Attachment C: Section 3.2.1

Describe the flora and fauna within the affected area and attach any investigation of surveys if applicable.

Habitat assessments were conducted across the project area by WolfPeak ecologists between 2021 and 2024. These habitat assessments included marking up of all Hollow-bearing Trees (HBTs), all Koala Food Trees (KFTs) listed under the Area 13 Koala Plan of Management, aquatic habitat, Flying Fox camps and any other fauna or flora habitat features. Within the project area 57 HBTs were recorded and of these, eight HBTs are proposed to be removed with the remaining 49 proposed for retention. Within the disturbance footprint a maximum of 238 KFTs are proposed to be removed. An additional 20 KFTs are located within the tree protection zone of the disturbance footprint where they will be retained. No Flying Fox camps were recorded within or surrounding the project area. The results of these surveys are provided in Attachment 'Att A_Figures', Figure 10, Page 11. The habitat assessment found that there is potential for fauna and flora species listed under the EPBC Act to occur within the disturbance footprint due to the presence of potential suitable habitat in the form of remnant vegetation comprising HBTs, KFTs and other foraging resources. Based on the habitat assessment, a Likelihood of Occurrence Assessment was undertaken on EPBC Act listed species and ecological communities. Thhis Assessment is provided in Attachment 'Att D_Likelihood of occurrence assessment'. The habitat surveys and likelihood of occurrence assessment identified potential habitat for the following EPBC Act listed species:

- Fork-tailed Swift (*Apus pacificus*)
- Grey-headed Flying-fox (*Pteropus poliocephalus*)
- Koala (*Phascolarctos cinereus*)
- Latham's Snipe (*Gallinago hardwickii*)
- Pacific Golden Plover (*Pluvialis fulva)*
- Rufous Fantail (*Rhipidura rufifrons*)
- South-eastern Glossy Black-cockatoo (*Calyptorhynchus lathami lathami*)
- Swift Parrot (*Lathamus discolor*)
- White-throated Needletail (*Hirundapus caudacutus*)
- *Melaleuca biconvexa* (Biconvex Paperbark)
- *Rhodamnia rubescens* (Scrub Turpentine)
- *Rhodomyrtus psidioides* (Native Guava)

The following targeted flora and fauna surveys have been undertaken by WolfPeak ecologists:

Targeted flora surveys (December 2021, September 2023 and July 2024)

Targeted flora surveys were undertaken by WolfPeak ecologists across Summer 2021,Spring 2023 and Winter 2024. Targeted flora surveys involved undertaking parallel traverses across the disturbance footprint. The traverses are a set distance apart depending on the life form and type of vegetation and cover the entire extent of potential habitat for each target flora species. Targeted flora survey effort is demonstrated in Attachment 'Att A_Figures', Figure 11, page 12. No threatened flora species were detected within the disturbance footprint during targeted flora surveys. Multiple plants of *Melaleuca biconvexa* (Biconvex Paperbark), listed as Vulnerable under the EPBC Act, *Rhodamnia rubescens* (Scrub Turpentine), listed as Critically Endangered under the EPBC Act, and *Rhodomyrtus psidioides* (Native Guava), listed as Critically Endangered under the EPBC Act, were recorded within the project area outside of the disturbance footprint. The *Melaleuca biconvexa* individuals were recorded in retained vegetation in the north and south-west of the project area. The *Rhodamnia rubescens* individuals were recorded on the western border of proposed large lot 88 along the edge of an existing vehicle track. The

Rhodomyrtus psidioides individuals were recorded in retained vegetation within the northern portion of proposed large lot 88.
All *Melaleuca biconvexa, Rhodamnia rubescens* and *Rhodomyrtus psidioides* individuals are proposed to be retained. The location of threatened flora recorded within the project area is provided in Attachment 'Att A_Figures', Figure 13, page 14.

Targeted amphibian surveys (November 2021 – January 2022)

Targeted aural visual surveys were conducted across suitable habitat comprising wet areas within the project area. Following rainfall events between November 2021 and January 2022, four aural visual surveys were conducted by WolfPeak ecologists. Aural visual surveys involved spotlighting along suitable habitat interspersed with call playback and periods of quiet listening. No threatened amphibian species were detected within the project area during targeted survey.

Herpetofauna survey (November 2022)

Herpetofauna searches involved the lifting and disturbing of debris, fallen timber, rocks, logs, dense vegetation and leaf litter. Searches aimed to locate any reptiles and/or frogs utilising the structures for shelter or basking. A total of four herpetofauna searches were undertaken over the entirety of the project area for a period of 30 minutes each. Herpetofauna survey effort is demonstrated in Attachment 'Att A_Figures', Figure 12, page 13.

Targeted microbat survey (November 2021)

No caves, clifflines or old mine shafts that could be used as roosting habitat for cave-dwelling microbats occur within the project area. Targeted microbat survey involved deployment of one ultrasonic detector (Anabat Swift) along the edge of a potential microbat corridor for a period of nine consecutive nights in November 2021. Targeted microbat survey effort is demonstrated in Attachment 'Att A_Figures', Figure 12, page 13.

Analysis of ultrasonic data did not detect any EPBC Act listed microbats.

Diurnal avifauna surveys (May 2021 – April 2023)
A total of six passive diurnal bird surveys were conducted within the project area. Bird surveys involved active binocular searches and passive recording of bird calls whilst walking around the extent of the project area. Surveys were undertaken for a minimum of 30 minutes per survey. All bird species observed or heard calling during survey were recorded.

No EPBC Act listed bird species have been detected within the disturbance footprint.

Nocturnal avifauna surveys (August 2021 – June 2023)

Nocturnal avifauna surveys involved spotlighting, call playback and stag watching.

