6/02/2024

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Independent Assessment into the potential ecological impacts associated with the NSW Government Planning reform: the TOD SEPP and the Low-Mid rise Housing Policy (v1.0)

To whom it may concern,

The NSW Government is proposing new housing policies called 'Changes to create low and mid-rise housing' and 'Transport Oriented Development Program'.

Land Eco Consulting (Land Eco) was engaged by Ku-ring-gai Council to conduct an independent assessment into the potential ecological impacts associated with the NSW Government Planning reform: the proposed Transport Orientated Development ('TOD') State Environmental Planning Policy ('the SEPP') and the Low-Mid rise Housing Policy ('the Housing Policy'). The SEPP and Housing Policy area is here forward referred to as the 'impact area.'

Under the proposed 'Changes to create low and mid-rise housing', dual occupancies will be allowed in most residential zones in Ku-ring-gai on minimum block sizes of 450sqm. Terraces, townhouses, manor houses (two storey apartment blocks) and 6 to 7 storey mid-rise apartment blocks will be permitted within walking distance of Ku-ring-gai's railway stations and possibly other local centres. The proposed new development controls will apply in Heritage Conservation Areas. The requirements for landscaping and tree retention will also be significantly reduced. The proposed planning control would reduce requirements for deep soil planting and tree targets from 50% to 7% of site area for mid-rise housing. This will result in net loss of trees, and revegetation (native vegetation replacement) over the whole of Ku-ring-gai.

Of the 31 stations announced in Part 2 of the TOD program, four are in Ku-ring-gai LGA being Gordon, Killara, Lindfield and Roseville. This would introduce a blanket 6 to 7 storey height permissibility for unit developments within the area mapped 'TOD SEPP' (**Figure 1**) near Roseville, Lindfield, Killara, and Gordon railway stations. Part 2 of the TOD program is intended to deliver '138,000 new homes over 15 years.' The chosen TOD areas are described 'within 400m of the station' and is aimed at allowing people to be able to live within walking distance of public transport.

The areas affect by the proposed TOD and Housing policy is presented (**Figure 1**).

Figure 1. Location of the TOD SEPP Area, and Low and Mid-Rise Housing Area

In recognising the importance and potential benefits of government-endorsed housing initiatives, we do hold concerns that introducing significant changes to state planning (as proposed) will not allow appropriate planning input from the appropriate experts and stakeholders to ensure development targets can be achieved in a manner that avoid and minimise impacts to important biodiversity.

If biodiversity impacts are not properly considered in the proposal, there is potential that this NSW Government be facilitating significant and irreversible loss of biodiversity across northern Sydney, including Ku-ring-gai, at rates not seen since early European colonisation. The proposal will likely result in significant loss, and possibly even extirpation of threatened species and ecological communities across the Ku-ring-gai Council local government area, New South Wales, and Australia as a whole.

Land Eco are Ecologists, our expertise lies in analysing the potential effects to ecology/biodiversity from development. We understand the need for more affordable housing in our community, and we understand the role that private developers have in helping NSW meet this demand. Further to this, Land Eco acknowledges the NSW Government's ambition to leverage Sydney's existing transport networks to create more sustainable, connected and accessible living environments for the growing population.

Key Potential Impacts to Ku-ring-gai Council Biodiversity

Impact	Explanation
Loss of Tree Canopy	Within the impact area there are many high value, mature trees with significant canopy cover. Ku-ring-gai Council is iconic for its high tree canopy cover. The tree canopy contributes significantly to the liveability of the Council Area. It provides protection from over-exposure to UV radiation, improves air quality, cools local environments and supports wildlife habitat. Much of this canopy is comprised of Critically Endangered Ecological Communities (CEEC) including: 1. Sydney Turpentine Ironbark Forest CEEC, and 2. Blue Gum High Forest CEEC. If the proposed SEPP and Housing Policy fails to allow mechanisms that ensure protection of these canopy trees, the character and biodiversity values of Ku-ring-gai will be lost forever.
Impacts to Threatened Ecological Communities	Ku-ring-gai Council is home to a diverse suite of vegetation communities including CEEC, most notably: 1. Blue Gum High Forest (BGHF), and 2. Sydney Turpentine Ironbark Forest (STIF) (**Figure 2**). The Ku-ring-gai LGA is one of the largest holders of both BGHF and STIF. The majority of such communities in exitance occurs on private land, outside of the reserve estate. Using geographical information system (GIS) software, we performed an analysis whereby we overlaid the proposed TOD and Housing Policy proposal areas on top of NSW-government threatened ecological community (TEC) mapping (Department of Planning and Environment 2022).

