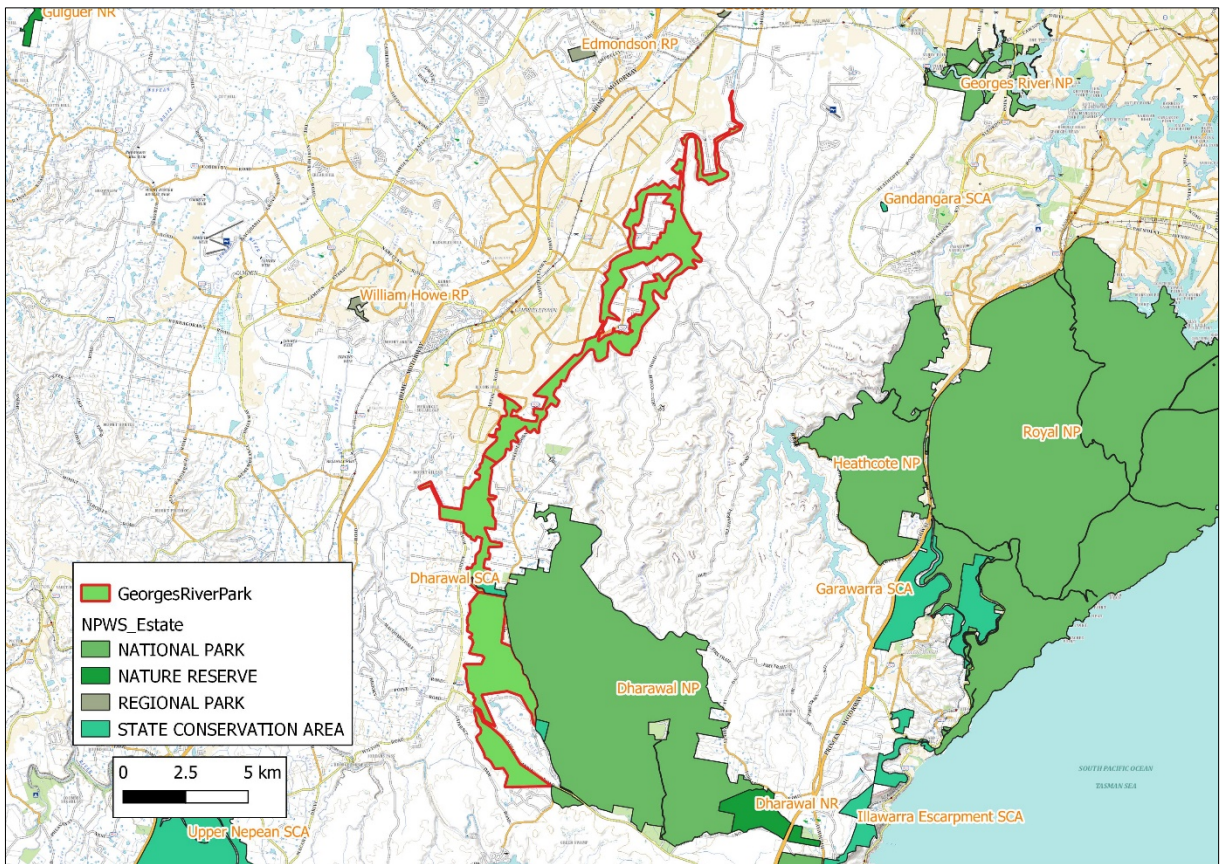


Figure 1: Approximate boundaries of NPA's proposed Upper Georges River reserve (red outlined polygons) following the river from Appin in the south to Campbelltown in the north. Note, this proposal was made many years ago (1988) and work is ongoing to accurately delimit the park boundaries to reflect the current situation of intervening development.

We stress the importance of maintaining connectivity between the Georges and Nepean Rivers for the persistence of koalas (and other wildlife) in the face of rapid urban growth. To this end NPA is alarmed by the hasty approval of the Lendlease Gilead proposal as this parcel of land provides vital connectivity between the two rivers. Options for retaining connectivity through Gilead have been presented to the NSW government.

Appin Road, adjacent to this development, is a major killing zone for koalas dispersing westwards from the Georges River to the Nepean River. Government merely proposes exclusion fencing along the eastern side of the road to prevent koala movement to the west, which is a cheaper option than providing proper under or overpasses and maintaining a vegetated corridor through development lands, but it will not be as effective. In our view, increased expenditure is warranted in order to maximise the chances of persistence of Sydney's last healthy koala population.

A further key threat to koalas in this area is the proposed Georges River Parkway. It is clear from the records collected over many years that the Parkway will bisect the koala population and disrupt movement corridors (Figure 2). It is therefore likely that, unless built in such a way as to retain connectivity the Parkway will condemn the population to dwindle slowly towards extinction.

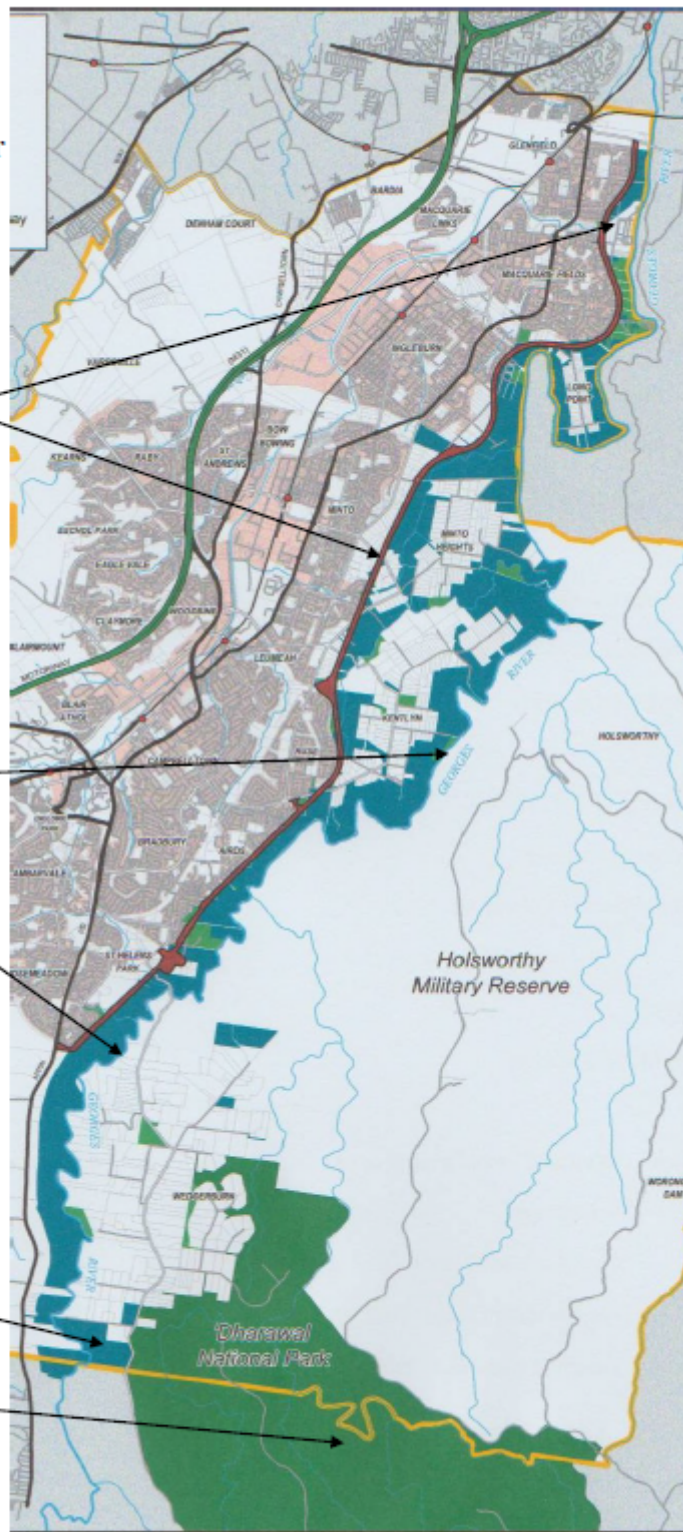
**Map of Proposed Upper
Georges National Park
shown in blue**

**Proposed Georges
River Parkway
Road**

**Proposed Upper
Georges River
National Park
Identified in Blue**

**Dharawal State
Conservation
Area**

**Dharawal National
Park**



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Figure 2: Map showing the northern portion of the Upper Georges River Reserve proposal (blue polygons) and connectivity to surrounding land tenures, and the proposed Georges River Parkway (red polygons). Yellow polygon denotes Campbelltown Local Government boundary.

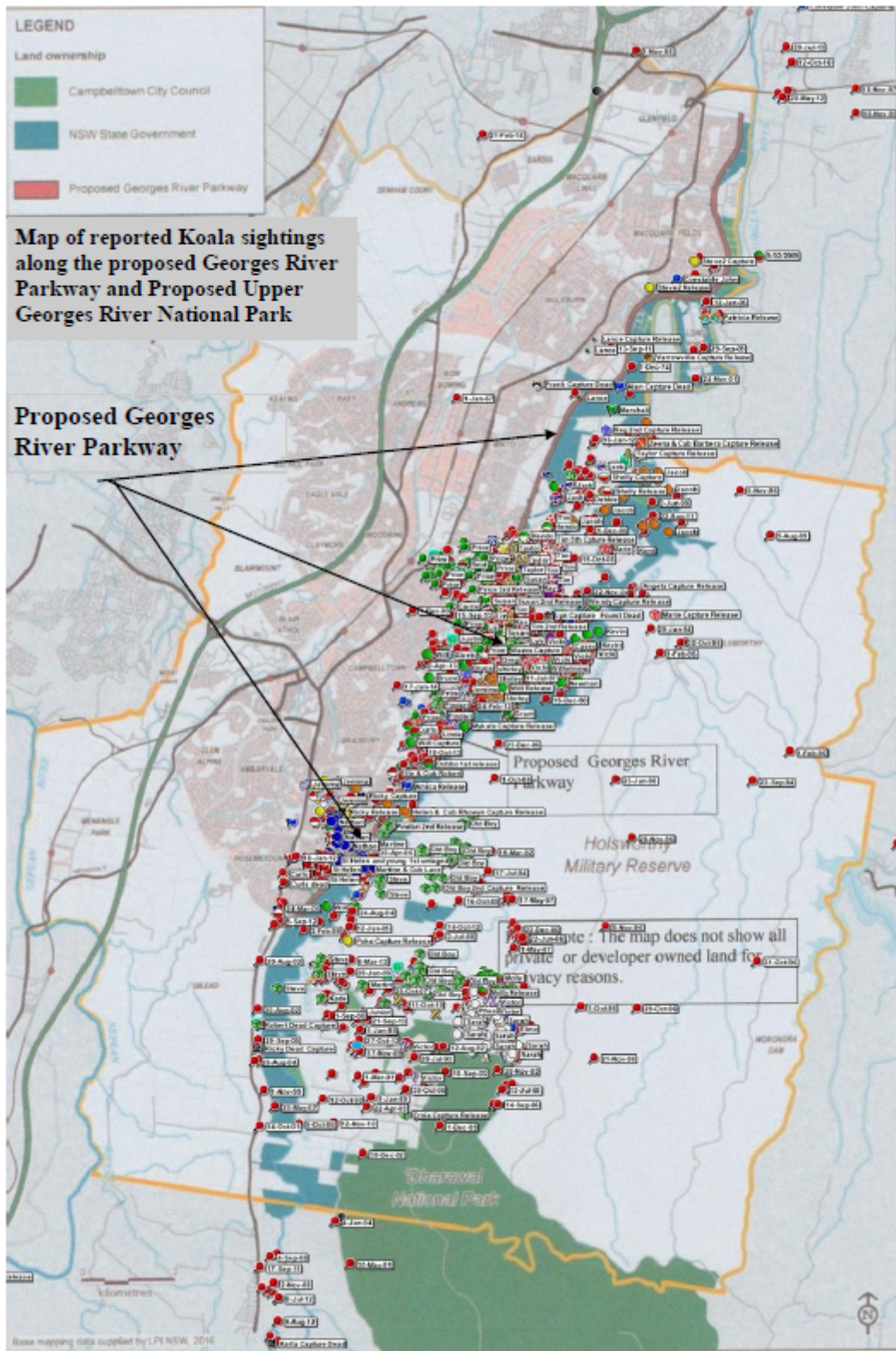


Figure 3: Map of the proposed Upper Georges River National Park (blue polygons) showing the locations of koala records (coloured dots and associated text boxes) and the proposed Georges River Parkway. The Parkway is a key threat to the persistence of koalas.

