

Objection to Eden Estate Development

Eden Estates (Figure 1) is Lake Macquarie's largest land rezoning project in 10 years spanning 592 ha across the Lake Macquarie and Newcastle LGA border (Lake Macquarie City Council, 2021). Developer Johnson Property Group proposes to clear the majority of this land for residential, commercial and employment purposes with corridors of riparian and conservation land as can be seen in their structure plan (Figure 2).

Eden Estates

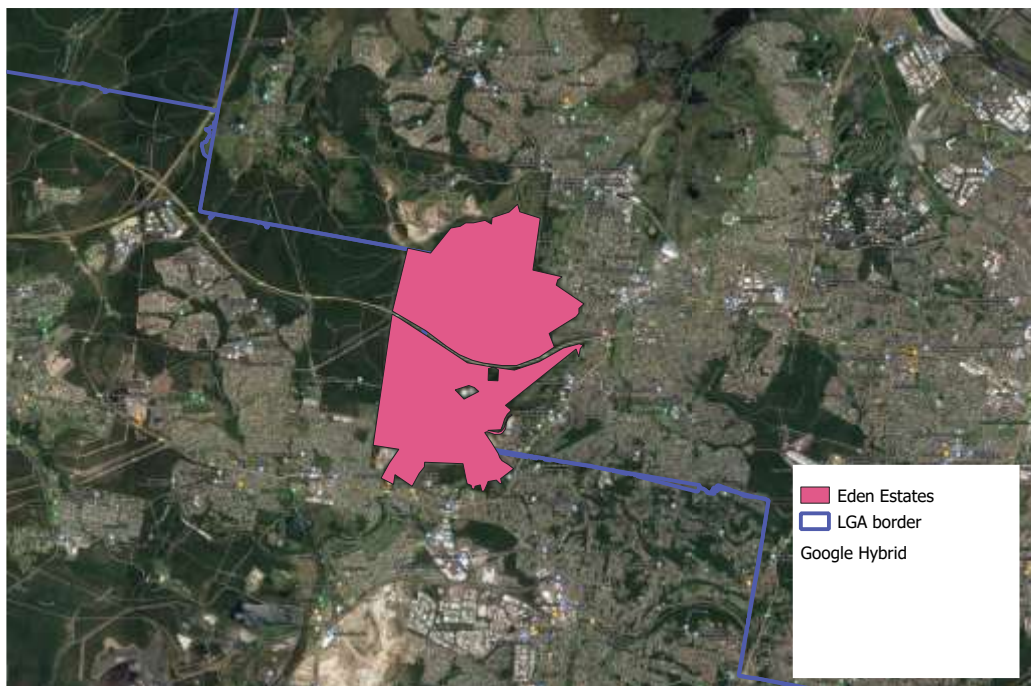


Figure 1: Eden Estates rezoning footprint

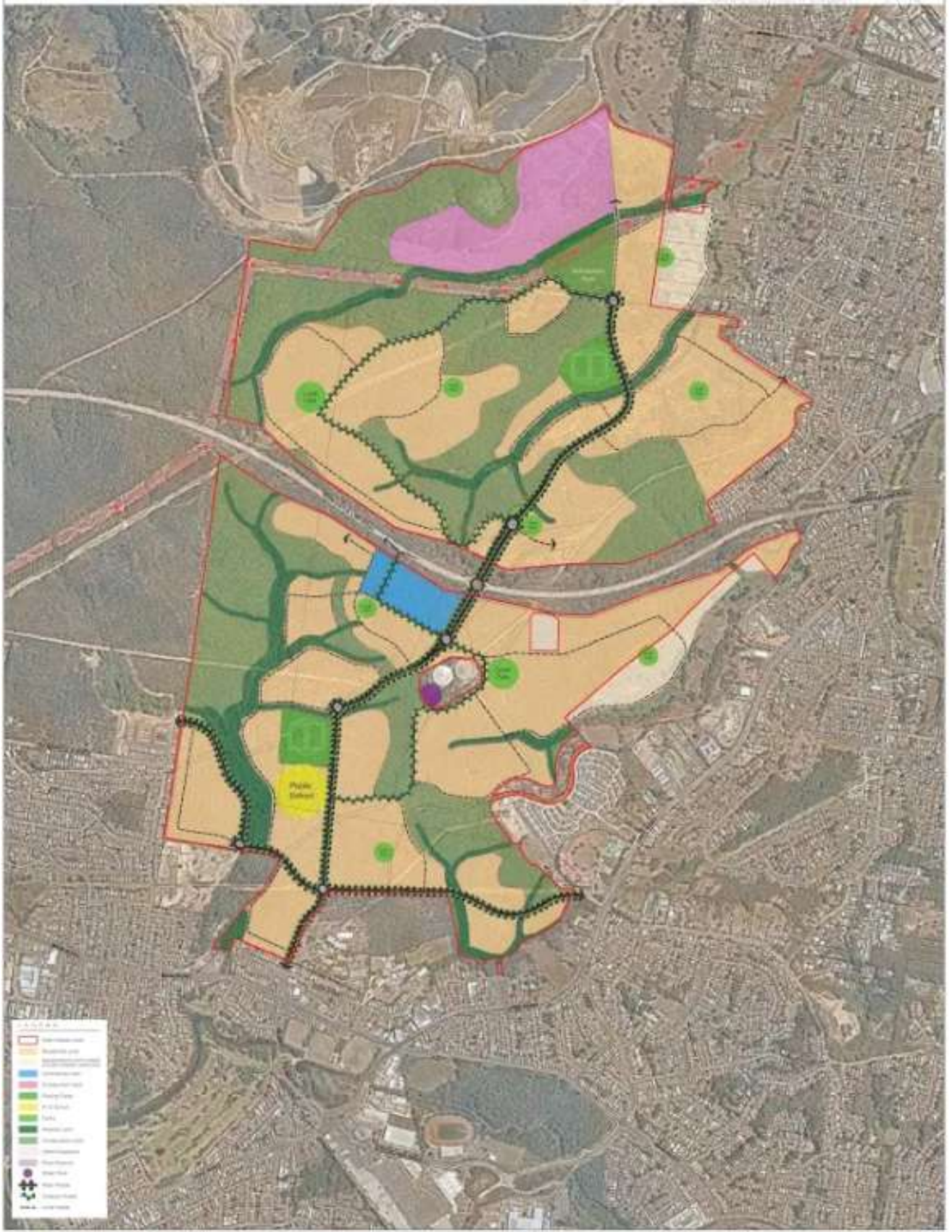


Figure 2: Eden Estates structure plan

44% of native Australian forests have been cleared since European colonisation (Australia State of the Environment 2016). Australia is the worst in the world for land mammal extinction with 10% of land mammals having become extinct (Morton 2021). For faunal extinction more broadly, Australia is fourth-worst in the world (Spraggon 2018). Land clearing is a major driver of species extinction globally and it is a trend that must be slowed if we are to conserve what biodiversity remains.

Only 10% of old growth forests remain of the original extent at the time of European colonisation (Department of Environment and Climate Change 2007). A feature of old growth forests is hollow bearing trees which many species including the squirrel glider need to survive. While the Eden Estate site does not appear to be old-growth quite yet, there are hollows present (first hand observation) providing habitat for squirrel gliders suggesting that it is a mature forest. If this forest is allowed to continue to age, the number of hollows will increase, improving the habitat for squirrel gliders.

The preliminary Biodiversity Impact Statement from AEP has listed and assessed the quality of the vegetation types present on site and additionally listed and surveyed the threatened species hypothesised to inhabit the site. Threatened species surveyed and to be surveyed are listed in Tables 1 and 2 below.