Impact	Explanation
	Assuming a worse-case scenario, where the SEPP and TOD Housing Policy permit clearing of all vegetation within the proposal area, our analysis shows this could result in permanent loss of: 1. approximately 162 ha of BGHF, 2. approximately 217 ha of STIF (**Figure 3**). We hold serious concerns for the on-going survival of these two CEEC, since the proposal area holds one of the largest remaining extents. It is considered likely that a proposal which results in such high levels of BGHF and STIF clearing will contribute to the functional extinction of those TEC. Further, since the proposed planning control would reduce requirements for deep soil planting and tree targets from 50% to 7% of site area for mid-rise housing. This will result in net loss of trees, and prevent adequate compensation/mitigation that is currently afforded through the DA process through condition-enforced deep-soil revegetation landscaping including tree, shrub and groundcover replacement. As these TEC are both listed under NSW (*Biodiversity Conservation Act 2016*) and Commonwealth (*Environment Protection and Biodiversity Conservation Act 1999*) legislation, any planning decisions that contribute toward their extinction is a problem of not just local, but of state and national concern.
Loss of Habitat Connectivity Essential for Migratory Native Fauna Species	There is the potential that the developments associated with the SEPP and Housing policy will interfere with flight paths of some protected animals, including migratory species. These species utilise the vegetated ridgeline (where the current Pacific Highway, and trainline spans) as they migrate north to south. The loss of the vegetation along this ridgeline could have a significant impact on migratory species through loss of foraging and sheltering resources. Many protected, and declining obligatory migratory birds such as Yellow-faced Honeyeater (*Caligavis chrysops*) and White-naped Honeyeater (*Melithreptus lunatus lunatus*) rely on the canopy that spans this north-south corridor to navigate, rest and forage. The biannual honeyeater migration, including the above species, and also, occasionally the Critically Endangered Regent Honeyeater (*Anthochaera phrygia*) follows the vegetated belt. The proposed planning changes could result in permanent loss of this important resource for migratory birds. Other threatened, migratory and nomadic, nectivorous species which are known to utilise this canopy as a stopover for foraging and temporary shelter include the Critically Endangered Swift Parrot (*Lathamus discolor*), Vulnerable Little Lorikeet (*Glossopsitta pusilla*) and the Grey-headed Flying-fox (*Pteropus poliocephalus*). The nomadic, vulnerable, Yellow-bellied Sheath-tailed Bat (*Saccolaimus flaviventris*) relies on tall trees on ridgelines, particularly those that contain hollows, or decorticating bark, including remnant Sydney Blue Gum (*Eucalyptus saligna*) and Sydney Red Gum (*Angophora costata*) to shelter as it migrates north and south.
Increased Risk to Native Fauna from Building Strike	The proposed SEPP and Housing Policy will involve the construction of tall buildings many of which will be taller than those that currently exist in the Ku-ring-gai LGA.