The Campbelltown Koala population is now considered to be the last large, healthy and expanding population left in New South Wales, and as such should be protected and allowed to expand into the

Nepean system. The population is listed as Vulnerable in New South Wales, as the koala population is considered to be “a key source population either for breeding or dispersal, and a population necessary for maintaining genetic diversity”. Three types of endangered communities occur on the site being Cumberland Plain Woodland, Shale Sandstone Transition Forest, and River-flat Eucalypt Forest all of which are fast disappearing within the Sydney Basin, despite their endangered listings. The area provides opportunities for both active and passive recreation for the growing South-west Growth Areas.

Reserve proposal 2- The Great Koala National Park

Conservation groups have responded to community reports of dramatic declines in koala populations on the NSW North Coast by conducting a number of koala conservation assessments. Initial assessments in 2012 were undertaken in five LGAs on the upper mid-North Coast areas, northern Kempsey, Nambucca, Bellingen, Coffs Harbour, Clarence Valley and Richmond Valley.

These assessments used koala habitat mapping, combined with collated koala locality records and local knowledge of koala ecology and key habitat, to derive a number of mapped outputs relevant to koala conservation assessment and planning in the region, including:

- Likely koala dispersal barriers;
- The identification of seven likely koala regional populations;
- Twenty-five likely koala subpopulations as focus areas for further targeted surveys, monitoring and research; and
- Three likely metapopulations, groupings of subpopulations that periodically exchange individuals.

1. The Coffs Harbour—Guy Fawkes metapopulation

This is centred on the Coffs Harbour, northern Bellingen and south-western Clarence Valley LGAs, and extends from the coastal plains at Coffs Harbour/Bongil Bongil National Park west through hinterland and escarpment forests to Guy Fawkes River National Park. This metapopulation is considered to be of national significance as a koala core area.

This same forest gradient has also been identified as significant in other conservation assessment and planning programs. It is clear that management programs need to be explored and promoted to ensure the long-term persistence of this critical forest area, where the Great Escarpment approaches the coast.

2. The Clarence—Richmond metapopulation

This is centred on the central and northern Clarence Valley LGA and extends further north to the Richmond River valley, encompassing the Richmond Valley LGA, and;

3. The Bellinger—Nambucca—Macleay metapopulation

This extends south and west from the southern Bellingen LGA to encompass the Nambucca LGA and the northern part of the Kempsey LGA to the Macleay River valley. This koala metapopulation is also considered to be nationally significant.

The GKNP proposal included all public land with the Coffs Harbour - Guy Fawkes metapopulation and the Bellinger - Nambucca - Macleay metapopulation boundaries. It would add 175,000 ha of public state forests added to existing protected areas to form a continuous 315,000 ha reserve of public land (Figure 4). The proposed GKNP adjoins World Heritage-listed reserves, including New England and Dorrigo national parks and the Guy Fawkes National Park, to form a proposed conservation complex of half a million hectares extending from the tablelands to the Coast.

The GKNP contains 56% of all koala hubs in state forests on the north coast of NSW (Figure 6). It is the most important area of public land in NSW for koala conservation.

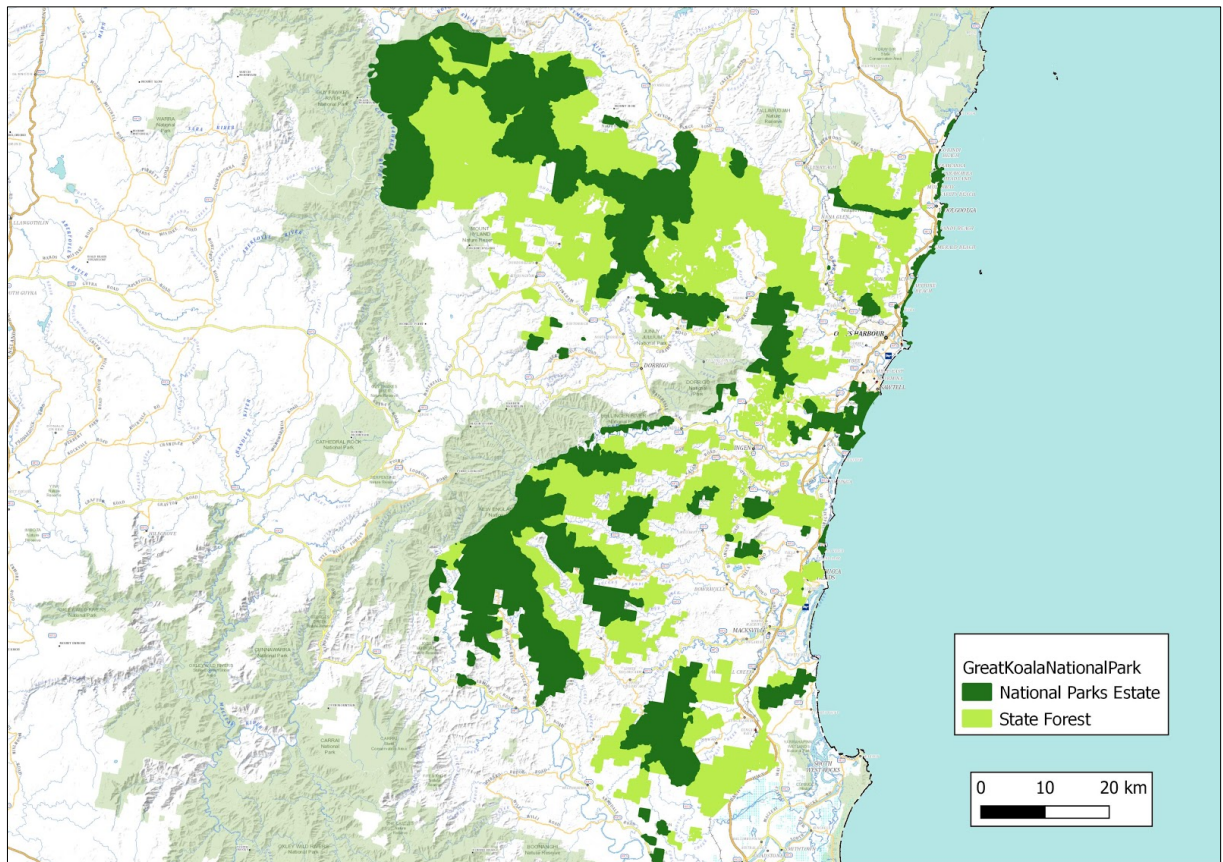


Figure 4: Map of the GKNP proposal indicating state forests (pale green) and existing national parks (dark green). The park stretches from Woolgoolga in the north to South West Rocks in the south.

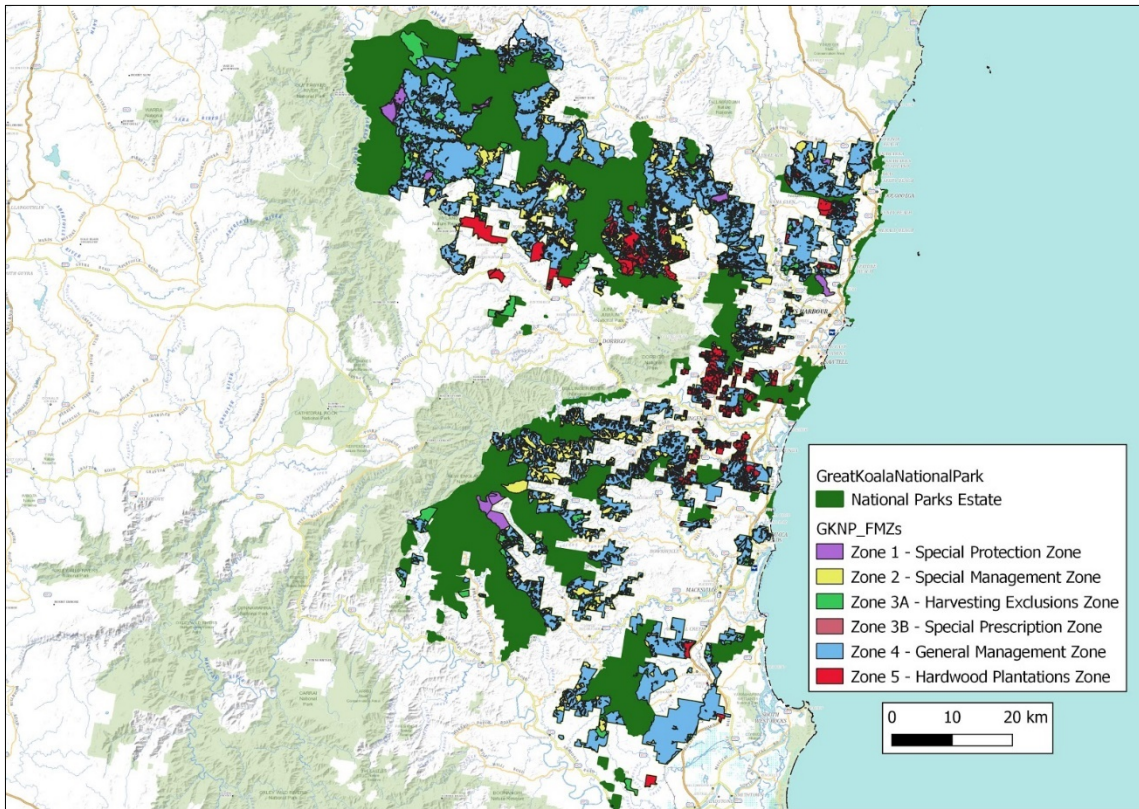


Figure 5: Map of the GKNP showing the different Forest Management Zones. The proposal does not seek to reserve plantations (red polygons). Most notable is the degree of blue shading that denotes Forest Management Zone 4 - from where most timber is sourced.

