

19 May 2020

Our ref: 19SUT - 13826

TRN Group
54 Barrow Road
Spring Farm
NSW 2570

Attention: Luke McLachlan

Dear Luke,

Lots 100, 101, 102 and 104 DP 1237882, Marsh Road, Warradale Road & Government Road SILVERDALE.

Eco Logical Australia Pty Ltd (ELA) was engaged by TRN Group to supervise the clearance undertaken as a part of the subdivision adjacent to Warradale Rd, Silverdale Rd and Government Rd, Silverdale. Supervision of clearance was required under the Wollondilly Shire Council development consent conditions (010.2014.00000675.001) and the associated Construction Environmental Management Plan (CEMP; report no. H180518 RP1).

Permits and Licences

ELA holds a current Animal Ethics Permit from the Department of Industry and Investment and a Biodiversity Conservation Licence under Part 2, Division 3 of the *Biodiversity Conservation Act 2016*. Copies of the relevant permits and licenses can be provided if required.

Methodology

Eco Logical Australia (ELA) ecologists Cameron Crawford, Julia Ryeland and Grant King were present between the 12 April and the 07 May 2020 to supervise clearance works at the Current Subdivision Site, Future Subdivision Site and Industrial Site (herein referred to collectively as subject site). The methodology used complies with the TRN Group CEMP, Wollondilly Shire Council consent conditions and the ELA Pre-clearing and Clearing Supervision Standard Operating Procedures. The methodology is summarised in attachment 1.

Summary of key results

During preclearance, ecologists on site identified 58 habitat trees in the subject site, 32 of which were in the Current Subdivision Site, 13 in the Future Subdivision Site and 13 in the Industrial Site. An ecologist was on site for the entirety of the clearance works (27 days), including clearance of the

understory and habitat trees. During clearance, five species of reptiles (9 individuals in total) and one species of frog (2 individuals) were found and relocated, uninjured to the BioBank site. One tree contained sugar gliders (*Petaurus breviceps*), which were injured during clearance. These animals were taken to be seen to by a veterinarian but died whilst at the vet clinic. No species found are listed as threatened in New South Wales or federally. One Common Wombat (*Vombatus ursinus*) burrow and one Glider feed tree were also removed during the clearance of the Current Subdivision Site, with no animals found in either. No Koalas or Cumberland Plain Land Snails were found in the subject site during the clearance works, with one CPLS shell was relocated from the site. The vegetation from two dams was removed, with the dams not yet dewatered. The full findings can be found in the report attached.

If you have any questions about this letter, please do not hesitate to contact me on 8536 8611.

Regards,

A handwritten signature in black ink, appearing to read 'Julia Ryeland', enclosed within a hand-drawn oval.

Julia Ryeland
Ecologist

Attachment 1: Reporting of supervised clearance at Lots 100, 101, 102 and 104 DP 1237882, Marsh Road, Warradale Road & Government Road SILVERDALE.

Methods

Habitat trees

All trees were inspected before felling, with each hollow or nest inspected for the presence of fauna from the base of the tree. Once hollows and nests were checked, the trees were felled using an excavator. The operator was asked to tap gently on the tree twice with the bucket of the excavator, with approximately a minute between each tap. Once an additional minute had passed and no animals were observed on or near the tree, it was then felled by the excavator using the 'slow drop method'. Once the tree was felled, it was inspected on the ground for presence of fauna or active nests. Any present fauna would be relocated or taken to either a veterinary clinic or wildlife care.

Cumberland Plain Land Snail

Coarse woody debris (CWD) and urban refuse that could not be manually lifted during the pre-clearance works was searched through to locate any present CPLS prior to clearance works. Regular inspections were also conducted during the clearance works. Any individuals identified were relocated to the nearest available area within the BioBank site, along with appropriate material. These surveys were conducted throughout the subject site.

Wombat Burrow

The wombat burrow was progressively excavated with the use of a small excavator bucket and shovel from the entrance to the termination of the burrow. The burrow was inspected before, during and after each scoop was removed with the use of a torch and/or burrow scope. The ecologist would excavate the burrow by hand if the wombat could be observed.

Dams

An ecologist was present to supervise the removal of aquatic vegetation from both dams. This vegetation was piled adjacent to the dams after excavation and remained in place for two days, until it was completely dry, to encourage any potential semi-aquatic fauna to relocate from the material prior to disposal.