Impact	Explanation
	It is likely that increased numbers of bats and birds, especially those that fly at night will succumb to window strike because of the proposed increases in building height centred around the ridgeline that supports the Pacific Highway and train line. Species that are already known to suffer from this impact in the urban-Sydney region, include migratory birds such as cuckoos, kingfishers, fruit-doves, whistlers, pittas, quails, snipes, bitterns, crakes and rails. Impacts to these sensitive native bird groups will increase as a result of the proposed changes.
Loss of Native Fauna Habitat Connectivity between Conservation Areas **and** **Loss of Native Fauna Foraging Resources**	The urban sprawl has led to a highly fragmented landscape across Greater Sydney and beyond, with small patches of suitable bird habitat surrounded by highways and buildings that frequently act as barriers, even for mobile creatures such as birds (Isaksson 2018). It is expected that the SEPP and Housing Policy will significantly increase fragmentation and isolation of populations of animals across the Ku-ring-gai LGA and beyond. If not properly planned, the SEPP and Housing policy could result in the loss of such substantial numbers of trees from the private properties of Ku-ring-gai ('the green matrix') that native wildlife, especially bird species richness and abundance could decline. Habitat corridors that connect sensitive native bird population centres in Lane Cove National Park, Ku-ring-gai National Park and Garigal National Park could be severed by the proposal, isolating these birds to those parks, and preventing their occurrence in the suburbs, and potentially impacting upon population viability through reduced access to foraging resources and gene flow. The loss of tree canopy cover and vegetation as a whole will also support, an environment that is more suited to urban-adapted and non-native birds such as Common Myna (*Acridotheres tristis*), Feral Pigeon (*Columba livia domestica*) and the overabundant Australian Raven (*Corvus coronoides*). We expect that the following, sensitive, canopy-dwelling birds will suffer most from the proposal, these species hold strong populations in the green-matrix across the private landholdings of Ku-ring-gai, but are rare, if not absent, from more urban local government areas (LGA) such as those in the more urbanised inner-west suburbs of Sydney, which underwent levels of urbanisation similar to that proposed. Beautiful native bird species, many of which are iconic to Ku-ring-gai, including the Crimson Rosella (*Platycercus elegans*), Australian King-parrot (*Alisterus scapularis*), Spotted Pardalote (*Pardalotus punctatus*), Dollarbird (*Eurystomus orientalis*), Sacred Kingfisher (*Todiramphus sanctus*), Yellow-faced Honeyeater, White-naped Honeyeater, Eastern Spinebill (*Acanthorhynchus tenuirostris*), Scarlet Honeyeater (*Myzomela sanguinolenta*), Pacific Baza (*Aviceda subcristata*) and Little Wattlebird (*Anthochaera chrysoptera*). The large amount of vegetation within Ku-ring-gai LGA provides foraging resources to an array of species including many threatened fauna species. The two threatened species most at risk from the SEPP and Housing Policy are the Powerful Owl (*Ninox strenua*) and Grey-headed Flying-fox. Both species are listed as vulnerable under NSW legislation, and the Grey-headed Flying-fox is also listed as

Impact	Explanation
	vulnerable under the Commonwealth EPBC Act. These species rely heavily on the tree canopy across the Ku-ring-gai LGA for foraging, and local and regional populations could be detrimentally impacted by the proposal as it is likely to result in extensive loss of both their shelter and foraging resources. Both the Powerful Owl and Grey-headed Flying-fox are important ecosystem engineers and foraging resources will be impacted for a range of species if these two species are absent or significantly declined from ecosystems. The Powerful Owl is an important component of urban ecosystems, due primarily to the top-down regulation as an apex predator they exert on their prey which include rats and possums. The Grey-headed Flying-fox is a critical pollinator and seed disperser of many south-eastern Australian trees and plays an essential role in the survival and regeneration of Australia's native forests. The proposed planning changes could also result in loss of foraging and movement resources which could result in local extinctions of sensitive native mammals such as the beautiful Sugar Glider (*Petaurus breviceps*), Ring-tailed Possum (*Pseudocheirus peregrinus*), and the tiny Feather-tailed Glider (*Acrobates pygmaeus*).
Loss of Breeding Resources	A large amount of specialist breeding habitat is at risk due to the SEPP and Housing Policy, including hollow-bearing trees. One of the key threatening processes listed under Schedule 4 of the NSW Biodiversity Conservation Act is the 'the loss of hollow-bearing trees'. The proposed planning changes will enable more development that will result in direct loss of old mature trees containing hollows. Particularly large Sydney Blue Gum, Sydney Reg Gum, Sydney Peppermint (*Eucalyptus piperita*) and Blackbutt (*Eucalyptus pilularis*) trees. Multiple beautiful, iconic, native birds that characterise the Ku-ring-gai area rely on tree hollows, such as those within the proposal area, for breeding and shelter. This includes the Crimson Rosella and Australian King Parrot, as well as the Laughing Kookaburra (*Dacelo novaeguinea*), Rainbow Lorikeet (*Trichoglossus haematodus*), Musk Lorikeet (*Glossopsitta concinna*), Eastern Rosella (*Platycercus eximius*), Sulphur-crested Cockatoo (*Cacatua galerita*), Galah (*Eolophus roseicapilla*), Long-billed Corella (*Cacatua tenuirostris*), Little Corella (*Cacatua sanguinea*), Sacred Kingfisher, Dollarbird and Australian Boobook Owl (*Ninox boobook*). On top of this, several threatened species also utilise tree hollows for sheltering and breeding, including the vulnerable Powerful Owl . There are several known breeding pairs within the locality including in Gordon, Killara, Lindfield, Roseville and Turramurra. Powerful Owls are well known to occur within the urban sprawl habitat including those within disturbed urban environments. For example, Powerful Owls were found to be breeding in a mature Sydney Red Gum in Chatswood High School in 2011. The nesting site has been in use from at least 2011 (except for 2019/20) and it would appear it was currently in use for the 2021 breeding season (Willougby Environmental Protection Association 2021). At least 11 chicks have successfully fledged from this nest over the last decade or more. There are multiple

