

**Third party report on Matters of National Environmental Significance (MNES)
15 Torakina Road, Brunswick Heads**

Impacts on the South-Eastern Glossy Black Cockatoo (*Calyptorhynchus lathami lathami*)



“The Bruns trio” roosting on the Wallum proposed development site, October 2023
Pic: Locky Cooper/ Save Wallum

Introduction

This report constitutes an independent assessment (third party report) of likely impacts of the proposed development at 15 Torakina Road Brunswick Heads (**DA10.2021.575.1**) in north-eastern NSW on Matters of National Environmental Significance (MNES), with a particular focus on the Glossy Black Cockatoo (*Calyptorhynchus lathami lathami*). This report has been compiled by independent ecologist Anastasia Guise. Desktop analysis and site assessments were undertaken, including consideration of extensive current data collated by local conservation organisations and citizen science programs yet to be published in regards to the conservation of the Glossy Black Cockatoo population of northern NSW.

The development proposal is for a 127-lot housing estate on 30.5 hectares of wet heath and diverse coastal ecosystems just south of Brunswick Heads. The Bionet Atlas Protected Matters Search tool shows occurrence records for ten MNES species and one ecological community listed for the site, which include the Koala, Glossy black cockatoo, Wallum sedge frog, Long-nosed potoroo, Mitchell's rainforest snail, Australasian bittern, Swift parrot, Regent honeyeater, Grey-headed flying fox and Coastal swamp sclerophyll forest (DCCEEW, 2023a). In 2008, the State Planning Director-General's Environmental Assessment Requirements for the site, stated: *"If your proposal includes any actions that could have a significant impact on matters of National Environmental Significance, it will require an additional approval under the Commonwealth EPBC Act. This approval is in addition to any approvals required under NSW legislation"* (NSW Department of Planning [DPE], 2008). Federal consideration for the matters listed, including the Glossy black cockatoo, are outlined in the Environment Protection Biodiversity Conservation Act 1999 which states: *"A person who proposes to take an action that will have, or is likely to have, a significant impact on a matter of national environmental significance must refer that action to the minister for a decision on whether assessment and approval is required under the EPBC Act"* (Australian Government, 2023).

In anticipation of that referral, or in the instance that the proponent does not refer the project, the author provides this report for the Minister's consideration.

South Eastern Glossy Black Cockatoo conservation status

The south-eastern glossy black cockatoo (*Calyptorhynchus lathami lathami*) is a subspecies of threatened cockatoo restricted to south-eastern Australia, with patchy distribution across the south-eastern corner of Queensland, the eastern half of NSW, the ACT and far-eastern corner of Victoria (DCCEEW, 2022; Glossy Black conservancy, 2010). It is listed as Vulnerable in all of the jurisdictions where it occurs (NSW, Queensland, Victoria and ACT), and is listed as Vulnerable Nationally under the EPBC Act 1999 (DCCEEW, 2022).

Reasons for its listing under the EPBC Act include: "a decline in population, decline in extent of occurrence, decline in area of occupancy and the small population size" (DCCEEW, 2022). The Federal Conservation Advice for the species (2022) notes a 30-50% decline in population over the last 3 generations (35.7 years) due to historical and ongoing habitat loss, coupled with the impacts of the 2019-20 bushfires (DCCEEW, 2022). Habitat loss has been driven by **land-clearing, urbanisation**, logging practices, and inappropriate fire regimes (DEECW, 2022). While Glossy black cockatoos occur across a wide range, numbers of birds remain low, often as distinct localised populations, and there is no known estimate of total population size. The loss of old hollow-bearing trees during the 2019-20 bushfires has further impacted the species (DEECW, 2022).