A total of 11 spotlighting surveys targeting nocturnal birds were conducted within the project area. Surveys were undertaken on foot through the project area targeting forest owls in areas of dense vegetation to flush out ground-dwelling bird species such as quails. Any birds that were observed or heard calling were recorded.

A total of 13 stag watch surveys were completed within the project area. Trees containing large owl-suitable hollows were observed continuously from 30 minutes prior to sunset and 60 minutes after sunset to observe species that may utilise the hollow.

A total of six call playback surveys targeting nocturnal birds were completed within the project area. Call playback surveys involved broadcasting recorded fauna calls from a fixed survey point into vegetation on the subject land. Calls were played at a volume approximating the natural intensity of each species through a portable 30W megaphone. The methodology involved an initial period of listening and spotlighting; followed by playback of the calls simulating a natural pattern. This was followed by ten minutes of listening and 10-15 minutes of spotlighting for fauna attracted by the calls (but not responding vocally), within a 100-metre radius of the playback point.

Nocturnal avifauna surveys did not detect any EPBC Act listed nocturnal birds.

Targeted terrestrial and arboreal mammal survey (August 2021 – June 2023)

Arboreal and terrestrial mammal surveys involved baited Infrared (IR) remote cameras, pitfall trapping, spotlighting, call playback, hair tubes and Koala Spot Assessment Technique (SAT) across the project area. Targeted mammal survey effort is demonstrated in Attachment 'Att A_Figures', Figure 13, page 14.

Targeted survey using IR remote cameras were undertaken in November 2021. A total of 10 remote cameras were deployed. Of these, five were set to target terrestrial mammals and five set to target arboreal mammals. Cameras were deployed for 15 nights. A total of 10 deployments across 150 trap nights (75 arboreal trap nights and 75 terrestrial trap nights) were undertaken across the project area. Terrestrial cameras were baited with raw chicken necks and arboreal cameras were baited with a mixture of oats, peanut butter, honey and vanilla essence.

Pitfall trapping survey was used to targeted small terrestrial mammals within the project area. Pitfall trap surveys were undertaken by WolfPeak ecologists in December 2022. Two pitfall trap lines were deployed for 4 nights, equating to a total of 24 trap nights. Pitfall trap lines consisted of three pitfalls separated by 10 m of polyethylene dampcourse covering a total length of 30 m.

Spotlighting was conducted over 16 nights between August 2021 to June 2023. Spotlighting surveys involved traversing the project area with a handheld spotlight to pickup fauna eyeshine. A total of 16 spotlighting surveys were conducted over the project area. Each survey was conducted for a minimum of two hours by a WolfPeak ecologist. Spotlighting targeted the branches and trunks of canopy and understorey trees whilst periodically scanning the ground. All species observed and heard calling from within the project area were recorded.

Hair tube surveys were conducted over the project area in November 2021, targeting small to medium mammals. These surveys involved the deployment of two hair tube lines, each containing ten baited hair tubes, evenly spaced along a line of approximately 100 metres. In each hair tube line, five hair tubes were positioned on the ground to target terrestrial species. The remaining five hair tubes were affixed to tree trunks at a height of approximately three metres to target arboreal species. Hair tubes were deployed for a total of 15 nights and were baited with a mixture of oats, peanut butter, honey and vanilla essence. After seven nights of deployment each hair tube was additionally sprayed with a honey water mixture. Hair samples collected during the surveys were forwarded to a specialist hair analyst, Trace Ecology, for analysis to species level. No EPBC Act listed species were identified from hair samples.

A total of six call playback surveys targeting Koala and Squirrel Glider were completed in the project area between August 2021 to June 2023.

Koala Spot Assessment Technique (SAT) surveys were undertaken by two WolfPeak ecologists in August – September 2021. A total of eight Koala SATs were undertaken within the project area. Multiple Koala scats were recorded under a single tree during SAT surveys. Additionally, two Koala scats were incidentally recorded during opportunistic scat searches and scratch marks were observed on the occasional tree throughout the project area. A review of the Area 13 KPoM was undertaken in 2023 by Port Macquarie Hastings Council. The 2023 KPOM review included surveys using a Koala sniffer dog team in Summer 2022. Surveys were undertaken across the project area with a detector dog and handler. The surveys were undertaken in the northern portion of the project area, largely around the edges of the disturbance footprint. The surveys recorded one Koala scat within the area proposed for retention (proposed large lot 88). Locations of Koala scats are shown in Attachment 'Att A_Figures', Figure 16, page 17. No Koala scats were identified within the disturbance footprint. Koala is listed as Endangered under both the EPBC Act and BC Act.

Targeted Pterygota surveys – December 2022 – June 2023

A total of ten dedicated Pterygota surveys were conducted throughout the project area. Surveys involved area searches on foot, with a hand-held butterfly net to aid Pterygote identification. Surveys were conducted for a period of 30 minutes each and opportunistically throughout the course of the survey period, targeting presence of the Laced Fritillary (*Argynnis hyperbius*), listed as Endangered under the BC Act and Critically Endangered under the EPBC Act, and Black Grass-dart Butterfly (*Ocybadistes knightorum*) listed as Endangered under the BC Act and not listed under the EPBC Act.

No EPBC Act listed Pterygota species were identified during surveys.

In summary, the following EPBC Act listed species have been detected within the project area during field survey:

- Grey-headed Flying Fox (*Pteropus poliocephalus*)
- Koala (*Phascolarctos cinereus*)
- *Melaleuca biconvexa* (Biconvex Paperbark)
- *Rhodamnia rubescens* (Scrub Turpentine)
- *Rhodomyrtus psidioides* (Native Guava)

The observation, or evidence of these species were all identified outside of the disturbance footprint. The locations of threatened species are provided in Attachment 'Att A_Figures', Figure 13, page 14.