Impact	Explanation
	large hollow-bearing trees in the proposed Ku-ring-gai impact area that are suitable for use, if not actually used by breeding pairs of Powerful Owl. The proposed planning changes could result in permanent loss of these breeding habitats. Hollows generally form in Eucalyptus trees that are between 120- and 150-year-olds. If the developments allowed under the proposed SEPP and Housing Policy fails to protect these hollow-bearing trees, there will be a significant reduction in breeding and shelter for an array of species including threatened species. It is imperative a conservation strategy such as hollow replacement through augmented hollows or nest box installation is implemented.
Permanent Change in Native Bird Assemblages	Urban habitats and landscapes that will be created by the SEPP and Housing Policy will be markedly different to the natural habitats that are currently seen across the Ku-ring-gai LGA. Natural green areas with native vegetation will be transformed into anthropogenic structures and impervious surfaces. To survive in the urban habitat, native species including birds are forced to either accept or avoid the new conditions. These altered conditions have dramatically changed avifauna diversity in other areas, with many species vanishing once an area is urbanised. This in turn results in a significant loss of local biodiversity. Among the over 10,000 recognised bird species in the world, only around 2000 (nearly 20%) occur in cities (Isaksson 2018). Most of the bird species that flourish in the urban environment are exotic species such as the Feral Pigeon and Common Myna along with the native but aggressive Noisy Miner that is identified as a key threatening process under the Biodiversity Conservation Act. A large amount of sensitive native species immediately vanished when an area is urbanised, leading to a species-homogenizing effect and a general lower species richness in the urban areas (Issakon 2018). A clear example of the homogenisation of species in urban environments can be seen through comparing eBird (The Cornell Lab 2024) checklist totals. For example, at Gordon Train Station (a heavily urbanised environment) a total of 18 bird species have been recorded, at Gordon Golf Course (a cleared and managed landscape) a total of 33 species have been recorded, whereas at Gordon Flying Fox Reserve (remnant bushland) a total of 96 bird species have been recorded. The proposed intensity of urban development, and loss of trees and vegetation from private land in Ku-ring-gai will result in loss of movement, foraging, shelter and breeding habitat for native birds. The proposed planning changes will place Ku-ring-gai Council LGA on the cusp of a significant and permanent avifauna species decline. This will change the character and atmosphere of Ku-ring-gai forever.
Increase in Density of Native Fauna Predation by Roaming Pet Cats	With an increase in high density housing, the Ku-ring-gai Area will see an increase in the ownership, and density of cats. Cats are often preferred companion animals in apartments as they require less space than dogs. Cats are often left by their owners to roam freely, and when doing so, are likely to hunt and kill native animals, particular birds.