Koala

The area to be cleared was thoroughly inspected immediately prior to and throughout the clearance works. The location of any Koala was recorded and the area surrounding the inhabited tree cordoned off with red and white tape to prevent any further disturbance to the individual. The radius of cordoned area was to be twice the height of the largest tree adjacent to the tree in which the Koala is located or 20 m (whichever is larger). This vegetation was not to be cleared until the Koala has self-relocated to an area outside of the clearance footprint.

Understorey clearance

All understorey was inspected before removal and after removal, for any present fauna. Any present fauna would be relocated or taken to either a veterinary clinic or wildlife care. Course woody debris, bush rock and hollow logs, where feasible, were moved to the BioBank site to conserve habitat for ground dwelling fauna.

The location of habitat trees and habitat features inspected are shown in figures 1 to 4.

Results

Habitat trees

All habitat trees ($N = 58$) were inspected by the ecologist prior, during and after felling. Two trees (trees 36 and 38) identified as habitat trees during the pre-clearance assessment were retained as they were outside of the clearance footprint. Tree 42 contained two duck eggs, believed to be that of the Australian wood duck (*Chenonetta jubata*). These were identified as old eggs as they were located beneath eggshells, baby duck feathers, and duck scats. However, these eggs were relocated in a disused nest in the BioBank site as a precaution. Supervision outcomes for each tree are summarised in Table 1.

Sugar gliders (*Petaurus breviceps*), two females and one male, were injured during the clearance of tree 33. The animals were found inside a hollow once the tree had been felled using the slow fell method (as per approved CEMP methodology). The animals were inspected for injury and when injury was confirmed, they were placed together in a calico bag and transported by the ELA ecologist immediately to Mulgoa Veterinary Clinic for care. All clearance was ceased whilst the ecologist was off site. The ecologist contacted the clinic on the following day and was notified that all individuals were deceased, likely due to internal bleeding.

An additional glider feeder tree was identified, with gnawed incisions noted in the bark of the trunk of the tree. No animals were found within the tree during clearance (location shown in Figure 5).

All habitat trees and the fauna found within them are listed in Table 1 and shown in Figure 5.

Cumberland Plain Land Snails

One Cumberland Plain Land Snail shell was found in the future subdivision site (Figure 4 & 5) under a large fallen tree that could not be moved during the pre-clearance works. The shell was moved into the BioBank site. No live CPLS individuals or any other evidence of the presence of CPLS were found during the clearance works.

Wombat Burrows

The Wombat burrow identified during the pre-clearance was cordoned off and the burrow blocked whilst the areas adjacent to the cordoned area were cleared. The burrow was then opened, with sticks and bark gently overlaid on the burrow opening, which if move, would provide a signal for continued use. The material remained unmoved for three weeks, and as such, the burrow was deemed inactive and the area previously cordoned was cleared. Once the vegetation was cleared, the ecologist supervised the burrow excavation which was conducted progressively from entrance to termination with the use

of a small excavator bucket. The burrow had no active signs of use, for example the presence of fresh diggings, scats, fur or any animals. The location is shown in Figure 5.

Dams

Two dams were found during the dam clearance works. The aquatic vegetation was removed from both dams and piled within 2 m of the dam walls. The vegetation and sediment were then allowed to sit until the material was completely dry to encourage potential semi-aquatic fauna to relocate to nearby areas of habitat. No animals were sighted during the clearance of dam vegetation. Dams have not yet been dewatered, and an ecologist should be on site during this process in case any animals still reside.

Koalas

No koalas were observed during the clearance works.

Understorey clearance

A Striped Snake-eyed Skink (*Cryptoblepharus virgatus*), Eastern Bearded Dragon (*Pogona barbata*), Common Garden Skink (*Lampropholis guichenoti*), Delicate Skink (*Lampropholis delicata*) and a Jacky Dragon (*Amphibolurus muricatus*) were observed during the clearance works. These individuals were captured or encouraged to self-relocate into the BioBank area. The location is shown in Figure 5 of release sites.

The findings for dams, understory vegetation and the wombat burrow are summarised in Table 2. No species found are listed as threatened in New South Wales or federally.