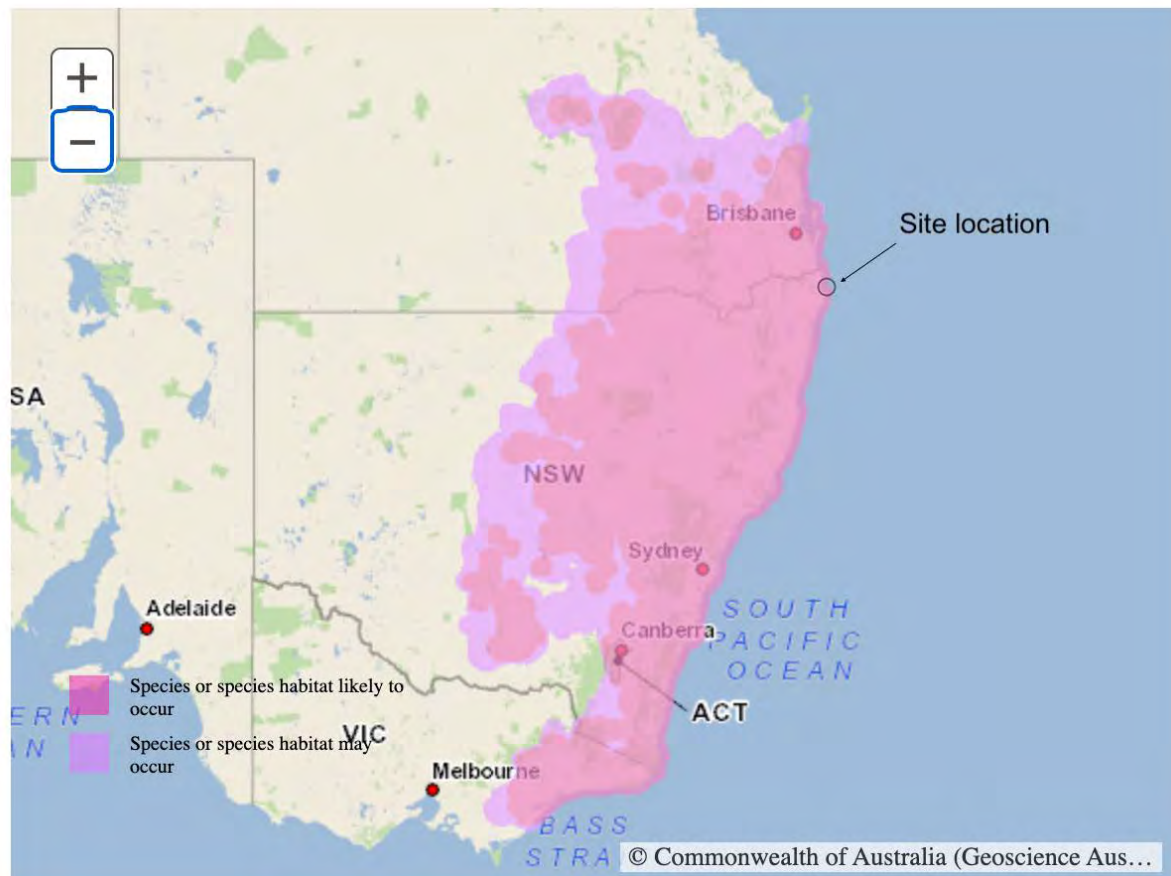


Figure 1: Species distribution map, DCCEEW 2023, with proposed development site location marked

Habitat requirements

Glossy black cockatoos have specific, complex and interconnected habitat requirements. They feed almost exclusively on the seeds of *Casuarina* and *Allocasuarina* species, with localised populations of birds relying on just one or two species across their range. Along the NSW north coast and ranges, they are known to rely chiefly on *Allocasuarina torulosa* and *Allocasuarina littoralis*, although also feed to a lesser extent on other species of she-oaks (DCCEEW, 2022; Glossy Black Conservancy, 2010). Within their range, Glossy black cockatoos are further restricted to a limited selection of “preferred feed trees”, with limited data on the characteristics which influence the suitability of particular feed trees as a food resource and bird preferences (North et. al., 2020; Pepper et. al., 2000). Glossy black cockatoos will return to the same feed trees over a long period of time and frequently exhibit predictable patterns of behaviour around known feeding, drinking, roosting and nesting resources (M. Barth, pers. comm.). Removal of single feed trees, for example can have a significant impact on a small population of the subspecies within their known range when the number and distribution of feed trees are limited or decreasing. While feeding/ foraging habitat is the main indicator of habitat requirements, drinking sites, roosting sites and nesting hollows are also of critical importance for the persistence and survival of the species over their range (DCCEEW, 2022; Hourigan, 2012).