Impact	Explanation
	Although, pet cats are valued as a companion animal, they are a major threat to wildlife. Collectively, roaming pet cats kill approximately 546 million animals per year in Australia alone (The Biodiversity Council 2023). One third of Australian households (33%) have pet cats, therefore it is expected a significant portion of the new residents will introduce more cats to the area. Although, some of these cats may be kept indoors 24 hours per day, previous studies have revealed that approximately 71% of all pet cats in Australia are able to roam free outside (The Biodiversity Council 2023). On average every roaming pet cat kills more than three animals every week, these numbers will significantly add up if thousands more residents come to the area with pet cats. Individual pet cats have been known to drive the decline and complete loss of native animal populations in their area before. The Biodiversity Council (2023) reported several documented cases of declines from cats in native animal populations including a feather-tailed glider population in south-eastern New South Wales; a skink population in a Perth suburb; and an olive legless lizard population in Canberra. Anecdotally, many people have experienced that native birds become scarce or absent in their gardens once a pet cat (their own, or that of a neighbour) takes up residence. Cats are also known to indirectly result in population decline by reducing the time that animals can spend feeding themselves or their young, or resting, as these animals spend more time hiding or escaping. The significant loss of vegetation from the developments associated with the SEPP and Housing Policy will also exacerbate these indirect impacts from cats as there will be less vegetation for prey species to hide in. The Biodiversity Council (2023) reported that in Mandurah, Western Australia, the disturbance, and hunting of just one pet cat and one stray cat caused the total breeding failure of a colony of more than 100 pairs of fairy terns that are commonwealth listed as vulnerable under the Environment Protection and Biodiversity Conservation Act. The proposed planning changes will result in irreversible, on-going impacts to native wildlife populations, from this threat alone.
Increased Risk of Indirect Impacts related to Bushfire Mitigation and Hard Surface Runoff	The urbanisation of these parts of Ku-ring-gai will result in encroachment into bushfire prone lands. Not only will the proposed development intensification result in direct loss of vegetation, trees and habitat for construction footprints, the requirement for bushfire hazard clearing (Asset Protection Zones) will lead to further clearing beyond the direct impact footprints. The increased levels of hard surfaces that replace larger gardens and canopy, will result in high volumes of stormwater runoff which will enter surrounding catchment at higher velocity and volume than under the current, high-permeability vegetated lower density residential landscape. This will cause permanent impacts upon the aquatic ecosystem of the catchment, including Lane Cover River and Cowan Creek. Some of these creeks contain conservation significant fauna species, including potential habitat of Platypus (*Ornithorhynchus anatinus*) and Rakali (*Hydromys chrysogaster*).