Table 1: Results of clearance of habitat trees

Habitat Number	Species	Habitat Type	Sizes	Potential Fauna	Fauna present	Fauna Outcome
Current Subdivision Site (green polygon)						
1	<i>Corymbia gummifera</i>	Glider feed tree	-	-	No fauna present	-
2	Stag	Loose bark/Cracks	1x 0-5 cm	Frog/Microbat	No fauna present	-
3	<i>Eucalyptus eugenioides</i>	Hollow	1x 10-15 cm	Gilder/Possum	Striped Snake-eyed Skink	Relocated by ELA to BioBank site
4	Stag	Cracks	1x 0-5 cm	Frog/Microbat	No fauna present	-
5	<i>Corymbia gummifera</i>	Hollow	1x 10-15 cm	Gilder/Possum	No fauna present	-
6	<i>Eucalyptus crebra</i>	Hollow	1x 0-5 cm	Frog/Microbat	No fauna present	-
7	<i>Eucalyptus punctata</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-
8	<i>Eucalyptus crebra</i>	Small nest	1x 5-10 cm	Bird /Microbat	2x Striped Snake-eyed Skinks	Relocated by ELA to BioBank site
9	<i>Eucalyptus crebra</i>	Cracks	1x 5-10 cm	Frog/Microbat	Striped Snake-eyed Skinks	Relocated by ELA to BioBank site
10	Stag	Cracks	1x 5-10 cm	Bird /Microbat	No fauna present	-
11	<i>Eucalyptus eugenioides</i>	Hollow	1x 10-15 cm	Gilder/Possum	No fauna present	-
12	Stag	Hollow	1x 15-20 cm	Gilder/Possum	No fauna present	-
13	<i>Eucalyptus eugenioides</i>	Hollow	1x 15-20 cm	Gilder/Possum	No fauna present	-
14	<i>Eucalyptus pilularis</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-
15	<i>Angophora costata</i>	Hollow	1x 15-20 cm	Gilder/Possum	No fauna present	-
16	<i>Corymbia gummifera</i>	Small nest	1x 5-10 cm	Bird /Microbat	No fauna present	-
17	<i>Corymbia gummifera</i>	Hollow	1x 15-20 cm	Gilder/Possum	No fauna present	-
18	<i>Corymbia eximia</i>	2 Hollows	1x 15-20 cm	Gilder/Possum	No fauna present	-

Habitat Number	Species	Habitat Type	Sizes	Potential Fauna	Fauna present	Fauna Outcome
19	<i>Angophora costata</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-
20	<i>Eucalyptus eugenioides</i>	Medium nest	1x 15-20 cm	Gilder/Possum	No fauna present	-
21	Common Wombat	Burrow	-	Wombat	No fauna present	-
22	<i>Eucalyptus eugenioides</i>	Hollow	1x 10-15 cm	Gilder/Possum	No fauna present	-
23	<i>Corymbia gummifera</i>	Hollow	1x 5-10 cm	Bird/Microbat	No fauna present	-
24	<i>Corymbia eximia</i>	Hollow	1x 5-10 cm	Bird/Microbat	No fauna present	-
25	<i>Eucalyptus eugenioides</i>	Hollow	1x 5-10 cm	Bird/Microbat	No fauna present	-
26	<i>Corymbia gummifera</i>	Hollow	1x 5-10 cm	Bird/Microbat	No fauna present	-
27	<i>Eucalyptus tereticornis</i>	2 Hollows	2x 10-15 cm	Glider, Possum	No fauna present	-
28	<i>Corymbia eximia</i>	4 Hollows	4x 0-5 cm	Frog/Microbat	No fauna present	-
29	<i>Angophora costata</i>	2 Hollows	2x 5-10 cm	Bird/Microbat	No fauna present	-
30	<i>Angophora costata</i>	2 Hollows	2x 0-5 cm	Frog/Microbat	No fauna present	-
31	Stag	Hollow	1x 20-25 cm	Glider, Possum	Striped Snake-eyed Skinks	Relocated by ELA to BioBank site
32	Stag	Hollow	1x 0-5 cm	Frog/Microbat	No fauna present	-
Future subdivision site (yellow polygon)						
33	<i>Eucalyptus pilularis</i>	8 Hollows	1x 0-5 cm 3x 5-10cm 3x 10-15cm 1x 20-25cm	Frog/Microbat Bird/Microbat Glider, Possum Glider, Possum	Sugar Gliders	Taken to veterinarian with injuries. Later declared deceased
34	<i>Angophora costata</i>	3 Hollows	1x 0-5 cm 2x 5-10cm	Frog/Microbat Bird/Microbat	No fauna present	-
35	<i>Corymbia eximia</i>	Hollow	1x 0-5 cm	Frog/Microbat	Peron's Tree Frog	Relocated by ELA to BioBank site