Glossy black cockatoos require large tree hollows for nesting, usually in tall eucalypts (DCCEEW, 2023; Office of Environment and Heritage [OEH], 2008). DCCEEW Conservation Advice for the Species (2022) notes hollow requirements for Glossy Black cockatoos include features only found in large, old trees (hollows in branches >30cm in diameter, hollow entrances >15cm wide, hollows >8m from the ground) however hollows can be up to 26cm wide and 1.4m deep (OEH, 2008). Hollows of such size in eucalypt species may take many centuries to form (DCCEEW, 2022). The female lays a single egg and undertakes a relatively long breeding cycle, with the nestling entirely dependent on its parents for three months after hatching, and usually accompanying both parents thereafter

for between 12-18 months (OEH, 2008). Juveniles will continue to be fed by both parents during this period. These life cycle characteristics (long breeding period, slow replacement rate) make the Glossy Black cockatoo especially vulnerable to population decline (DCCEEW, 2022) and illustrate the importance of realistic and fit-for purpose conservation interventions.

Drinking sites and roosting sites are two additional specific habitat requirements which intersect with feeding and nesting sites, which together must be considered as an interconnected network of habitat requirements at a landscape scale. Freshwater drinking sites are essential for daily use, particularly during the breeding period, as adult birds use the water to create a paste from ingested seeds to feed their young (Glossy Black Conservancy, 2010). Additionally, birds can display a loyalty to particular roosting sites, which need to provide protection to young when clumsy and vulnerable as well as being located near other essential resources (M Barth, pers. comm, 2023).

Significant impacts on Glossy Black Cockatoo habitat

The proposed development at 15 Torakina Road, Brunswick Heads, is located centrally within the network of essential landscape resources of the known Brunswick Heads population of Glossy Black cockatoos numbering between 3-8 birds. Given low numbers of the birds across their range, this handful of birds may constitute the entirety of this localised population. There is no evidence that this population moves between the coast and ranges, nor that populations from further inland frequent these areas (M Barth, pers. comm., 2023; Barth, Cooper & Rawlins, unpublished data). The 30.2 hectare development site consists almost entirely of native vegetation, including areas of wallum heathland, swamp sclerophyll forest, paperbark swamp forest, swamp oak swamp forest, sedgeland and old growth scribbly gum woodland (Australian Wetlands Consulting [AWC], 2022; Milledge, 2011) and includes significant stands of *Allocasuarina littoralis* (black she-oak). 13 ha (43% of the site) is proposed to be completely cleared for the development, requiring complete vegetation removal, excavation and infill to 4m ASL across the site, followed by hydraulic compaction (AWC, Concept Plan Approval, 2022).