Table 1: Surveyed

	Scientific name	Common name	Conservation status	Identified on site
Fauna	<i>Burhinus grallarius</i>	Bush Stone-curlew	Endangered	N
	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Vulnerable	N
	<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	Vulnerable	Y
	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Vulnerable	N
	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Vulnerable	N
	<i>Hieraaetus morphnoides</i>	Little Eagle	Vulnerable	Y
	<i>Lathamus discolor</i>	Swift Parrot	Endangered	N
	<i>Lophoictinia isura</i>	Square-tailed Kite	Vulnerable	Y
	<i>Miniopterus australis</i>	Little Bent-winged Bat	Vulnerable	Y
	<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	Vulnerable	Y
	<i>Myotis macropus</i>	Southern Myotis	Vulnerable	Y

	<i>Ninox connivens</i>	Barking Owl	Vulnerable	N
	<i>Ninox strenua</i>	Powerful Owl	Vulnerable	Y
	<i>Pandion cristatus</i>	Eastern Osprey	Vulnerable	N
	<i>Petaurus norfolcensis</i>	Squirrel Glider	Vulnerable	Y
	<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	Vulnerable	N
	<i>Phascolarctos cinereus</i>	Koala	Vulnerable	N
	<i>Planigale maculata</i>	Common Planigale	Vulnerable	N
	<i>Pseudophryne australis</i>	Red-crowned Toadlet	Vulnerable	N
	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable	Y
	<i>Turnix maculosus</i>	Red-backed Button-quail	Vulnerable	N
	<i>Tyto novaehollandiae</i>	Masked Owl	Vulnerable	Y
	<i>Uperoleia mahonyi</i>	Mahony's Toadlet	Endangered	N
	<i>Vespadelus troughtoni</i>	Eastern Cave Bat	Vulnerable	N
Flora	<i>Acacia bynoeana</i>	Bynoe's Wattle	Endangered	N
	<i>Angophora inopina</i>	Charmhaven Apple	Vulnerable	N
	<i>Astrotricha crassifolia</i>	Thick-leaf Star-hair	Vulnerable	N
	<i>Caladenia tessellata</i>	Thick Lip Spider Orchid*	Endangered	N
	<i>Callistemon linearifolius</i>	Netted Bottle Brush	Vulnerable	Y
	<i>Cymbidium canaliculatum - endangered population</i>		Endangered Population	N
	<i>Cynanchum elegans</i>	White-flowered Wax Plant	Endangered	N
	<i>Diuris praecox</i>	Rough Doubletail	Vulnerable	N