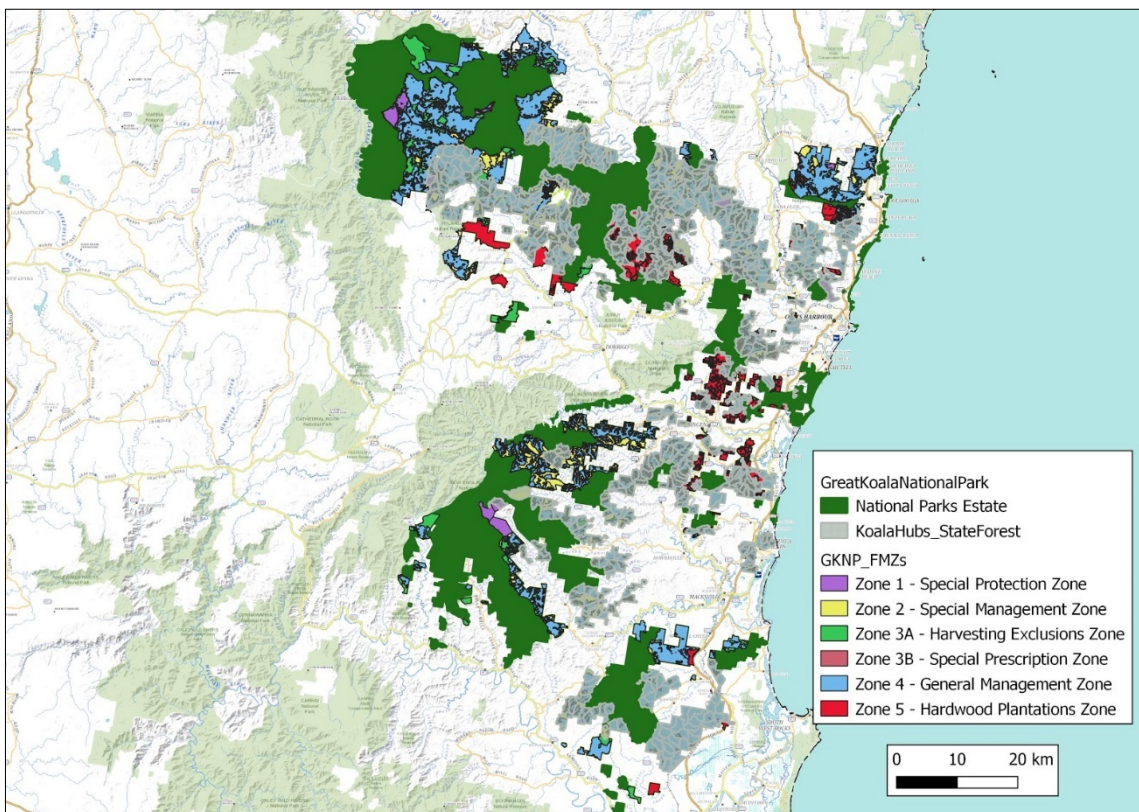


Figure 6: WWF's koala hubs (grey shading) overlaid on the GKNP proposal and the Forest Management Zones (FMZs). It is notable that a) WWF's koala hubs overlap strongly with the GKNP proposal and b) koala hubs overlap strongly with FMZ 4, where most timber is extracted from.

Reserve proposal 3- Port Macquarie reservations

The proposed reserve additions in the Port Macquarie / Camden Haven are located between Port Macquarie and Camden Haven, predominantly east of the Pacific Highway (Figure 7). It includes 3,299ha of state forests that would both protect koalas and improve connectivity between the existing Lake Innes Nature Reserve, Queens Lake Nature Reserve and Queens Lake State Conservation Area. This is a nationally important and historically significant regional population of koalas, estimated at the time of publication of NPA's 'blueprint' as supporting approximately 2,000 individuals (Phillips et al. 2013). All of the state forests identified as important for koalas are contained in the new 'Intensive Harvesting Zone', and regeneration logging has been occurring around Port Macquarie since approximately 2010.

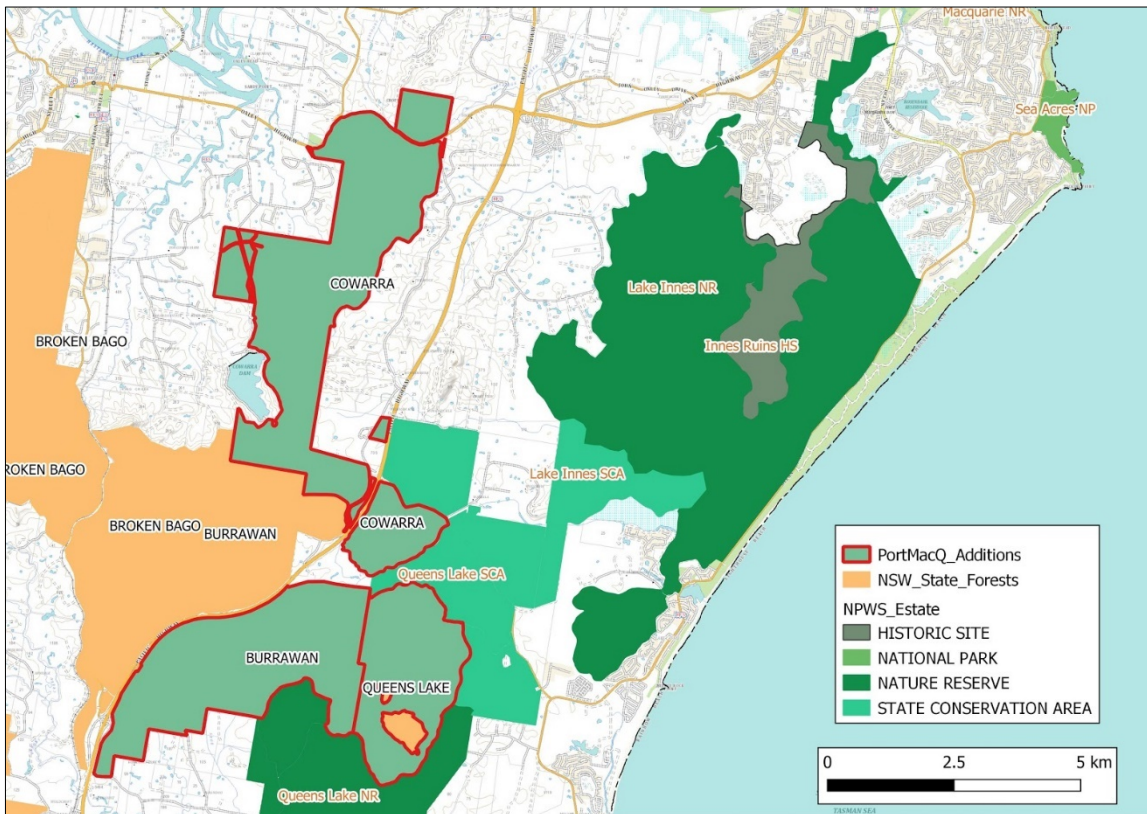


Figure 7: Additions to the protected area network in the Port Macquarie area (green polygons with red outline).

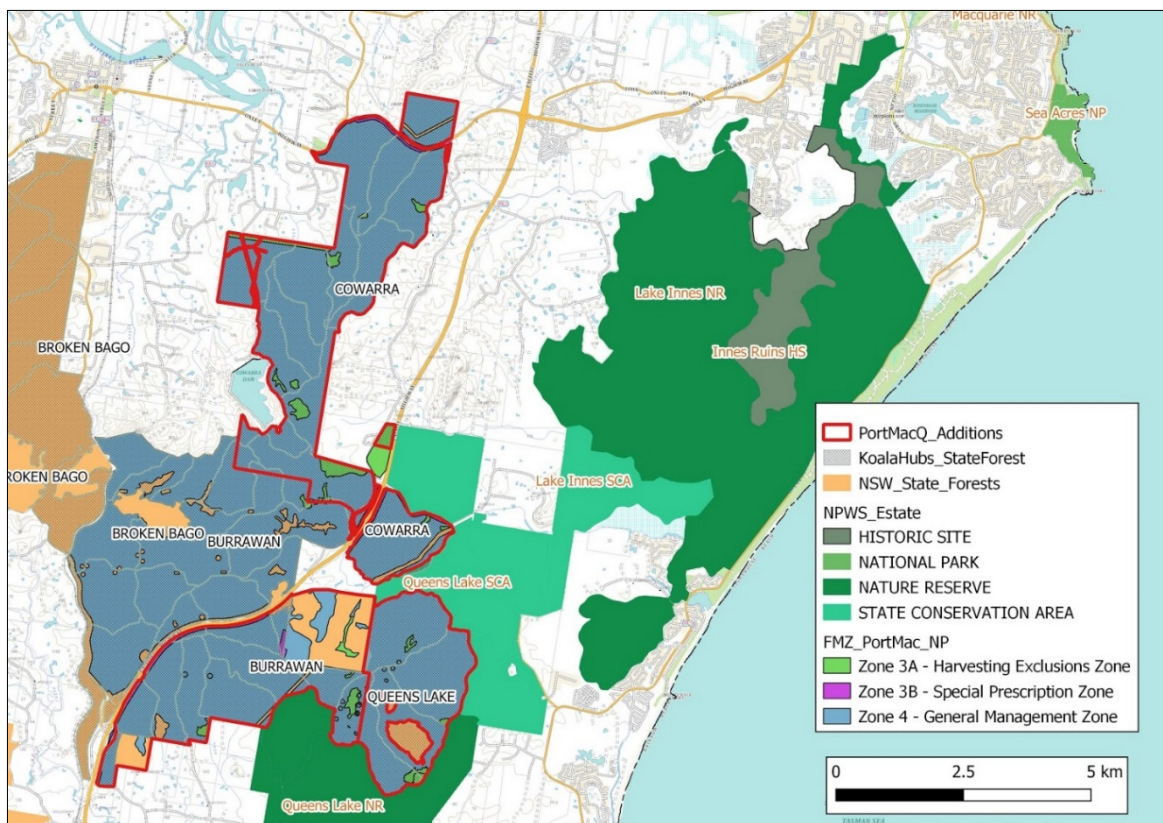


Figure 8: Additions to the protected area network in the Port Macquarie area (red outlined polygons) with the Forest Management Zones (FMZs) and WWF's koala hubs overlaid. Notable is the complete overlap between the proposal and the koala hubs (though more hubs remain outside the proposal to the north west), and between the koala hubs and FMZ 4 (blue polygons). These state forests are in the new 'Intensive Harvesting Zone'.

Reserve proposal 4- Greater Bulga - Comboyne - Taree additions

These additions to the protected areas network—totalling approximately 40,000 hectares—are located on the Mid North Coast, north west of Taree (Figure 9). The proposed additions encompass and would improve connectivity between three koala subpopulations: one in the Yarratt State Forest—Taree—Wingham area, another in the Bulga—Tapin Tops area and a third based in the Lorne—Kendall—Wauchope area. There is evidence of migration between the three subpopulations through the network of nature reserves and retained vegetation on private lands. It is evident that the three koala subpopulations form part of an important regional koala population of high conservation significance and potential long-term viability (Scotts 2013). Much of the area has been identified as high-quality habitat in a survey by the Australian Koala Foundation, and there is significant overlap with the WWF koala hubs (Figure 10).