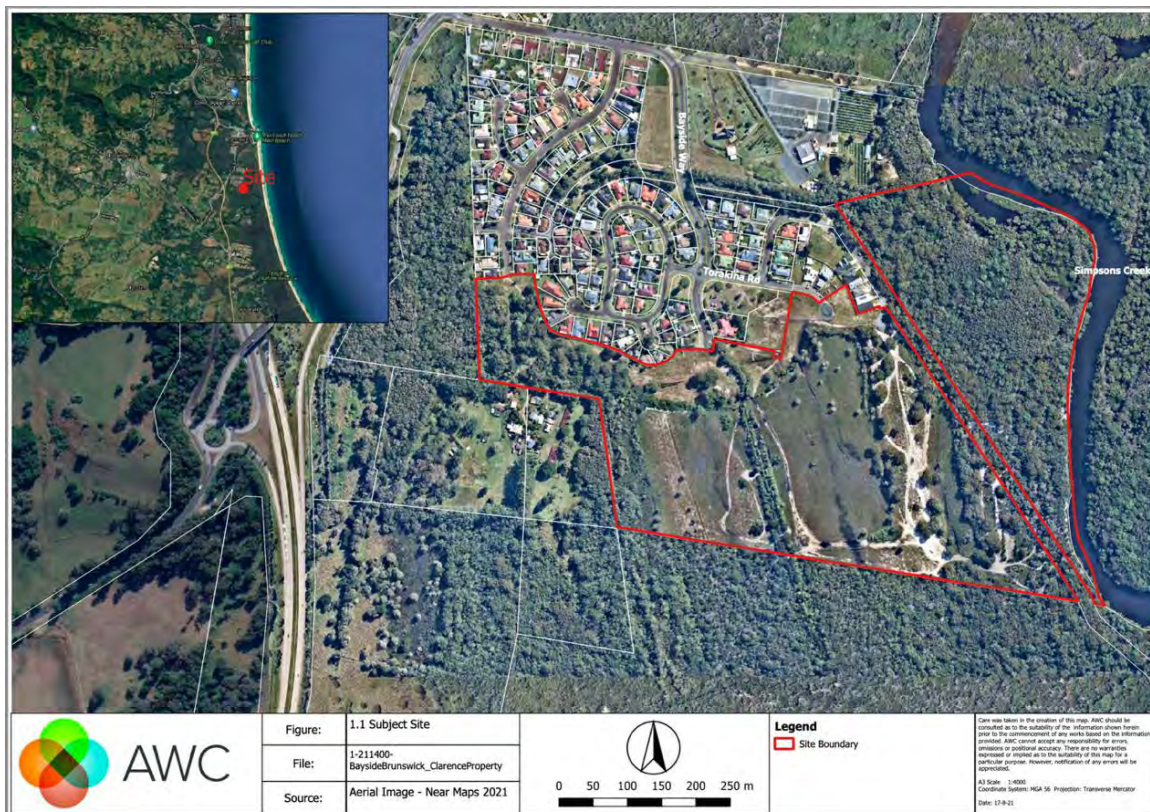


Figure 2 Proposed development site showing site boundaries and vegetation cover, AWC 2022

Three of the four essential life cycle resources for Glossy black cockatoo are found on the proposed development site and used by the population daily. These resources include several roost sites, feed trees, and drinking sites.

Glossy black cockatoo essential resource sites, 15 Torakina Road Brunswick Heads



Figure 3 Glossy Black cockatoo roosting, drinking and feeding sites in and around the development site. Note the widespread use of the site, and the areas of vegetation removal. It is likely that if the slashed vegetation was allowed to recover, utilisation of the site would increase, consistent with the Conservation Advice for the species, which recommends “protection” and “*expansion*” of habitat.”

Source: Barth, Cooper & Rawlins, Unpublished data, 2023; DCCEEW, 2022.



Figure 4 Bruns trio drinking on site, October 14, 2023
Photo: Locky Cooper / Save Wallum



Figure 5 Feeding on site, October 14, 2023
Photo Nala Morris/ Save Wallum



Figure 6 Glossy Black Cockatoo feeding on the site
November 4, 2023
Photo Mac Maderski / Save Wallum



Figure 7 Glossy black cockatoo drinking on site
November 4, 2023
Photo Mac Maderski/ Save Wallum



Figure 8 Bruns trio roosting on site, November 5, 2023.
Photo Locky Cooper/ Save Wallum



Figure 9 Adult female and juvenile "Phoenix" feeding
and roosting on site, November 5 2023
Photo Mac Maderski/ Save Wallum



Figure 10 Pair feeding onsite 2016. Photo Wren Mclean/
Save Wallum



Figure 11 Female feeding onsite October 2016. Photo
Wren Mclean/ Save Wallum



Figure 12 Juvenile feeding November 4, 2023
Photo: Mark Seiffert/ Save Wallum



Figure 13 Adult male feeding November 4, 2023
Photo: Mark Seiffert/ Save Wallum



Figure 14 Pair with juvenile female roosting,
November 2023
Photo: Mark Seiffert/ Save Wallum