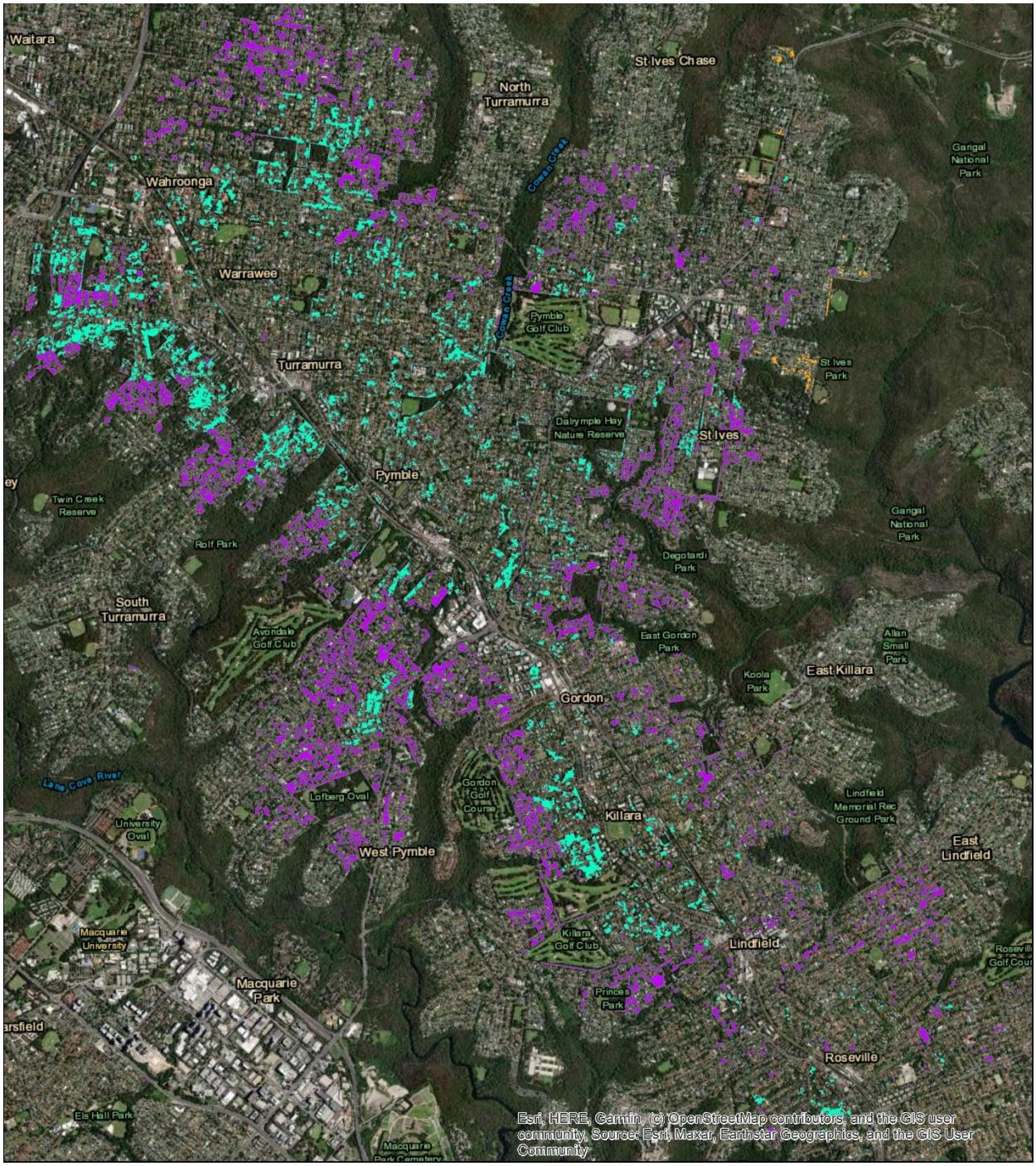

Figure 2. Threatened Ecological Community Mapping within the Impact Area (DPE 2022)