	<i>Eucalyptus glaucina</i>	Slaty Red Gum	Vulnerable	Y
	<i>Eucalyptus parramattensis</i> subsp. <i>decadens</i>		Vulnerable	N
	<i>Genoplesium insigne</i>	Variable Midge Orchid	Critically Endangered	N
	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	Small-flower Grevillea	Vulnerable	Y
	<i>Melaleuca biconvexa</i>	Biconvex Paperbark	Vulnerable	N
	<i>Melaleuca groveana</i>	Grove's Paperbark	Vulnerable	N
	<i>Persicaria elatior</i>	Tall Knotweed	Vulnerable	N
	<i>Rhizanthella slateri</i>	Eastern Australian Underground Orchid	Vulnerable	N
	<i>Rhodamnia rubescens</i>	Scrub Turpentine	Critically Endangered	Y
	<i>Rhodomyrtus psidioides</i>	Native guava	Critically Endangered	N
	<i>Rutidosis heterogama</i>	Heath Wrinklewort	Vulnerable	N
	<i>Senna acclinis</i>	Rainforest Cassia	Endangered	N
	<i>Tetradlea glandulosa</i>		Vulnerable	N
	<i>Tetradlea juncea</i>	Black-eyed Susan	Vulnerable	Y

Table 2: To be surveyed/Survey incomplete

	Scientific name	Common name	Conservation status
Fauna	<i>Crinia tinnula</i>	Wallum Froglet	Vulnerable
	<i>Cercartetus nanus</i>	Eastern Pygmy-possum	Vulnerable

	<i>Hoplocephalus bitorquatus</i>	Pale-headed Snake	Vulnerable
	<i>Litoria aurea</i>	Green and Golden Bell Frog	Endangered
	<i>Litoria brevipalmata</i>	Green-thighed Frog	Vulnerable
	<i>Petalura gigantea</i>	Giant Dragonfly	Endangered
Flora	<i>Corunastylis sp. Charmhaven (NSW896673)</i>	<i>Corunastylis sp. Charmhaven (NSW896673)</i>	Critically Endangered
	<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	Vulnerable
	<i>Maundia triglochinoidea</i>	<i>Maundia triglochinoidea</i>	Vulnerable
	<i>Zannichellia palustris</i>	<i>Zannichellia palustris</i>	Endangered

Of the species listed in Table 1, the ones in bold were identified to potentially have Serious and Irreversible Impact status (Large Eared Pied Bat, Eastern Cave Bat, Scrub Turpentine). If the development is in fact found to have a Serious and Irreversible Impact on the species/populations, then the appropriate measures will need to be taken (State of New South Wales and Department of Planning, Industry and Environment, 2019).

Rhodamnia rubescens is of particular concern at this site as it is a critically endangered species and the population found on this site was particularly big.

Table 3 shows a list of threatened species observed at the site according to the Atlas of Living Australia (ALA) that were not included in the AEP's assessment.

Table 3: Threatened species on/near development site according to ALA

	Scientific name	Common name	Conservation status
Fauna	<i>Artamus cyanopterus</i>	Dusky Woodswallow	Vulnerable
	<i>Circus assimilis</i>	Spotted Harrier	Vulnerable
	<i>Daphoenositta chrysoptera</i>	Varied sittella	Vulnerable
	<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	Vulnerable
	<i>Petroica boodang</i>	Scarlet Robin	Vulnerable
	<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	Vulnerable
Flora	<i>Eucalyptus nicholii</i>	Narrow-leaved black peppermint	Vulnerable

The species in Table 3 have been observed in/around the development site. Most of these data points are from DPIE databases except the Dusky Woodswallow and the Spotted

Harrier (eBird) and the Varied sittella (unknown source). Surveys to determine whether these species continue to inhabit/frequent this site should be undertaken. Note that the exact locations of the DPIE data points are not as displayed on the maps as the exact localities are withheld.