Figure 15 Adult feeding juvenile female "Phoenix"
November 2023
Photo: Mark Seiffert/ Save Wallum



Figure 16 and 17 Juvenile female "Phoenix" roosting on
site, October 25 and 27, 2023.
Note fire impacts from the Tyagarah Nature Reserve
bushfire.
Photo: Mac Maderski/ Save Wallum

Significant impacts

The Vegetation Management Plan for the proposed development states: “Threatened species habitat directly impacted by the development include the Wallum froglet, Koala, and Glossy Black Cockatoo” (AWC, 2023, p14). A total of 38 Glossy Black Cockatoo “food” trees are proposed to be removed for the development, and a further 76 mature Scribbly gums (*Eucalyptus racemosa*), including many hollow-bearing trees estimated to be several centuries old. These include known roosting sites. There are also several drinking sites located along the central drain and in standing freshwater puddles after rains located within the development footprint.

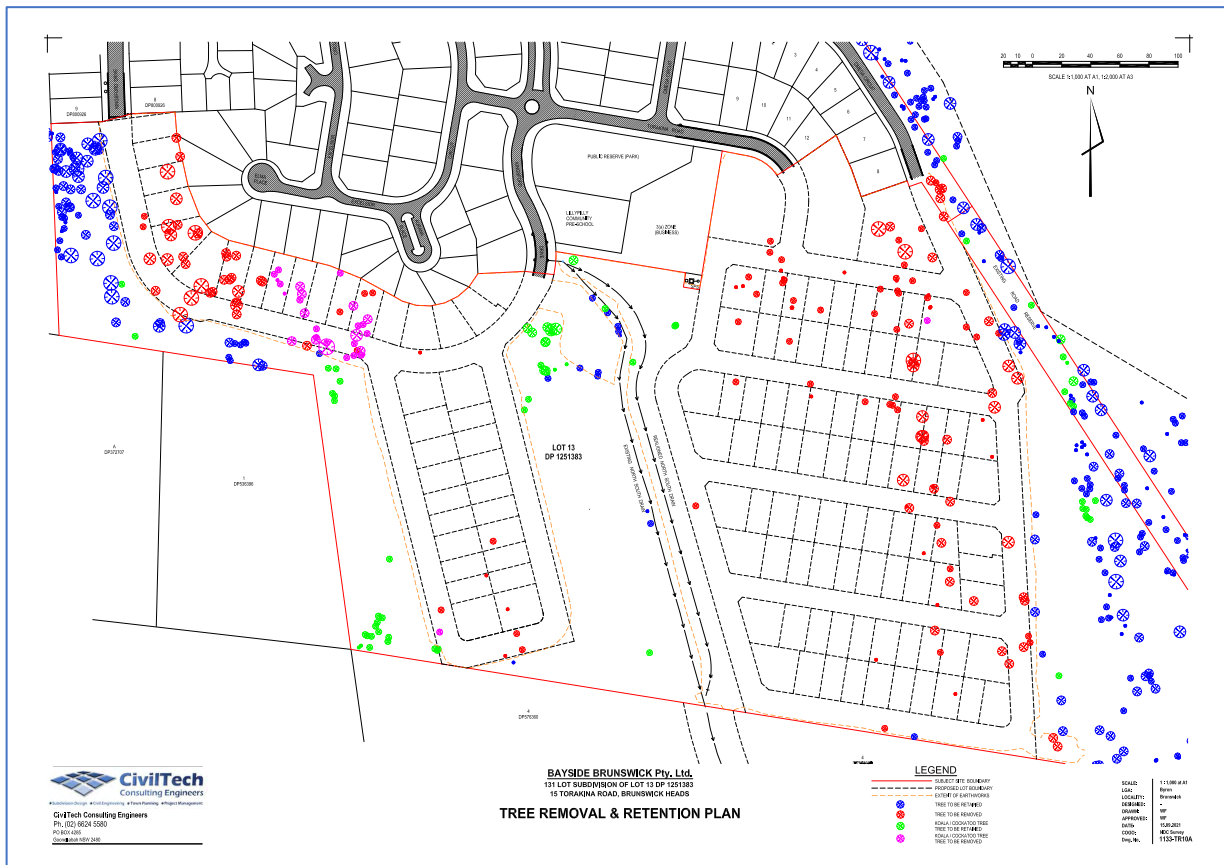


Figure 18 Tree removal and retention plan, Civiltech Consulting Engineers, AWC Report, 2022.