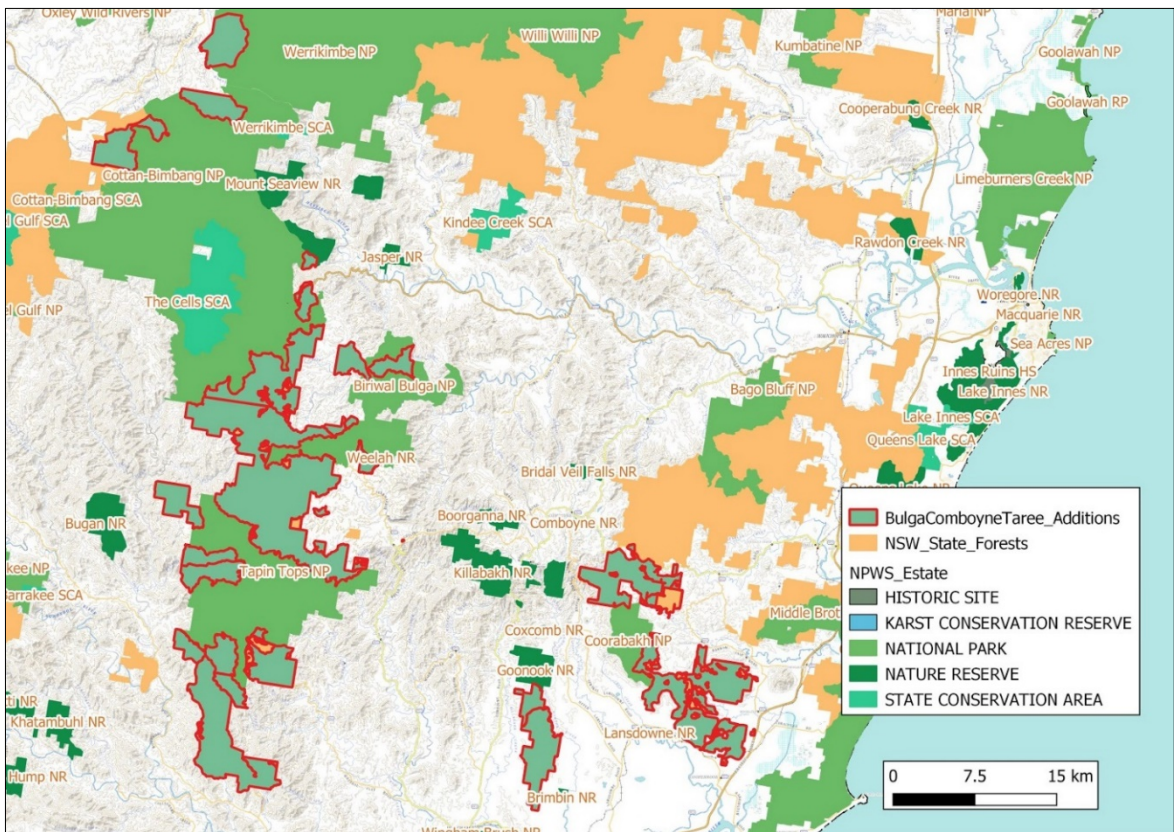


Figure 9: The Greater Bulga - Comboyne - Taree additions (red outlined polygons) to the protected area network.

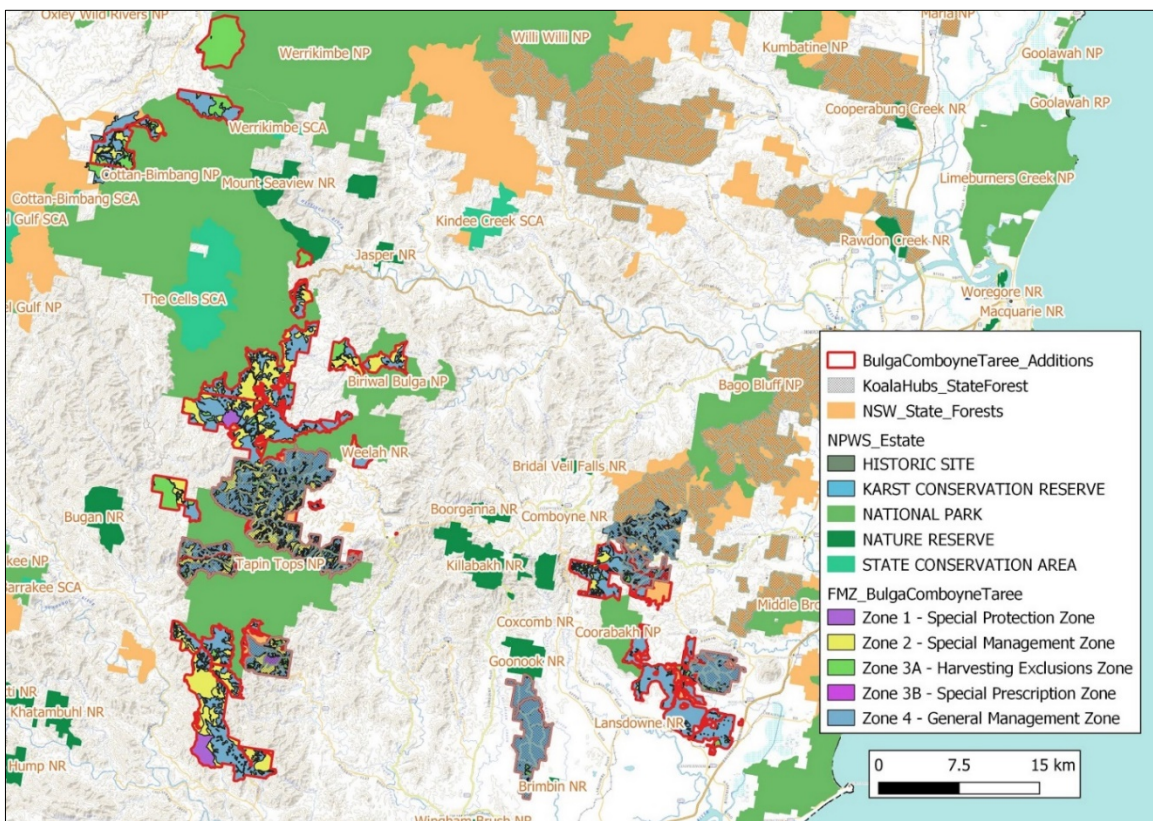


Figure 10: The Greater Bulga - Comboyne - Taree additions (red outlined polygons) with Forest Management Zones (FMZs) and WWF koala hubs (grey shading) overlaid. Approximately 50% of NPAs proposal accords with the hubs analysis, particularly in Bulga state forest

Reserve proposal 5- Bowman additions

Proposed additions north west of Gloucester would add 16,554 ha of Bowman, Barrington and Coneac state forests to the protected area network to protect between 50-200 koalas (Figure 11). There is no overlap between this proposal and WWF's koala hubs.

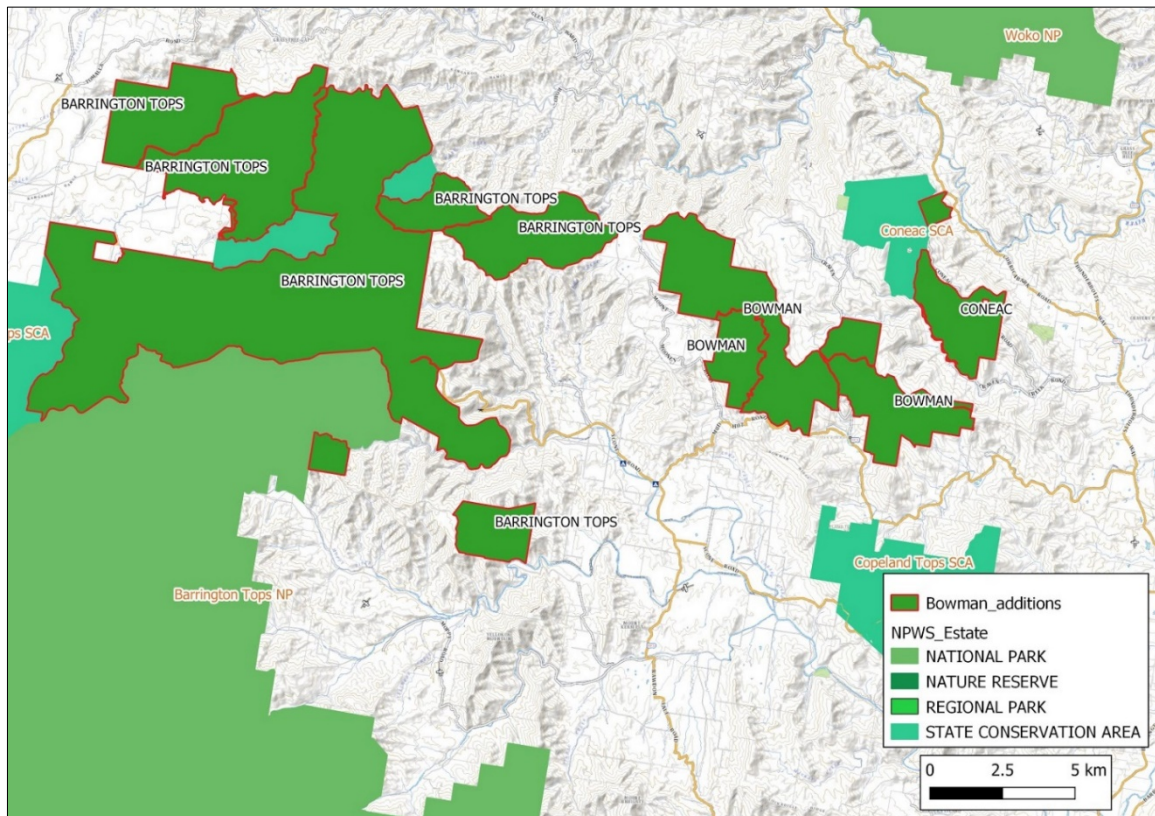


Figure 11: Proposed Bowman additions to the protected area network (red outlined polygons).

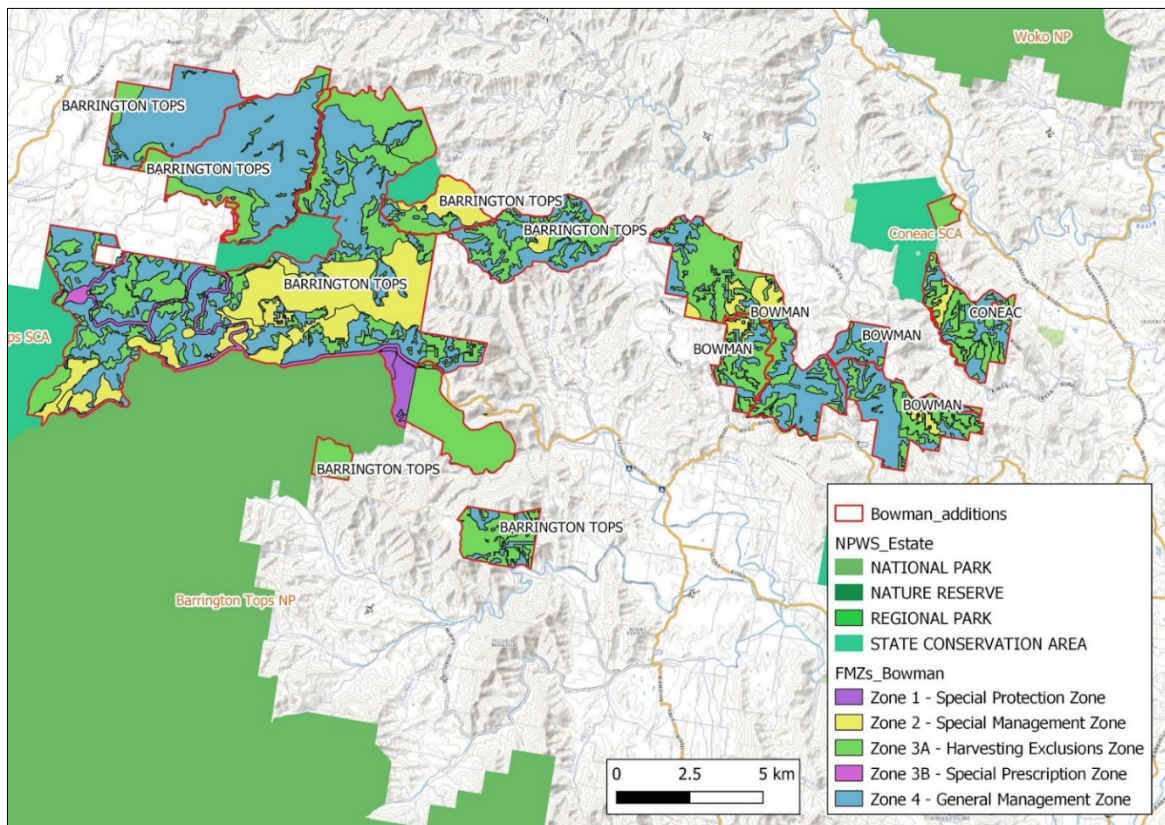


Figure 12: Bowman additions with Forest Management Zones (FMZs) overlaid. Significant areas of this proposal are Zones 1, 2 and 3A (excluded from logging).