ALA Threatened Species Sightings near Eden Estates Site

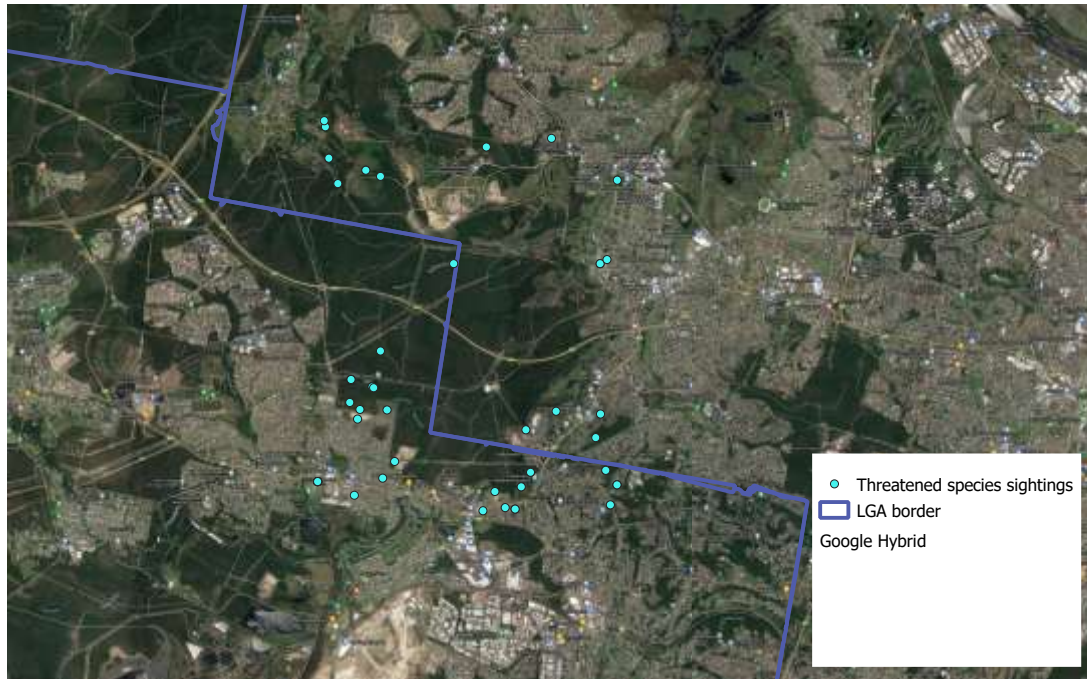


Figure 3: All threatened species on ALA

ALA Threatened Species Sightings near Eden Estates Site not listed by AEP

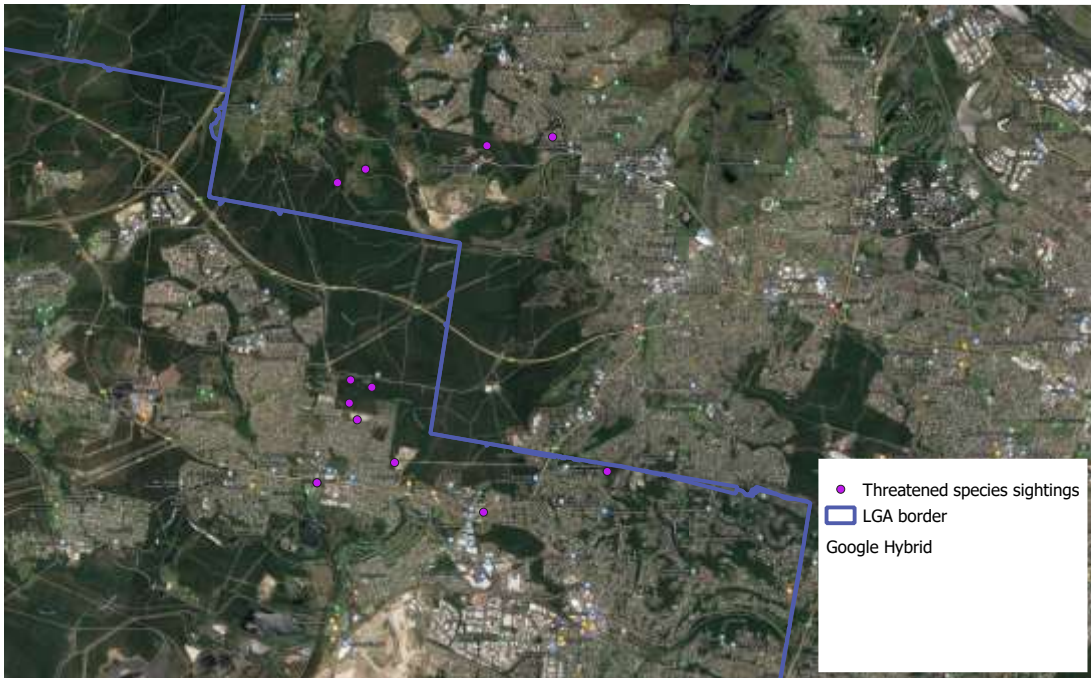


Figure 4: Threatened species on ALA not assessed by AEP

Swift Parrot Sighting on ALA

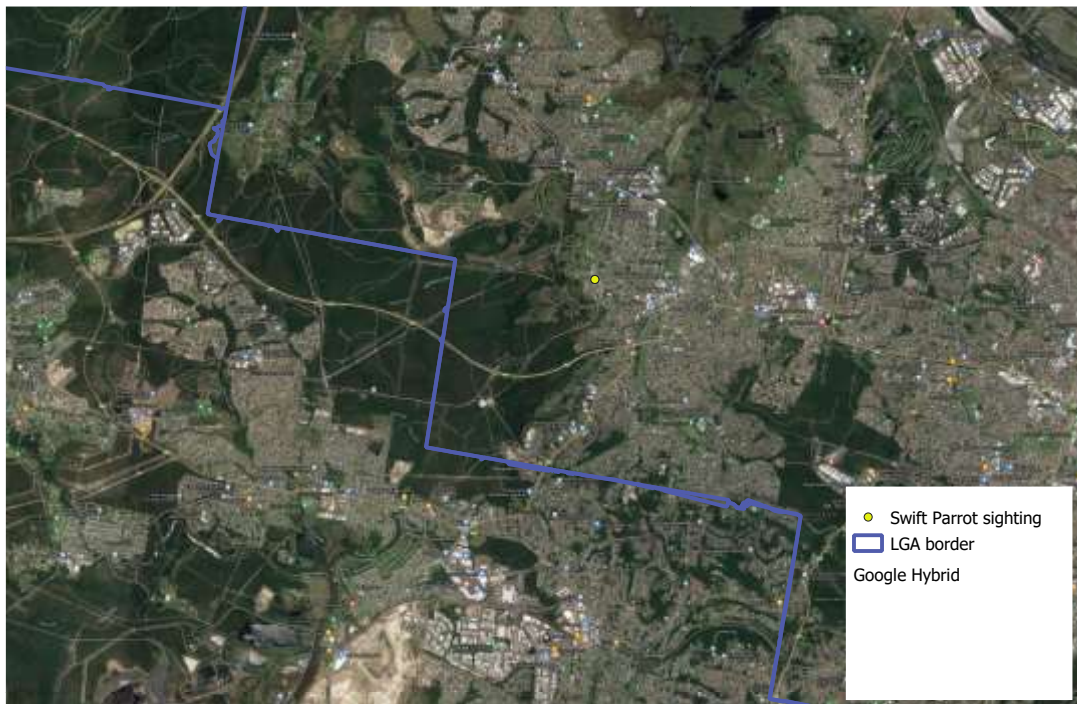


Figure 5: Swift parrot sighting

ALA (from DPIE) shows a 2003 swift parrot sighting (the exact location of the sighting is unknown as DPIE maintains the 'locality withheld'). Swift Parrots are listed as Endangered in NSW under the BC Act 2016 and Critically Endangered in Australia under the EPBC Act. The Swift Parrot was also listed as a priority species in the Threatened Species Strategy 2015 - 2020. The final report for this 5 year strategy stated that for the swift parrot population, there was "No significant change, ongoing trajectory of decline" and that "Clearing of high quality breeding and foraging habitat has been a key driver of population declines over the past 150 years" (Australian Government 2020). While AEP did not find the swift parrot in their surveys, this historical sighting suggests that bushland like this could be used on an irregular basis by migratory species passing through such as the swift parrot.

This site is clearly home to a number of different threatened species. One threatened species of particular note is the squirrel glider. This gliding mammal is somewhat of a regional icon as there is a high concentration of the vulnerable species in the area. It is estimated that the population extending across northern Central Coast and southern Lake Macquarie LGAs was the biggest in Australia (Smith 2000 cited in Economos R and McDonald A 2008). We therefore have a responsibility to look after and maintain this population.

According to the Lower Hunter Vegetation dataset (Bell 2006, Bell and Driscoll 2006, 2006a and 2012, Blue Gum Hills Vegetation 1997, EcoLogical Australia 2003, Hill 2003, Lower Hunter and Central Coast Regional Environmental Management Strategy 2003 and Technical Report 2003a, Parsons Brinckerhoff 2013) and the AEP preliminary Biodiversity Assessment (Table 3), this area contains the forest types listed below.

Table 4: PCTs in Eden Estates according to AEP

Table 1 – Plant Community Types and Conditions

PCT Number	PCT Name	Condition	Abbreviation on Figure 20201203/A
1539	Grey Myrtle sheltered gully dry rainforest in gullies of the Sydney Basin	Good	G
1543	Rusty Fig - Native Quince - Native Olive dry rainforest of the Central Hunter Valley	Good	G
1573	Sydney Blue Gum - Lilly Pilly mesic tall open forest of coastal ranges and tablelands escarpment	Good	G
1584	White Mahogany - Spotted Gum - Grey Myrtle semi-mesic shrubby open forest, central coast & lower Hunter Valley	Disturbed - regrowth (low, unstructured)	DiRLU