Proposed compensatory measures for the Glossy Black Cockatoo include:

- Planting of Glossy Black-cockatoo feed trees (Black she-oak *Allocasuarina littoralis*) at a 2:1 ratio totalling 76 Black she-oak to be planted as tube stock
- Installation of nesting boxes (AWC Revised Vegetation Management Plan, 2022)

These compensatory measures are grossly inadequate because:

- The nature of the birds’ habitual and predictable feeding patterns around existing food resources in and around the site (habitat should be preserved in-situ)
- The length of time taken for replacement trees to grow
- The inability to ensure saplings’ suitability as feed trees or potential feed trees due to the dioecious nature of the species and insufficient data on feed tree preferences by glossy black cockatoos
- The likelihood of trampling and damage to replacement trees due to their positioning besides pathways, tracks and roads

- Extreme site disturbance is likely to result in complete avoidance of the site by the known population and thus a wholesale loss of three of four essential life cycle resources, with potentially catastrophic impacts on the small local population
- Ongoing disturbance, including around compensatory habitat, from the development, including light, noise pollution etc
- Changed hydrological regimes impacting neighbouring native vegetation, including retained *Allocasuarina littoralis* stands
- No compensatory measures are proposed for the loss of roost trees or standing water drinking sites
- No specifications are provided on the nature of nesting boxes proposed as compensatory habitat.

There is currently no scientific evidence on the suitability of artificial hollows as compensatory habitat for the south-eastern Glossy black Cockatoo on mainland Australia (DCCEEW, 2022). While artificial hollows have been utilised by another subspecies of Glossy black cockatoo on Kangaroo Island, extensive (and the first targeted) deployment of artificial hollows in northern NSW over the last 18 months has resulted in no uptake by Glossy black cockatoos (Barth, Cooper & Rawlins, unpublished data; M Barth, pers. comm.). A compensatory measure cannot be fit for purpose if there is no evidence of its effectiveness for the species. All native vegetation should be retained on site and placed into conservation in perpetuity for the species.

The Federal Conservation Advice for the species states:

“The loss of large hollow-bearing trees due to land clearance and deforestation is problematic as these hollows take many centuries to form in eucalypts..... South eastern Glossy Black Cockatoos are especially vulnerable to hollow loss.... It is absolutely crucial to implement actions to prevent the loss of... large hollow-bearing trees..... [N]est boxes have not been used successfully for glossy black cockatoos on the mainland.” (DCCEEW, 2022 p12).

To meet conservation objectives under the Act, it is important to retain all existing habitat for the species, and to protect, and enhance the quality and extent of existing habitat.

Bushfire impacts on adjoining habitat, October 2023

Between October 17th and October 25th 2023 an out-of-control bushfire burned almost the entirety of the Tyagarah Nature Reserve, which borders the site to the east and south. This event significantly increased the importance of unburnt habitat on the development site in regards to its role in maintaining threatened species populations.

Figure 19 Map of habitat burnt in the Tyagarah Nature Reserve fire, October 2023, (yellow hatching) with the proposed development site shown by the white outline. Dr Andy Baker, 2023



Proposed development impacts on important local population

The site is also located **within 3km** of one of the only known Glossy Black Cockatoo nesting sites in north-eastern NSW (Barth, Cooper & Rawlins, unpublished data). The successful fledgling from that nest, “Phoenix,” narrowly escaped a hot bushfire which burnt out almost all the birds’ resources in the neighbouring Tyagarah Nature Reserve during October of 2023. “Phoenix” was observed with her parents frequently over the following weeks (October-November 2023) within and around the development site utilising feeding, drinking and roosting resources daily. It is likely that without access to this site over this time, the long-term survival of this juvenile may have been significantly compromised (M.Barth, pers. comm.)