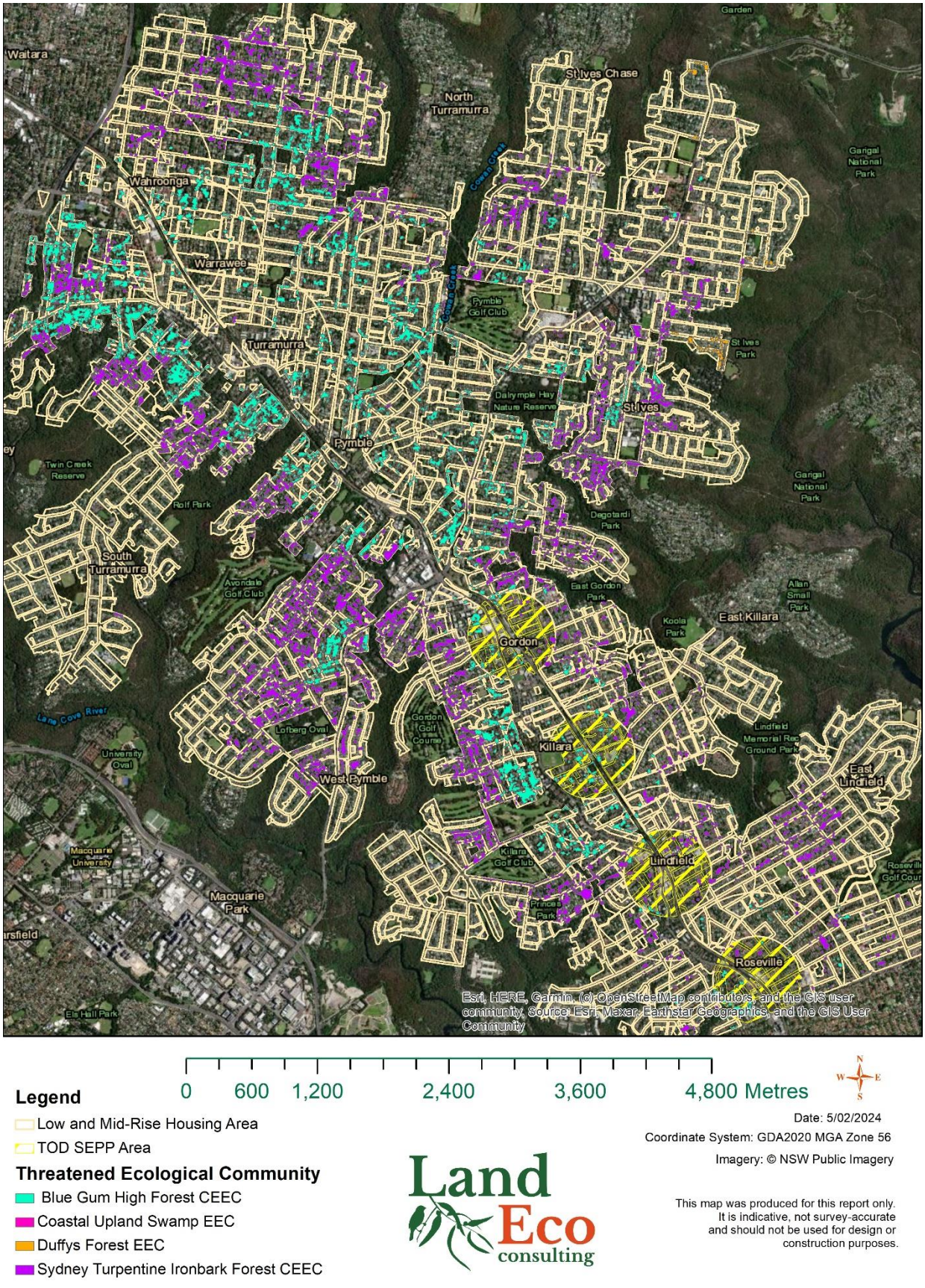

Figure 3. Threatened Ecological Community in reference to the TOD SEPP Area, and Low and Mid-Rise Housing Area (DPE 2022)

Concluding Remarks

By approving the SEPP and Housing Policy, as proposed, without sufficient planning for biodiversity protection, it is expected that the Ku-ring-gai LGA will experience unprecedent losses in biodiversity in vegetation, plants and animals.

Important development assessment processes that are afforded by current NSW and council planning controls including the principles of avoidance, minimisation, offsetting, and mitigation (e.g. replacement planting, and habitat replacement such as fauna nest hollow installation) are enabled through the development application and associated biodiversity impact assessment process (e.g. Flora and Fauna Impact Assessment or Biodiversity Development Assessment Report) on a case-by-case basis. The current development planning process in Ku-ring-gai enables a more appropriate level of resourcing required for Council planning officers, delegated planning panels and, where relevant, the state government (in the case of State Significant Developments) to make informed decisions about whether or not developments should proceed, and if so, whether appropriate modifications are required to maximise biodiversity protection.

From what we have seen to date, there has been little to no consideration of biodiversity matters in the planning for the proposed SEPP and Housing Policy. We emphasise the need for any proposed planning changes to adequately accommodate biodiversity values, through in-built procedures to avoid, minimise, offset, and mitigate impacts to biodiversity from proposed development intensification.

To ensure sensitive native biodiversity of Ku-ring-gai LGA can be sustained while enhancing much needed housing, appropriate biodiversity planning (demonstration of avoidance, minimisation and offset) on a precinct-wide scale through the master planning process, before any new development SEPP and policy is introduced.