1584	White Mahogany - Spotted Gum - Grey Myrtle semi-mesic shrubby open forest, central coast & lower Hunter Valley	Disturbed - regrowth (tall, structured)	DiRTS
1584	White Mahogany - Spotted Gum - Grey Myrtle semi-mesic shrubby open forest, central coast & lower Hunter Valley	Good	G
1588	Grey Ironbark-Broad-leaved Mahogany-Forest Red Gum shrubby open forest, Coastal Lowlands, Central Coast	Good	G
1588	Grey Ironbark-Broad-leaved Mahogany-Forest Red Gum shrubby open forest, Coastal Lowlands, Central Coast	Disturbed - regrowth (low, unstructured)	DiRLU
1588	Grey Ironbark-Broad-leaved Mahogany-Forest Red Gum shrubby open forest, Coastal Lowlands, Central Coast	Disturbed - regrowth (tall, structured)	DiRTS
1588	Grey Ironbark-Broad-leaved Mahogany-Forest Red Gum shrubby open forest, Coastal Lowlands, Central Coast	Disturbed - underscrubbed	DiUS
1592	Spotted Gum - Red Ironbark - Grey Gum shrub - grass open forest of the Lower Hunter	Disturbed - regrowth (low, unstructured)	DiRLU
1592	Spotted Gum - Red Ironbark - Grey Gum shrub - grass open forest of the Lower Hunter	Disturbed - regrowth (tall, structured)	DiRTS

PCT Number	PCT Name	Condition	Abbreviation on Figure 20201203/A
1592	Spotted Gum - Red Ironbark - Grey Gum shrub - grass open forest of the Lower Hunter	Good	G
1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	Good	G
1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	Disturbed - regrowth (low, unstructured)	DiRLU
1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	Disturbed - regrowth (tall, structured)	DiRTS
1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	Disturbed - underscrubbed	DiUS
1621	Smooth-barked Apple open forest on coastal lowlands of the Central Coast	Good	G
1621	Smooth-barked Apple open forest on coastal lowlands of the Central Coast	Disturbed - regrowth (tall, structured)	DiRTS
1621	Smooth-barked Apple open forest on coastal lowlands of the Central Coast	Good (Riparian Peppermint Paperbark Forest)	RPPF
1737	Typha rushland	Good	G
N/A	Other	Disturbed - exotic dominance	E
N/A	Other	Disturbed - rehabilitation/plantation	R/P

Lower Hunter Vegetation dataset:

- Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast
- Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast
- Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands
- Smooth-barked Apple - Red Mahogany - Swamp Mahogany - Melaleuca sieberi heathy swamp woodland of coastal lowlands
- Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast
- Smooth-barked Apple open forest on coastal lowlands of the Central Coast
- Spotted Gum - Broad-leaved Mahogany - Grey Gum grass - shrub open forest on Coastal Lowlands of the Central Coast
- Spotted Gum - Red Ironbark - Grey Gum shrub - grass open forest of the Lower Hunter
- Sydney Blue Gum - Lilly Pilly mesic tall open forest of coastal ranges and tablelands escarpment
- White Mahogany - Turpentine moist shrubby tall open forest