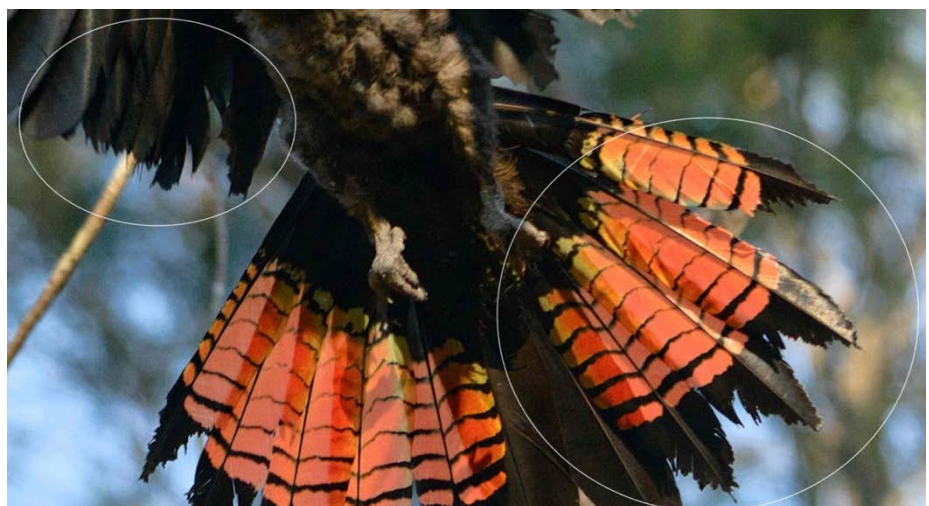


Figure 20: Juvenile “Phoenix” photographed on 25th October, 2023 at the proposed development site. Note fire impacts on feathers. Photo: M Maderski/ Save Wallum



Figure 21 (left): Juvenile “Phoenix” showing fire impacts from the Tyagarah Nature Reserve bushfire.
Photo: Mac Maderski/ Save Wallum

Figure 22 (right): Detail, “Phoenix” with damaged feathers from the Tyagarah Nature Reserve wildfire, October, 2023



Critical habitat

Given the very small number of birds in the known “Brunswick Heads” population, the significant number and interconnected nature of essential life-cycle resources located at the site, the known daily habitual use of the site by the known population, the impacts of wildfire on adjoining habitat, the proximity to a known successful nest site, and the continued impacts of urbanisation and development on surrounding glossy black cockatoo habitat, the entire site should be considered as **critical habitat for an important population**. Habitat critical to the persistence and survival of a species refers to “areas that are necessary for activities such as foraging, breeding, roosting, or dispersal” (DCCEEW, 2022). According to DCCEEW, in order for habitat to meet the statutory definition of critical habitat an area must “contain habitat that is *essential* for the conservation of a *viable population* of protected wildlife” (my emphasis added).

“Where no Recovery Plan is in force under the EPBC Act, habitat critical to the survival includes areas that are demonstrated to be necessary for a listed threatened species or ecological community:

- **for activities such as foraging, breeding, roosting, or dispersal,**
- **for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators),**
- **to maintain genetic diversity and long-term evolutionary development, or**
- **for the reintroduction of populations or recovery of the species or ecological community.”** (DCCEEW 2022)

Precautionary Principle

Currently there is no Recovery Plan under the EPBC Act (DEEWCC, 2022), therefore, the **precautionary principle must be applied to any likely or suspected impacts on the species, or where impacts are unknown or data deficient**. Further, it is critical to consider the cumulative impacts of habitat loss and degradation across the species’ range, and “actions should not be assessed in isolation and consideration must be given to future and existing activities that may impact the subspecies to ensure conservation outcomes at a landscape scale are achieved” (DCCEEW, 2022). Again, given the small number of birds in the Brunswick Heads population, and the cumulative pressure of climate change, habitat loss and degradation, including proposed housing expansion within the Byron Shire coastal fringe, the strongest possible caution should be exercised when considering any development which may lead to localised extinction of the subspecies.