Reserve proposal 6- Wang Wauk and Wallingat additions

The proposed Wang Wauk National Park covers 15,436 ha of land in Wang Wauk and Buladelah state forests, located immediately to the north of Buladelah and west of Coolongolook (Figure 13). The proposed national park is in an area of recognised koala habitat (Scotts 2013) with numerous koala records and recognised high use areas extending over both the state forests and adjoining private lands between the Myall and Coolongolook rivers. The proposed National Park appears to be the focal area of an important koala subpopulation. It is separated from the Wallingat koala subpopulation to the east by the Pacific Highway and from what is likely to be a separate koala subpopulation to the west centred on Ghin-Doo-Ee National Park, Myall River state forest and part of the Myall Lakes National Park. In order to protect this subpopulation, we propose the addition of 15,928ha of Myall River and Nerong state forests to Myall Lakes national park. In total our Wang Wauk additions comprise 31,364ha.

The number of koalas in the Wang Wauk subpopulation is estimated to be 200-500 individuals in what appears a regionally significant population.

Koala hubs in Wang Wauk (compartments 136, 138 and 145) were logged between late 2017 and 2018, highlighting that the hubs require immediate protection.

The proposed extension of Wallingat National Park including the addition of 3787ha of Wallingat and Bachelor state forests to the existing 6,557ha Wallingat National Park (Figure 13). It would be complemented by seeking improved protection for environmentally significant habitat connecting Wallingat National Park to Booti Booti and Myall Lakes National Parks. The proposed extension to Wallingat National Park is in an area of recognised koala habitat with numerous koala records,

extending over both the existing Wallingat National Park, The Bachelor and Wang Wauk State Forests and adjoining private lands, particularly to the east towards Elizabeth Beach Sandbar and Bungwahl. The proposed National Park appears to a focal area of an important koala subpopulation. It is separated from the Wang Wauk koala subpopulation to the west by the Pacific Highway. The estimated koala population is 200- 500 individuals in a regionally significant population. There is significant overlap between NPA's proposals and WWF's koala hubs (Figures 14 & 15).

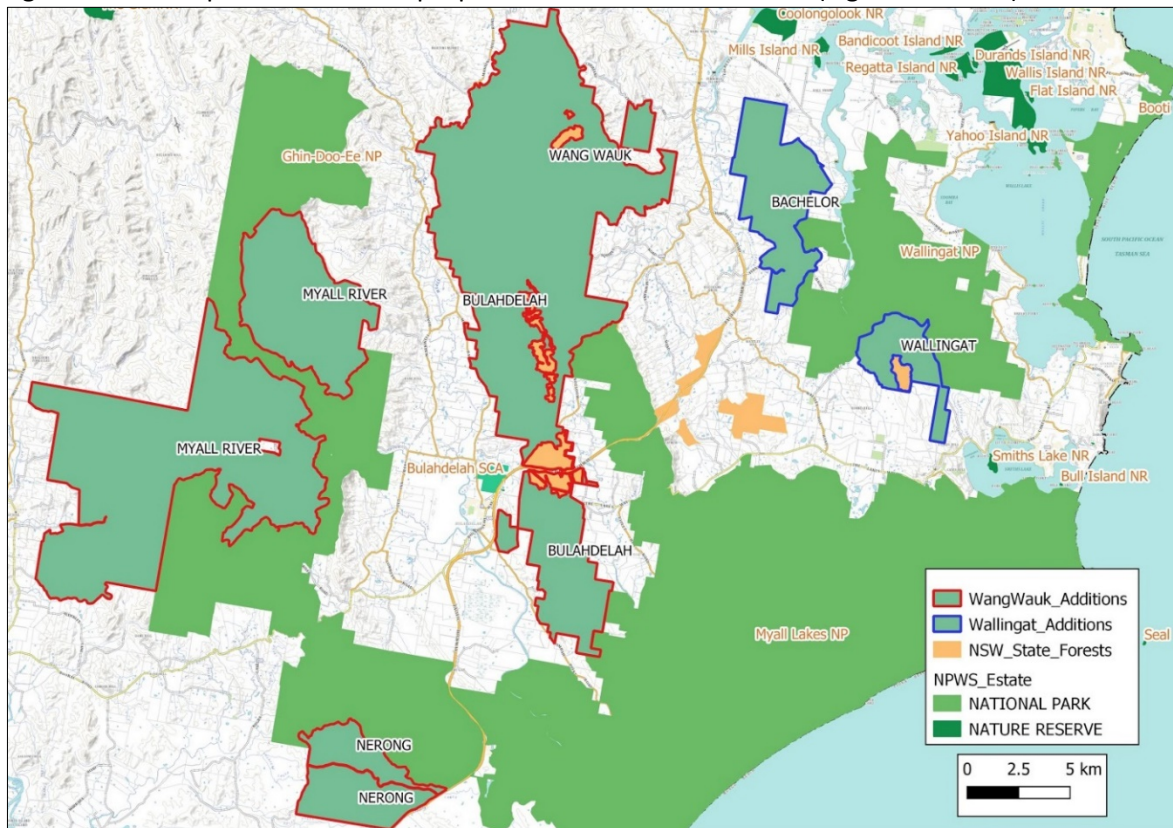


Figure 13: Proposed Wang Wauk additions (red outlined polygons) and Wallingat additions (blue outlined polygons).

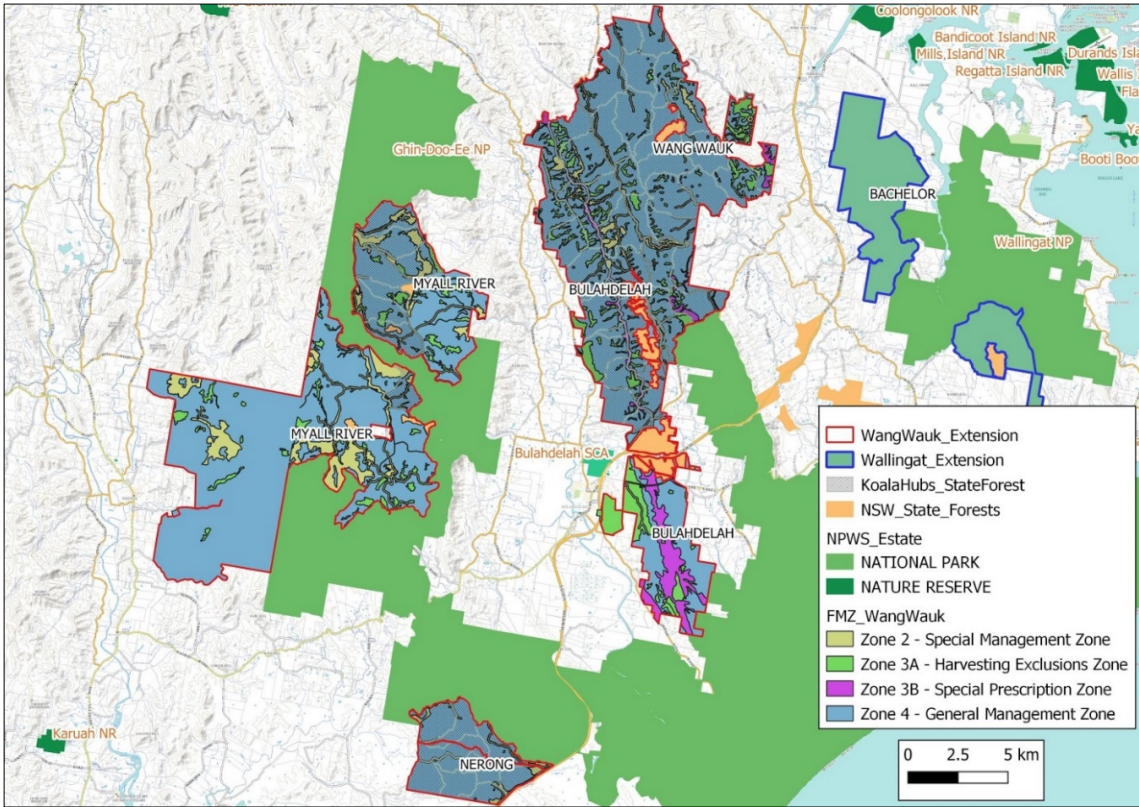


Figure 14: Wang Wauk additions overlaid with Forestry Management Zones (FMZs) and WWF's koala hubs (grey shading). The proposals have significant overlap with WWF's koala hubs, and the hubs in turn overlap very strongly with FMZ 4 meaning they are a significant risk from logging.