Lake Macquarie performed squirrel glider habitat modelling and found that the majority of squirrel glider sightings were found in 6 communities, however, they were observed in another 30 vegetation communities (Fallding 2015). Accordingly, I arranged forest types into three categories: 1) preferred, 2) observed and 3) not observed. As can be seen in Figure 6, almost the entirety of the development site is modelled as squirrel glider habitat with the area within the Lake Macquarie LGA consisting of 'preferred' habitat and the area within the Newcastle LGA consisting of 'observed' habitat. This modelling is supported by the detection of squirrel gliders within the development site by AEP.

Squirrel Glider Habitat

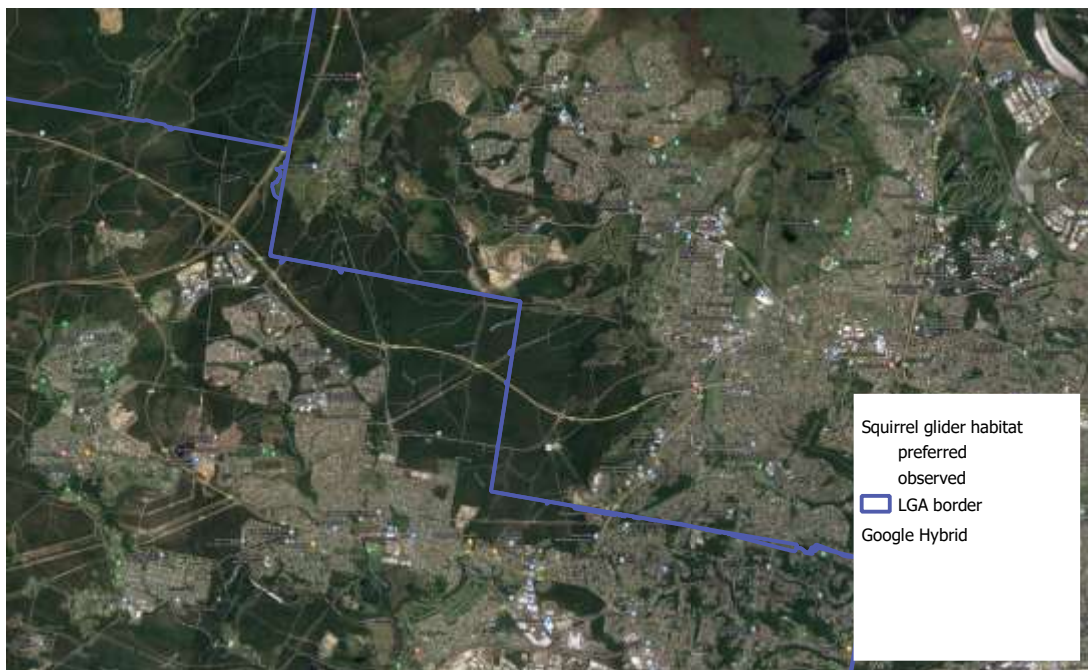


Figure 6: Squirrel glider habitat

Wildlife corridors can play a huge role in the survival of a population. When studying a site in Wyee, Economos and McDonald (2008) put together a set of Minimum Corridor Requirements for designing squirrel glider corridors which are summarised below:

- Corridors should not exceed 1 km in length without incorporating a patch of >4 ha ("minimum patch size occupied by a glider")
- Corridors should be a minimum of 100 - 150 m to ensure the vegetation community is self-sustaining. The corridor should definitely not be less than 20 m wide as they are likely to need on-going management in order for the community to be ecologically viable in the long-term.
- Tall trees or glide poles should be present at road crossings.
- A minimum of two corridors should connect Major Habitat Fragments >100 ha and larger Minor Habitat Fragments (30-100 ha) containing high density populations of squirrel gliders.

Figure 7 shows corridor mapping in the Lake Macquarie LGA the development of the Eden Estates site would reduce it from a 592 ha Major Habitat Fragment to a patchwork of smaller fragments surrounded by developments.

Squirrel gliders inhabiting the Blackbutt Nature Reserve and the development site are currently connected through wildlife corridors running through Cardiff Heights as can be seen on the (Bell et al. 2019, Bell and Driscoll 2016, Bell 2016). This corridor largely fits the criteria set out by Economos and McDonald in 2008. > 4 ha habitat fragments are connected corridors often 100 - 150 m in width (and almost always > 20 m) which are no longer than 1 km in length. There is another potential but lower quality route through the north of Garden Suburb and Stockland resulting in two entry/exit points at both Blackbutt and the development site. With the development of the Eden Estate, the length between the major habitats (i.e. the corridor) will increase by another ~ 40% (As the crow flies, Eden Estate is approximately 1.5 km in width and the current Cardiff Heights corridor is approximately 3.5 km). And if the conservation land currently planned for within the Eden Estate is not maintained, this may cut off the corridor completely. This corridor is part of a larger network of corridors connecting Glenrock in the East to the bushland containing the development site in the West. By developing Eden Estates, Newcastle LGA would be clearing a significant portion of the squirrel glider habitat within their bounds.