Lessons from the Long-nosed potoroo – localised extinction

A case in point is the presumed localised extinction of the Long-nosed potoroo (*Potorous tridactylus tridactylus*) from the local area. While the species may still persist within Tyagarah Nature Reserve, and in and around the proposed development site, the cumulative impacts of habitat fragmentation and degradation, urban development and infrastructure, and predation by cats and foxes has resulted in a catastrophic decline of the local population (DCCEEW, 2022a; Andren, Milledge, Scotts & Smith, 2014). The Long-nosed potoroo was listed as Vulnerable under the EPBC Act in 2000, at which time the Tyagarah population numbered between 80-90 individuals (DCCEEW 2022a; Andren et al, 2014). Andren et al undertook extensive surveys across 3613 ha of likely habitat across the species’ coastal range surrounding Brunswick Heads, making recommendations that further studies be urgently undertaken, targeted conservation programs be implemented, and an up-listing of the species’ conservation status be considered (Andren et al, 2014). It was noted that heathy Scribbly gum forest, such as that which is found on the proposed development site, was

prime habitat. Cumulative and landscape-scale impacts, including geographical isolation and separation was seen as the main threat to the species (DCCEEW, 2022a) and is likely to have led to its presumed extinction. The 2020 independent review of the EPBC Act also found that cumulative impacts on, and threats to, the environment are often not well managed (Samuel, 2020). The State of the Environment 2021 report recognised the irreversible impact on Australia’s native flora and fauna of cumulative and indirect effects of multiple pressures over time and the imperative of actively ‘maintaining and re-establishing structural and functional connectivity across systems contribute to ecosystem resilience’ (Commonwealth of Australia, 2021). Many such conservation pressures and challenges are present for the south-eastern Glossy black cockatoo in the context of the proposed development. Failure to act on the published conservation advice for the species, and implement realistic, landscape-scale conservation measures with the urgency and integrity required, will likely see localised extinctions of the Glossy black cockatoo.

A second case in point is the recent removal of 5 hectares of Glossy black cockatoo habitat, including 104 feed trees at Sunshine Beach, near Noosa, Queensland, for construction of a residential aged care village (Meadows, 2022). Opposition to the proposal attracted 65,000 signatures, and a concerted community-led campaign which lasted over two years. While such projects continue to be approved in a piecemeal fashion, landscape-scale impacts on species at risk of extinction result in “death by a thousand cuts” (Dale, 2011). Importantly, a piecemeal approach to development approvals is in contravention with the conservation advice for the species which determines that assessments must be made with consideration of cumulative and broadscale impacts across a species’ range (DCCEEW, 2022). A failure to do so renders the legislation ineffective and fails to meet conservation objectives.

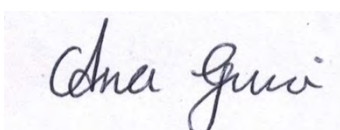
EPBC Independent review and lack of public trust

The Environment Protection Biodiversity Conservation Act 1999 has significant legislative power to protect species from extinction and halt the decline of vulnerable species. However, an Independent review of the Act in October 2020 emphasised a lack of public trust in the EPBC, citing over 30 000 contributions (DCCEEW, 2020). “The EPBC Act is broadly perceived as ineffective at protecting the environment, with a lack of clear outcomes, weak compliance and enforcement, and ineffective environmental monitoring and evaluation” (Final Report, 2020, Chapter 4, Part 1). Concurrently, the Glossy Black Cockatoo is an iconic species, acknowledged in Federal Conservation Advice as a species with a considerable public and political profile (DCCEEW, 2022).

Conclusion

In consideration of the impacts of the proposed development on the local population of Glossy black cockatoo, the development proposal should be refused. An opportunity exists for the execution of both scientific rigour and political courage. It is my professional opinion that the development should be refused for its unacceptable impact on Matters of National Environmental Significance.

Anastasia Guise, Independent Ecologist, November 17th, 2023



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