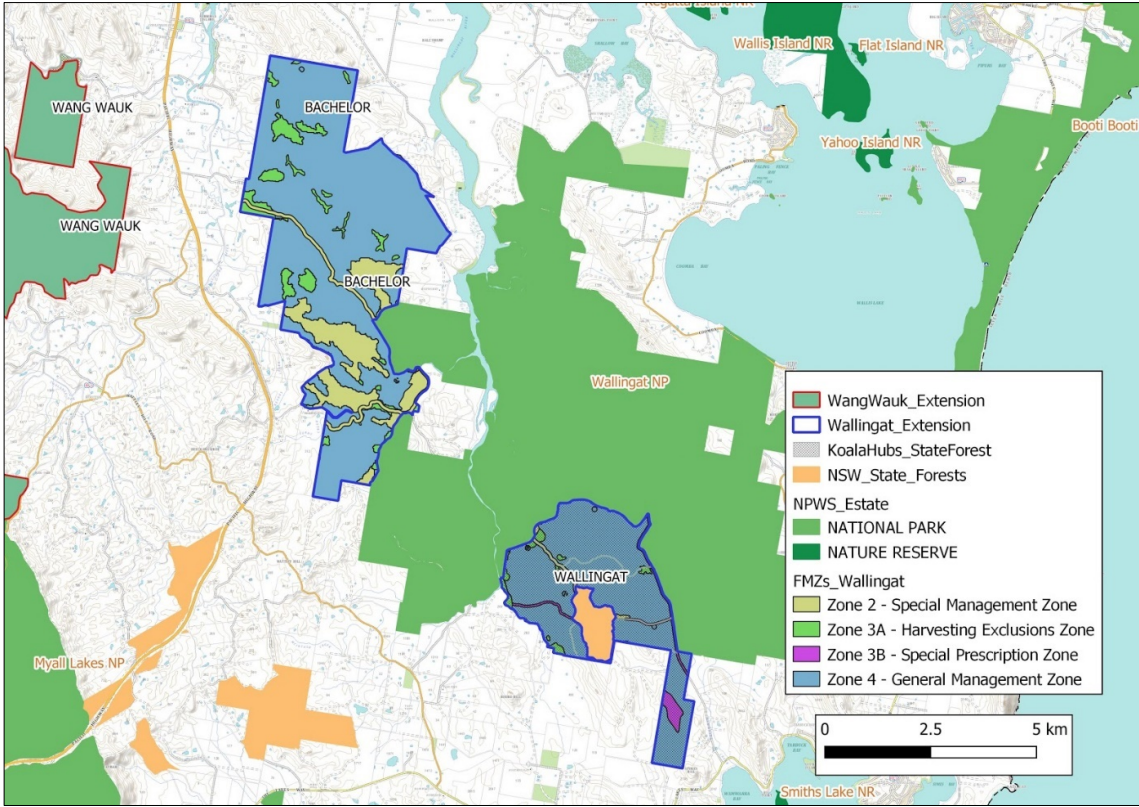


Figure 15: Proposed additions to Wallingat national park with Forest Management Zones (FMZs) and WWF's koala hubs (grey shading) overlaid.

Reserve proposal 7- Githabul Country in the Border Ranges

NPA is one of several signatories to a Memorandum of Understanding (MOU) with the Githabul that calls for a return of country in the Border Ranges and resources to restore state forests degraded by logging. Subject to the agreement of the Native Title holders, the proposal would cover approximately 30,000ha of 13 state forests and would help link seven existing World Heritage properties and a recognised biodiversity hotspot (Figure 16). Additionally, the Githabul Tribal Lands contain extensive areas of koala hubs (Figure 17).

NPA proposes:

- Transferring care and control of 29,700ha of state forests from the NSW government to the Githabul Tribe.
- Preparing a comprehensive Plan of Management to safeguard conservation and cultural values and prioritise rehabilitation works.
- A comprehensive rehabilitation plan to arrest and repair forest dieback as part of a Githabul caring for country program.
- NPWS positions and training for Githabul Working on Country in National Parks in the Kyogle area.
- Transferring the care and control of Crown lands around the Tooloom Falls Aboriginal Place to the Githabul Tribe.
- Promoting the establishment of a Cultural and Tourism Centre at Roseberry Creek.
- World Heritage Listing for the national parks in the region.

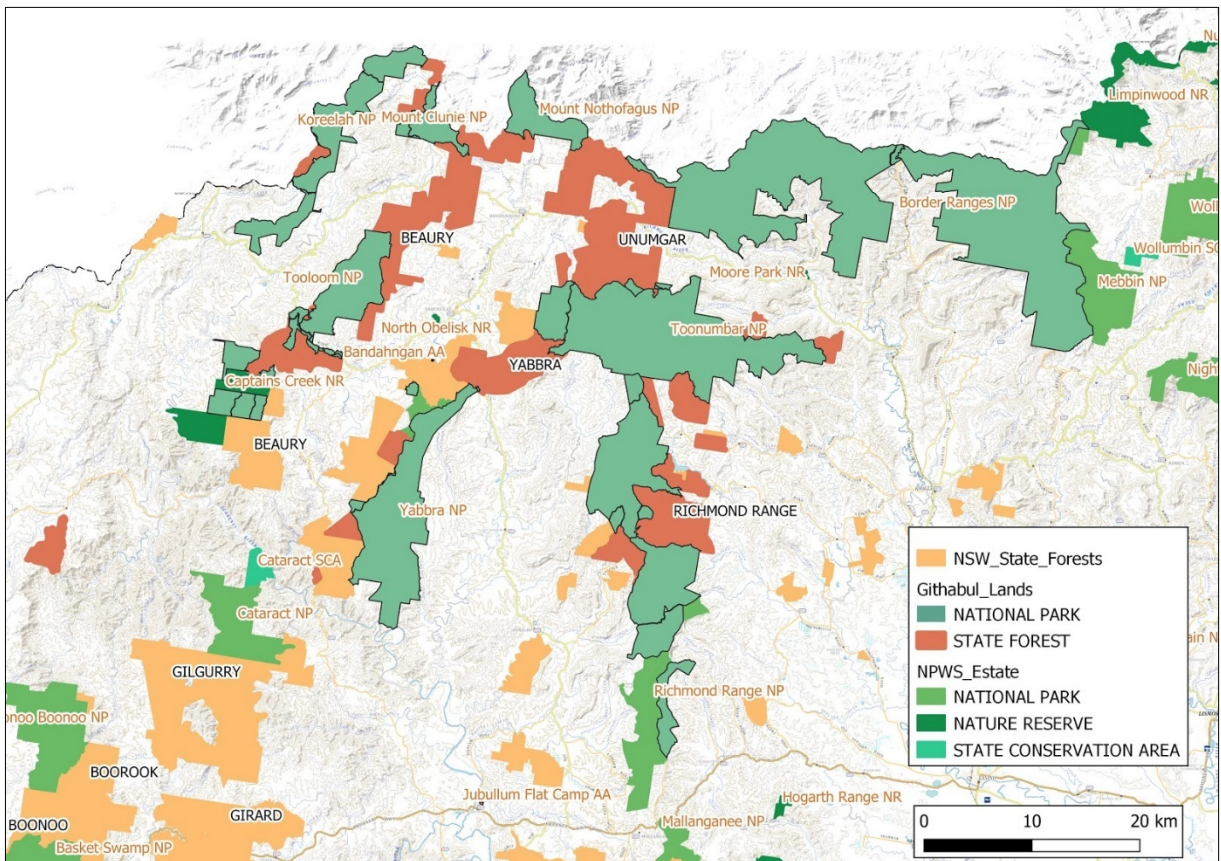


Figure 16: Map of the Githabul Native Title lands in the Border Ranges

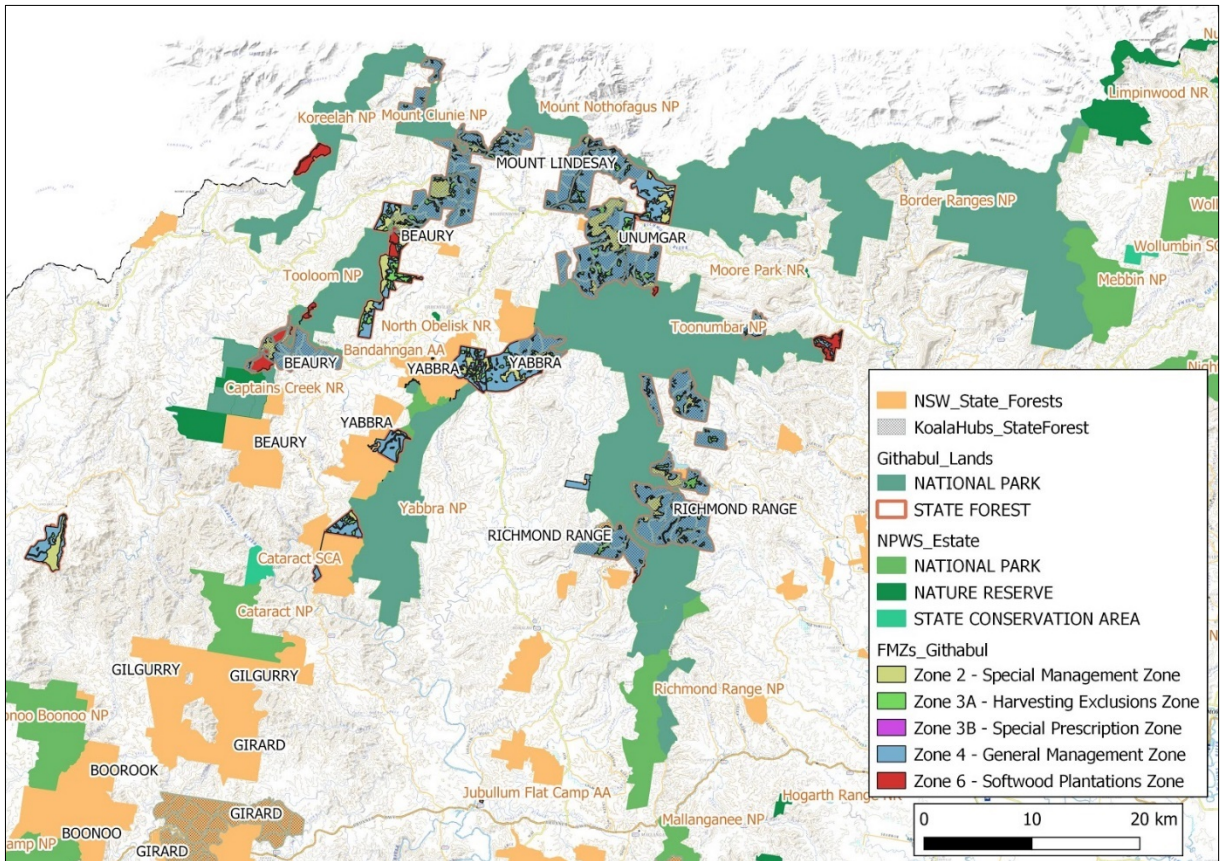


Figure 17: Map of the Githabul Tribal lands with WWF's koala hubs (grey shading) overlaid, as well as the Forest Management Zones (FMZs). The hubs overlap strongly with FMZ 4 which is the primary zone for timber extraction.