Wildlife Corridors

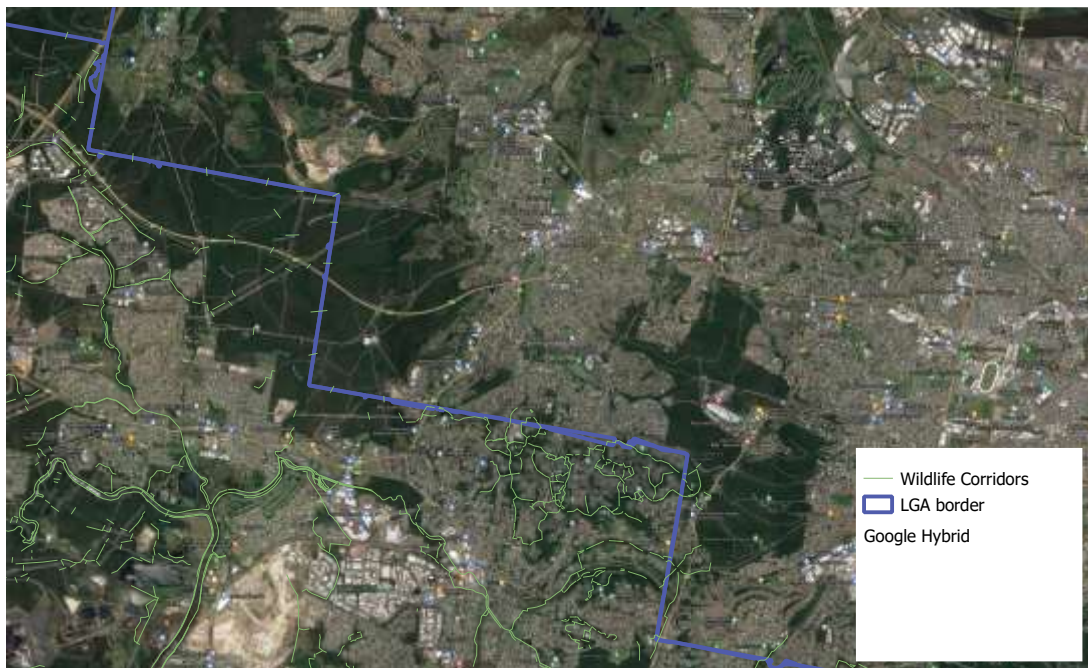


Figure 7: Wildlife corridor mapping

While some current management plans use 4 ha as the minimum size of bushland able to support a glider (Fallding 2015), a recent study in Glenrock State Conservation Area and Awabakal Nature Reserve found the average area used was 10.8 ha (Meyer et al., 2021). This was hypothesised to be due to a recent drought which meant that food sources were more scarce and squirrel gliders needed to search more widely to meet their energy and nutritional needs. With climate change causing increasingly hotter and drier summers, the trend would be towards squirrel gliders needing larger and larger areas for habitat, not smaller and smaller patches created by ongoing development.

It is well known that squirrel glider density and probability of occurrence increases with

- “Increasing remnant size
- Decreasing distance to nearest remnant
- Increasing size of nearest remnant and
- The occurrence of habitat corridors”

highlighting the importance of conserving intact, good quality bushland (Fallding and Smith 2008).

Vegetation above 100m is not considered habitat for this species (Fallding 2015). Low elevation bushland, and in NSW, coastal low elevation bushland in particular is the stronghold of the squirrel glider population (Smith 2002). Consequently, the conservation of the Eden Estate land is even more important as it fits this criteria.

Smith 2002 stated that the density of squirrel gliders varied from 0.1-1.9 ha across the range depending on habitat quality, meaning that this development (592 ha) would clear the habitat of 59.2 - 1124.8 squirrel gliders.

The Eden Estates site is built on top of ex-coal mining land owned by Glencore. Glencore also owned the Westside open cut coal mine just ~6 km to the south west of this site. In 2020, a Glencore media release stated that “Glencore's Westside open cut coal site in the New South Wales Lower Hunter has received Government certification for a section of its rehabilitated mined land, a first for the State's coal industry under contemporary mine rehabilitation criteria.” And “Our ongoing monitoring had shown that natural ecosystem functions were returning, with recent surveys identifying 69 native fauna species in the rehabilitation, including 11 threatened species. We're very pleased to have reached a point at which this area of rehabilitation has been accepted by Government as meeting completion criteria.” It would be regressive and hypocritical to boast the ecological wins of the Westside site will planning to clear the Eden Estate site (Glencore 2020).

In the 2015 - 2020 Threatened Species Strategy, 5 targets were not met, 3 were partially met and 5 were met. “Australia has 1900+ threatened species and ecological communities” (Ritchie and Tulloch 2021). Habitat conservation and a commitment to reduce land clearing is needed from all levels of government. Biodiversity should be prioritised, the Eden Estates rezoning and development should not go ahead.

REFERENCES

Atlas of Living Australia. [online] Available at: <<https://www.ala.org.au/>>

Australian Government 2020. [online] Available at:

<<https://www.environment.gov.au/system/files/resources/1546a946-c31d-4643-becc-e906384e4678/files/threatened-species-strategy-year-5-report.pdf>>

Australia State of the Environment 2016. [online] Available at:

<<https://soe.environment.gov.au/theme/land/topic/2016/regional-and-landscape-scale-pressures-land-clearing>> [Accessed June 2021].