The NSW Government must learn from and demonstrate improvements on previous biodiversity planning successes. The Western Sydney Growth Centres strategic assessment's goal was to provide 181,000 new homes, and support about 500,000 new residents in Sydney's growth centres. Although, this involved a significant amount of vegetation removal and habitat loss, the strategic assessment considered the impact of developments on biodiversity through a strategic Biodiversity Certification process whereby thorough, precinct-wide biodiversity assessments were undertaken for native vegetation, threatened ecological communities, and threatened species. Important populations/habitat areas were avoided/protected and other areas proposed for development after assessment of impact and offset through the BioBanking scheme. Councils and other stakeholders were invited to comment and/or contribute to the planning of the protection and development areas. While no without its challenges, this strategic Biodiversity Certification process enabled protection of high value biodiversity, while enabling development, in a manner that provided more certainty and reassurance to Council, developers and community.

The proposed TOD SEPP and Housing Policy has not demonstrated anything that resembles a strategic biodiversity assessment process. To the date we write this letter, Council and the people of NSW have not been made aware of any strategic biodiversity planning process to ensure this proposed TOD SEPP and Housing Policy will not have significant and irreversible effects on the natural capital of NSW as a whole.

Conclusion

In conclusion, Land Eco acknowledges the ambition of the NSW Government to help combat the ever-increasing housing crisis that is facing NSW residents. However, in its current state the SEPP and Housing Policy poses substantial concerns related to its environmental impacts on the biodiversity of Ku-ring-gai including threatened species such as the Powerful Owl and Grey-headed Flying-fox, and threatened ecological communities such as Blue Gum High Forest CEEC and Sydney Turpentine Ironbark Forest CEEC. It currently appears that the NSW Government has prioritised the density of housing at the expense of biodiversity conservation, and there is strong need for more research and planning before such a significant planning policy change is implemented.

Yours sincerely,

Kurtis Lindsay *BSc (Hons)*
Director / Principal Ecologist
Accredited Biodiversity Assessor (#BAAS18059)
M: 0408765832
E: kurtis.lindsay@landeco.com.au

About the Authors

Kurtis Lindsay *BSc (Hons) Accredited Biodiversity Assessor (#BAAS18059)*

Kurtis is a leading Ecologist in NSW with over 15 years experience in Ecological (both flora and fauna) assessment for development planning and approval. Kurtis was raised in Ku-ring-gai where he attended both primary and secondary schooling. Over his lifetime he has lived in the suburbs of Lindfield, Killara, East Killara, Pymble, Turramurra and Wahroonga. Kurtis is highly learned in the Ecology of Ku-ring-gai and has been involved in multiple community projects and organisations. He leads a team of Ecologists who have delivered Ecological/Biodiversity impact assessments for multiple developments across the Ku-ring-gai LGA, including for private developers and public authorities.
Kurtis understands the importance of both development and environmental conservation and constantly strives to ensure a balance between biodiversity conservation and development outcomes for the benefit of the the community of Ku-ring-gai and NSW as a whole.

Serene White *BSc, BNatSc, MRes*

Serene is an Ecologist with over 3 years of experience in the ecological field, with a strong passion in fauna conservation and a working knowledge in flora ecology. She has experience in conducting ecological surveys in a range of urban and rural environments. She also has experience in biodiversity assessment, monitoring, and reporting across the Greater Sydney Area. Serene has helped to assess, monitor, and manage a variety of developments including council projects such as footpaths to residential dwellings to large scale State Significant Developments. She undertook her university studies at Western Sydney University including a Bachelor of Science (Zoology)/Bachelor of Natural Science (Animal Science) with a major in Environmental Consulting along with a Master of Research. Her Masters thesis specialised in the recovery of Koala habitats after bushfire within the Sydney Basin using wildlife camera monitoring, acoustic recording, scat surveys and vegetation surveys to study potential koala habitats after fire. She also has extensive volunteer experience volunteering for wildlife sanctuaries, marine centres, and community groups.

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