Reserve proposal 8- South Coast koala priorities

NPA appreciates that the approximately 12,000ha Murrah Flora Reserves (comprised of Murrah, Mumbulla and Tanja state forests, as well part of Bermagui) (Figure 18) were created specifically to protect the remaining, small koala population on the south coast of NSW. We recommend the following in relation to the Murrah Flora Reserves:

- Bermagui flora reserve be added to Bermagui nature reserve
- Tanja flora reserve be added to Mimososa Rocks national park
- Murrah and Mumbulla flora reserves be added to Biamanga national park

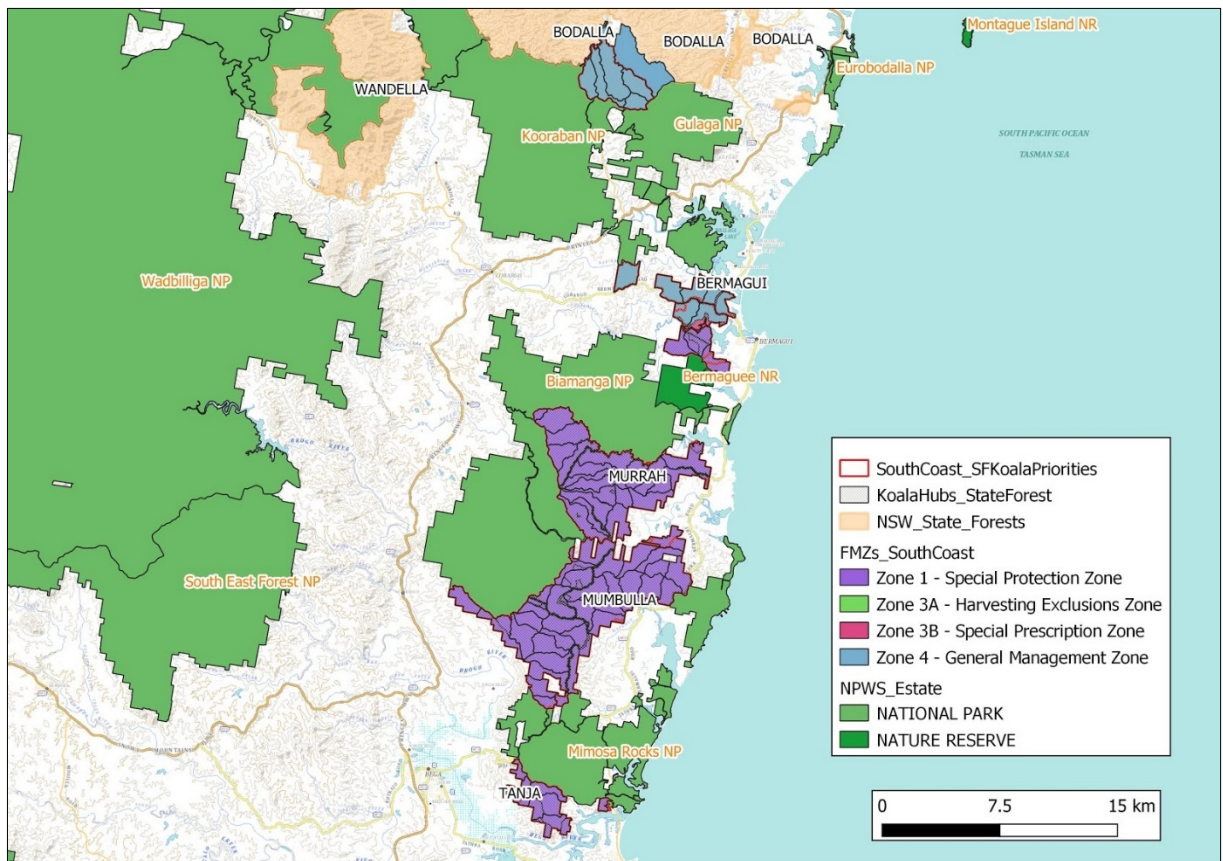


Figure 18: Map of the far south coast of NSW showing WWF's koala hubs (grey shading), koala reserve priorities in state forests based on the koala hubs (red outlined polygons) with Forest Management Zones overlaid and the Murrah Flora reserves (purple polygons). Besides the Murrah Flora Reserves, areas of Bermagui and Bodalla state forests identified as koala hubs are FMZ 4.

There are additional koala hubs outside the Murrah flora reserves, including 1,287ha of Bermagui state forest and 1,178ha of Bodalla state forest, the majority of which is Forest Management Zone (FMZ) 4 and subject to logging. The 'twin commitment' currently precludes the protection of these valuable areas. NPA proposes the addition of the former to Bermagui nature reserve, and the latter to either Gulaga or Kooraban national parks, subject to discussion with the Aboriginal community. We note that the Bodalla additions would also enhance connectivity between Kooraban and Gulaga.

Further areas of koala hubs exist west of Merimbula (Figure 19). These include 2,308ha of Yurammie and Gnupa state forests, and 1,400ha of Tantawanglo and Cathcart state forests. Significant portions of the Tantawanglo and Yurammie are in FMZ 3B - Special Prescription, suggesting they could be readily added to South East Forest national park. However approximately 1,500ha of the Gnupa koala hubs are within FMZ 4, and 750ha of Cathcart are FMZ 4. The 'twin commitment' currently precludes the protection of these valuable areas.

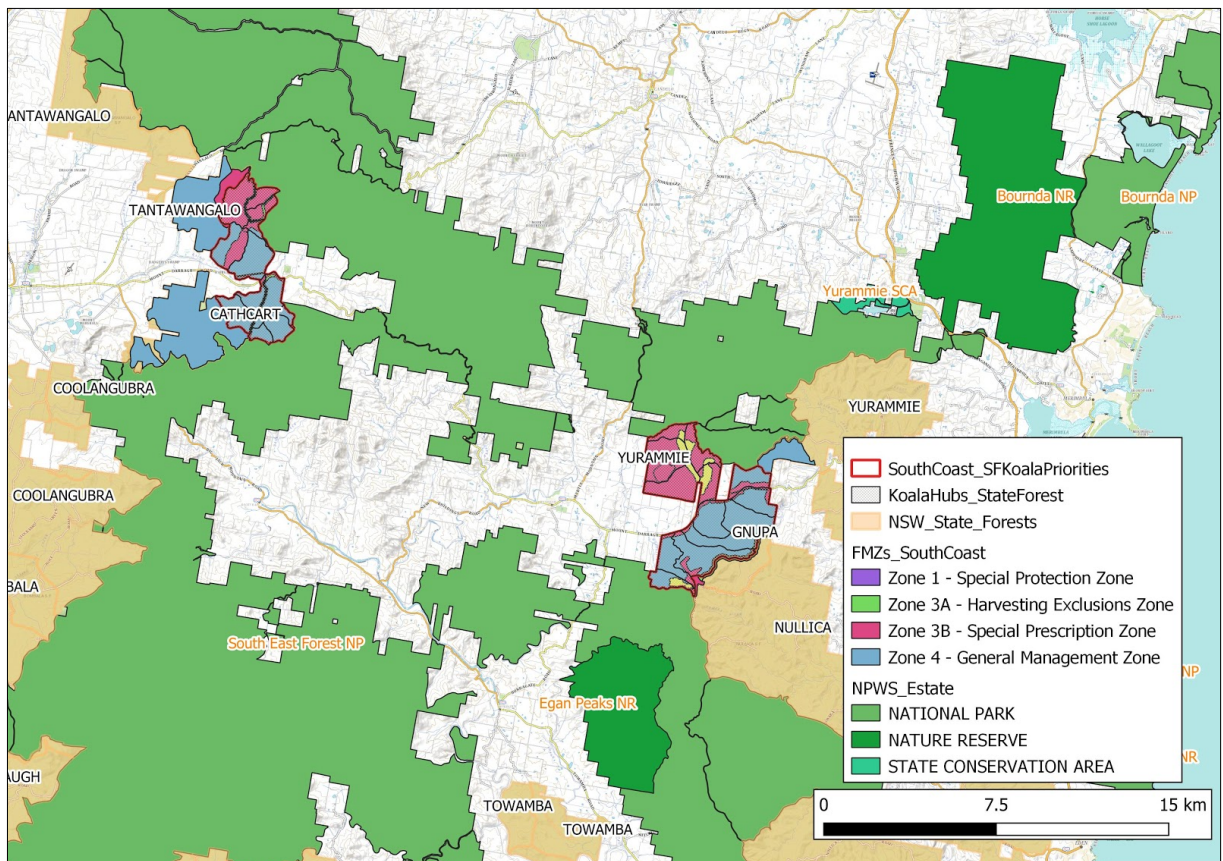


Figure 19: Map showing WWF's koala hubs (grey shading), koala reserve priorities in state forests west of Merimbula based on the koala hubs (red outlined polygons) with Forest Management Zones overlaid (coloured polygons). Significant areas of the Yurramie and Tantawanglo koala hubs are FMZ 3B - Special Prescription, while significant areas of Gnupa and Cathcart are FMZ 4.

Reserve proposal 9- The Pilliga

The Pilliga is the largest continuous remnant of semi-arid woodland in the state. The forest is located near the towns of Baradine and Narrabri and the villages of Pilliga and Gwabegar. The public land area is currently managed by NPWS (as national park, nature reserve and state conservation area) and state forests. NPA proposes that the state forests be consolidated with existing protected areas as a single Pilliga National Park (Figure 20).

Koala populations in the Pilliga have fallen precipitously due to extreme heat and drought (Lunney et al. 2012; Lunney et al. 2017), disappearing from 79% of sites where they were previously recorded. Koalas persist 'next to drainage lines in the western half of the Pilliga'. Protection and restoration of these refuge areas is therefore crucial. The importance of drainage lines as refugia raises questions as to the potential impact of gas extraction on groundwater on refugia.

Koala hubs in the Pilliga are concentrated in the western state forests. This accords with the findings by Lunney et al. (2017). As in other parts of the State, koala hubs overlap strongly with Forest Management Zone (FMZ) 4, with only a small area of hubs found in FMZs 1-3 (Figure 21).

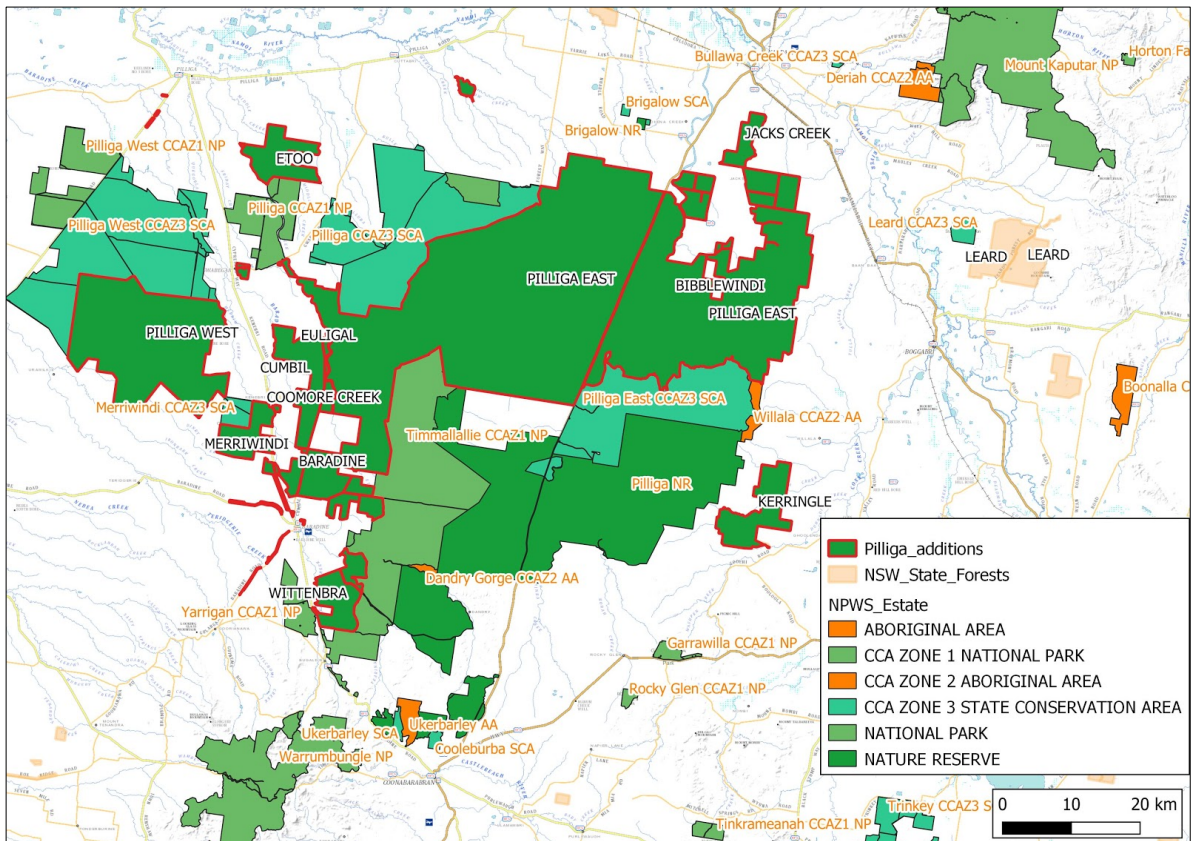


Figure 20: State forests that require reservation under the National Parks and Wildlife Act (red outlined polygons) to create a consolidated Pilliga National Park in the context of existing protected areas.