Bell S (2006), Glenrock State Recreation Area and Awabakal Nature Reserve Vegetation Survey

Bell S & Driscoll C (2006), Vegetation mapping of Watagans National Park and Jiliby State Conservation Area Parks and Wildlife Division and Department of Environment and Conservation

Bell S & Driscoll C (2006a), Vegetation mapping of Watagans National Park and Jiliby State Conservation Area Parks and Wildlife Division and DECC

Bell S & Driscoll C (2012), Vegetation mapping of Lake Macquarie LGA: Stages 1-3, Lake Macquarie City Council

Bell, S.A.J., Driscoll, C & Lake Macquarie City Council (2019) Lake Macquarie Working Draft Vegetation Community Map 2019. Lake Macquarie City Council

Bell, S.A.J. & Driscoll, C. (2016) Volume 1: Vegetation Mapping Report: Lake Macquarie Local Government Area. Stages 1 - 6. Report to Lake Macquarie City Council. March 2016. Eastcoast Flora Survey.

Bell, S.A.J. (2016) Volume 2: Vegetation Community Profiles: Lake Macquarie Local Government Area. Working Draft v2. Unpublished DRAFT Report to Lake Macquarie City Council. March 2016. Eastcoast Flora Survey

Blue Gum Hills Vegetation, 1997

Department of Environment and Climate Change, 2007. [online] Available at:

<<https://www.epa.nsw.gov.au/-/media/F17EE758896A4709ACEBFD515B8CB223.ashx?la=en#:~:text=Old%20growth%20of%20forests%20are%20recognised,cultural%20and%20nature%20conservation%20values.&text=It%20is%20estimated%20that%20over,excessive%20fires%2C%20weeds%20and%20dieback>> [Accessed June 2021].

EcoLogical Australia 2003, An Investigation and Description of the Vegetation of the Pambalong Swamp (Pambalong Nature Reserve). NSW National Parks and Wildlife Service

Economos R and McDonald A 2008. Wye Squirrel Glider Review 2008.

Fallding, M. (2015). *Squirrel Glider Planning Management Guidelines Lake Macquarie*. Lake Macquarie City Council.

Fallding and Smith 2008. Squirrel Glider Review. Morisset Structure Plan Area.

Glencore 2020. *Westside achieves a New South Wales rehabilitation first*. <<https://www.glencore.com.au/media-and-insights/news/westside-achieves-a-nsw-rehabilitation-first>>

Hill L 2003, The Natural Vegetation of the Maitland LGA, New South Wales, Maitland

Lake Macquarie City Council. [online] Available at: <<https://www.lakemac.com.au/News-articles/Council-to-commence-with-largest-land-rezoning-in-10-years?BestBetMatch=eden%20estate%7C10e74f33-1d93-49eb-bcde-33a8ffc2501a%7C5f00a674-3457-48cf-9ef8-af3e81f9bcbf%7Cen-AU>> [Accessed June 2021].

Lower Hunter and Central Coast Regional Environmental Management Strategy 2003a, Lower Hunter and Central Coast Regional Biodiversity Conservation Strategy Technical Report 2003, Callaghan, NSW

Meyer, N., King, J., Mahony, M., Clulow, J., Beranek, C., Reedman, C., Balkenhol, N. and Hayward, M., 2021. Large area used by squirrel gliders in an urban area, uncovered using GPS telemetry. *Ecology and Evolution*, 11(12), pp.7147-7153.

Morton, A. 2021. The Guardian. *Australia confirms extinction of 13 more species, including first reptile since colonisation* [online] Available at: <<https://www.theguardian.com/science/2021/mar/03/australia-confirms-extinction-of-13-more-species-including-first-reptile-since-colonisation>> [Accessed June 2021].

Parsons Brinckerhoff (2013). Lower Hunter Vegetation Mapping Cessnock Local Government Area. Newcastle, Parsons Brinckerhoff

Ritchie E and Tulloch A 2021. *Australia's threatened species plan has failed on several counts. Without change, more extinctions are assured*. [online] Available at: <https://theconversation.com/australias-threatened-species-plan-has-failed-on-several-counts-without-change-more-extinctions-are-assured-163434?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20July%201%202021%20-%201989519531&utm_content=Latest%20from%20The%20Conversation%20for%20July%201%202021%20-%201989519531%20CID_e62358a031218a7febf5ff5c6f8895a7&utm_source=campaign_monitor&utm_term=Australias%20threatened%20species%20plan%20has%20failed%20on%20several%20counts%20Without%20change%20more%20extinctions%20are%20assured&fbclid=IwAR1ywclArGImQvPw60VreLexzGrU-WnN9vG3BnvwqEYtmlQucNP_ta0Pjhw> [Accessed June 2021].

Smith, A (2002). *Squirrel Glider (Petaurus norfolcensis) Conservation Management Plan: Wyong Shire*. [online] Available at: <<https://cdn.centralcoast.nsw.gov.au/sites/default/files/Squirrel-Glider-Conservation-Management-Plan-Wyong-Shire.pdf>>

Spraggon, B., 2018. [online] Available at: <<https://www.abc.net.au/news/2018-07-20/australia-fourth-on-animal-extinction-list/10002380?nw=0>> [Accessed 20 May 2021].

State of New South Wales and Department of Planning, Industry and Environment 2019.
Guidance to assist a decisionmaker to determine a serious and irreversible impact. [online]
Available at: <<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/guidance-decision-makers-determine-serious-irreversible-impact-190511.pdf>>