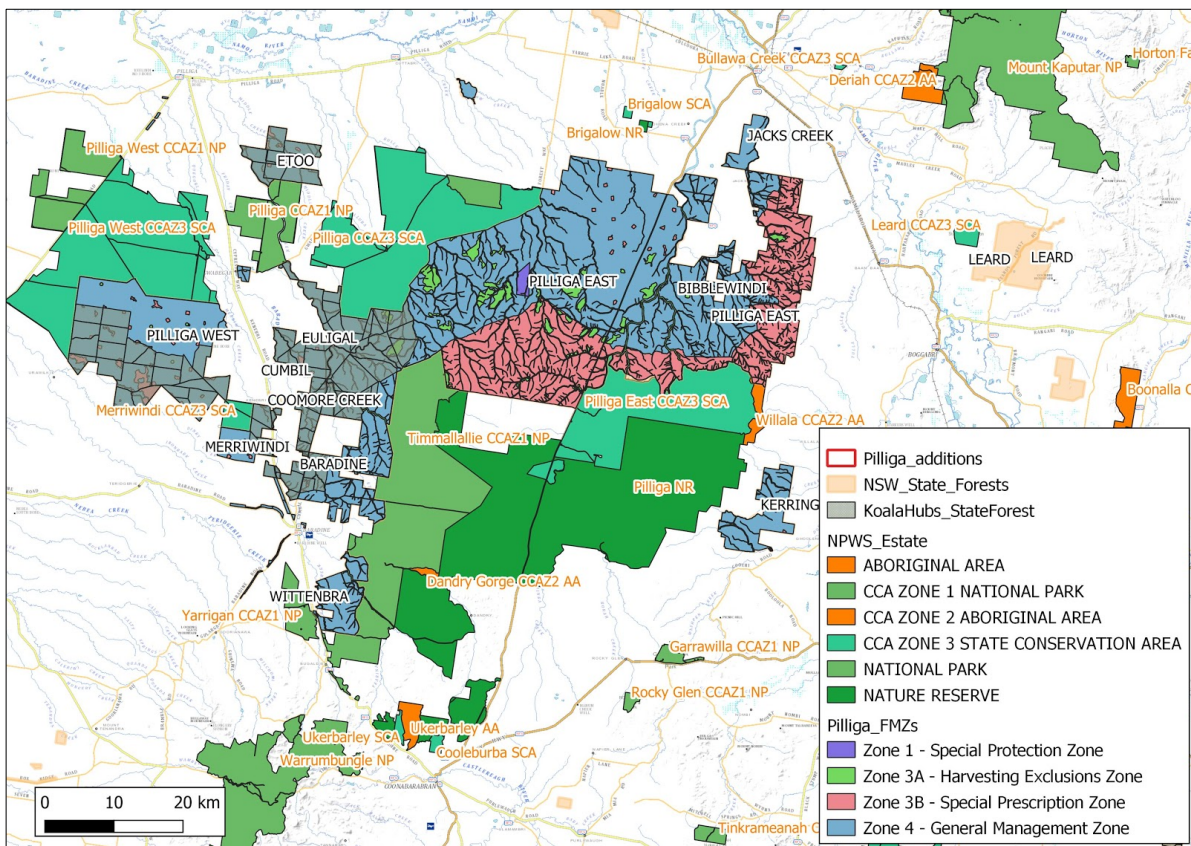


Figure 21: Forest Management Zones (FMZs) in the Pilliga relative to koala hubs (grey shading).

The environmental, social and economic impacts of establishing new protected areas to conserve koala habitat

The NSW government states that koalas support 9,000 jobs and generate up to \$2.5 billion annually. The persistence of koalas is therefore an economic imperative, as well as a moral one.

According to Destination NSW, nature-based tourism is a large and growing industry that contributes \$21 billion to NSW every year. National parks are, after the beach, the main driver of this economic activity. They are therefore not just vital for the conservation of nature, but for regional economies too.

The GKNP would be Australia's first national park dedicated to protecting koalas and we believe that it would become a globally significant tourist attraction. Further, the proposed GKNP is located in an area (Moonee-Bindery) that has been identified as possessing World Heritage values, adding weight to the significance of the proposal. World Heritage is the 'gold standard' for parks and globally significant tourism destinations. NPA, alongside local community groups, has developed a suite of tourism and recreation offerings that would help maximise the economic return from the GKNP, including walking trails, riding trails, self-drive tours and mountain bike hubs in appropriate locations. Investing in mountain bike tourism is proven to provide a strong economic return¹.

Transitioning industry to create the Great Koala National Park

Prior to the 2019 NSW election, the Australian Forests Products Association (AFPA) released a report ostensibly detailing the economic impact of creating the GKNP. What was actually modelled was retiring the entire wood supply agreements and thus ending native forest logging in north-east NSW. The report showed that ending native forest logging, creating the GKNP and protecting and restoring all state forests for their wildlife, water and carbon values is eminently feasible both economically and socially. It aligns better with a suite of policy settings than does logging².

AFPA's document cited 566 direct logging jobs in north-east NSW and 652 direct jobs NSW-wide (i.e. just 86 in southern NSW). A further 829 indirect jobs were estimated in north-east NSW and 1,219 state-wide (i.e. 390 in southern NSW). This gives a maximum of 1,395 affected jobs in north-east NSW. It is highly likely that this is an overestimate as not all indirect jobs will be entirely reliant on the native forest logging industry.

AFPA's estimate broadly accords with NPA's estimates of job impacts of establishing the GKNP using 2016 census data (Table 1). NPA's estimate included both direct (e.g. logging, milling) and indirect (support services) jobs, and only considered the Local Government Areas (LGAs) in which the GKNP would be established. For each LGA, logging jobs accounted for a maximum of 0.02% of total employment.

Our estimate is almost certainly an overestimate because the 'other wood product manufacturing' is unlikely to be completely reliant on the native sector, some mills in the 'log sawmilling and timber dressing' sector will receive wood from private property and some mills will receive plantation timber. Using NPA's estimate, if every logging-associated job (direct and indirect) was to be lost in all of these LGAs, it would equate to approximately 837 (estimating a figure of 80 jobs in the Nambucca LGA based on the neighbouring LGAs).

¹See Case Studies on pages 60-66 in NPA's Forests For All Case For Change document. <https://npansw.org/wp-content/uploads/2018/06/Forests-For-All-Case-For-Change.pdf>

² See NPA's Forests For All Case For Change document for a discussion of current policy settings in the context of ending native forest logging on public land. <https://npansw.org/wp-content/uploads/2018/06/Forests-For-All-Case-For-Change.pdf>

Table 1: NPA's estimate of employment (direct + indirect) in the forestry industry in the five LGAs in which the GKNP would be located as sourced from Economy.id (see footnotes for links to data sources).

	Clarence ³	Coffs Harbour ⁴	Bellingen ⁵	Nambucca ⁶	Kempsey ⁷
Forestry and logging	81	68	15		9
Forestry support services	20	36	6		5
Log sawmilling and timber dressing	205	46	41		31
Other wood product manufacturing	92	69	13		20
Total logging jobs	398	219	75		65
Total LGA employment	16,347	28,878	3,612		9,334
Logging % total LGA employment	0.02%	0.007%	0.02%		0.007%

2015 Parliamentary Budget Office (PBO) costings⁸ for establishing the GKNP were \$119.5 million over two years. This figure included redundancy payments (\$50.8 million), and business exit assistance (\$64.1 million) that incorporated timber buy-backs, worker retraining, and reliant business assistance. Mill clean-up costs were estimated at (\$4.6 million). The precise figures upon which these costings were based (i.e. how much timber, how many workers etc) is not known.

However, in light of the Red Gum costings (Table 2) it is likely that the PBO estimated 567 workers made redundant (based on \$100,000 allocation per worker). Assuming the AFPA's figures are correct, the PBO appears to have modelled the cost of redundancy payments for all logging workers, the retirement of the entire WSAs in NE NSW, and therefore the end of the public native forest logging industry in NE NSW.

³ <https://economy.id.com.au/clarence-valley/Employment-census>

⁴ <https://economy.id.com.au/coffs-harbour/Employment-census>

⁵ <https://economy.id.com.au/bellingen/Employment-census>

⁶ Not available on economy.id

⁷ <https://economy.id.com.au/kempsey/Employment-census>

⁸ <https://www.parliament.nsw.gov.au/pbo/Documents/2015ALPelectionpolicycostings/A369%20Costing.pdf>

Table 2: Expenditure allocated to the River Red Gum restructuring package accompanying the creation of the Murray Valley National Park

Item	Cost (\$ millions)	Explanation
Business exit assistance	26.004	22 sawmills received payment
Structural improvements	5	Includes flood relief, purchase of additional timber and mill upgrades
Worker assistance	14.164	Workers were eligible for \$81,360 assistance payment + \$10,000 training allowance. 177 eligible applications were received, and the NRC estimated 334 FTE total industry employment
Reliant business assistance	1.789	This was to support associated businesses affected by mill closures
National Park Establishment	23.52	11.83 for new park infrastructure, 6.96 for park management and 2.0 for Aboriginal joint management
Regional and Community Development	12	Funding for a range of business initiatives
Research, regulation, payments to DPI and NRC	9.98	
Total	92.457	Total allocation was \$97 million

2019 PBO costings for establishment of the GKNP⁹ were \$80.6 million over five years. This considered funding for a koala hospital, national park tourism facilities, ecological assessments of forests and employee related costs (hiring of 100 staff). The bulk of this cost was staff payments (\$63.8 million over 5 years).

The approximate total cost of ending native forest logging in NE NSW, compensating industry and workers, establishing the GKNP and employing 100 additional people (based on PBO figures) is thus \$200 million.

NPA believes that there are other elements of the GKNP that should be funded in order for the park to function optimally, and estimates a cost of \$39 million over 5 years based on:

- \$3m for a visitor centre/koala hospital (matches the NSW government announcement for a koala hospital and tourism centre for Port Stephens, but is much lower than the PBO estimate of \$10.3 million)
- \$6m for development of mountain bike trails
- \$20m for development of walking tracks (over a 4-year period; one long, approximately \$10m, several small)
- \$10m for restoration of degraded forests (estimate)

This is a very small figure to establish such a significant protected area, and it does not taken into account the huge co-benefits of increasing carbon stores and water yields (Keith et al. 2017) as a result of ending logging.

⁹ <https://www.parliament.nsw.gov.au/pbo/Documents/2019%20ALP%20Election%20Policy%20Costings/B427%20-%20Costing.pdf>

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