Habitat Number	Species	Habitat Type	Sizes	Potential Fauna	Fauna present	Fauna Outcome
36	Stag	3 Hollows	1x 0-5 cm 2x 10-15 cm 1x 20-25 cm	Frog/Microbat Glider, Possum Glider, Possum	Retained	-
T37	Stag	Hollow	1x 0-5 cm	Frog/Microbat	No fauna present	-
38	Stag	3 Hollows	1x 0-5 cm 2x 10-15 cm	Frog/Microbat Glider, Possum	Retained	-
39	Stag	2 Hollows	1x 0-5 cm 1x 20-25 cm	Frog/Microbat Glider, Possum	Peron's Tree Frog	Relocated by ELA to BioBank site
40	<i>Corymbia eximia</i>	2 Hollows	1x 0-5 cm & 1x 20-25 cm	Frog/Microbat Glider, Possum	Striped Snake-eyed Skinks	Relocated by ELA to BioBank site
41	<i>Eucalyptus eugenioides</i>	3 Hollows	2x 0-5 cm 1x 15-20 cm	Frog/Microbat Glider, Possum	No fauna present	-
42	<i>Eucalyptus tereticornis</i>	Hollow	1x 15-20 cm	Glider, Possum	Australian Wood Duck eggs	Relocated by ELA to BioBank site
43	<i>Corymbia gummifera</i>	Hollow	1x 20-25 cm	Glider, Possum	No fauna present	-
44	<i>Eucalyptus tereticornis</i>	Hollow	1x 0-5 cm	Frog/Microbat	No fauna present	-
45	Stag	Hollow	1x 15-20 cm	Glider, Possum	No fauna present	-
Industrial Site (pink polygon)						
46	<i>Corymbia gummifera</i>	2 Hollows	2x 0-5 cm	Frog/Microbat	No fauna present	-
47	<i>Eucalyptus eugenioides</i>	3 Hollows	1x 5-10 cm 2x 10-15 cm	Bird/Microbat Glider, Possum	No fauna present	-
48	<i>Eucalyptus eugenioides</i>	2 Hollows	2x 5-10 cm	Bird/Microbat	No fauna present	-
49	<i>Eucalyptus eugenioides</i>	2 Hollows	2x 10-15 cm	Glider, Possum	No fauna present	-
50	<i>Eucalyptus eugenioides</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-
51	<i>Eucalyptus eugenioides</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-

Habitat Number	Species	Habitat Type	Sizes	Potential Fauna	Fauna present	Fauna Outcome
52	<i>Corymbia eximia</i>	2 Hollows	1x 10-15 cm	Gilder/Possum	No fauna present	-
53	<i>Eucalyptus eugenioides</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-
54	<i>Corymbia gummifera</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-
55	<i>Corymbia gummifera</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-
56	<i>Corymbia gummifera</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-
57	<i>Corymbia gummifera</i>	Hollow	1x 5-10 cm	Bird /Microbat	No fauna present	-
58	<i>Corymbia gummifera</i>	Hollow	1x 10-15 cm	Gilder/Possum	No fauna present	-

Table 2: Results of clearance of other habitat features

Habitat Type	Potential Fauna	Fauna present	Comments	Fauna outcome
Wombat burrow	Common wombat (<i>Vombatus ursinus</i>)	None	Burrow deemed inactive as sticks placed across burrow were not moved over a 3-week period	-
Understory vegetation	Reptiles, frogs, small ground-dwelling mammals	Striped Snake-eyed Skink (<i>Cryptoblepharus virgatus</i>), Eastern Bearded Dragon (<i>Pogona barbata</i>), Common Garden Skink (<i>Lampropholis guichenoti</i>), Delicate Skink (<i>Lampropholis delicata</i>) and Jacky Dragon (<i>Amphibolurus muricatus</i>)		Relocated by ELA ecologist to BioBank site
Dams	Frogs/Turtles	None	None sighted. May have self-relocated overnight	-

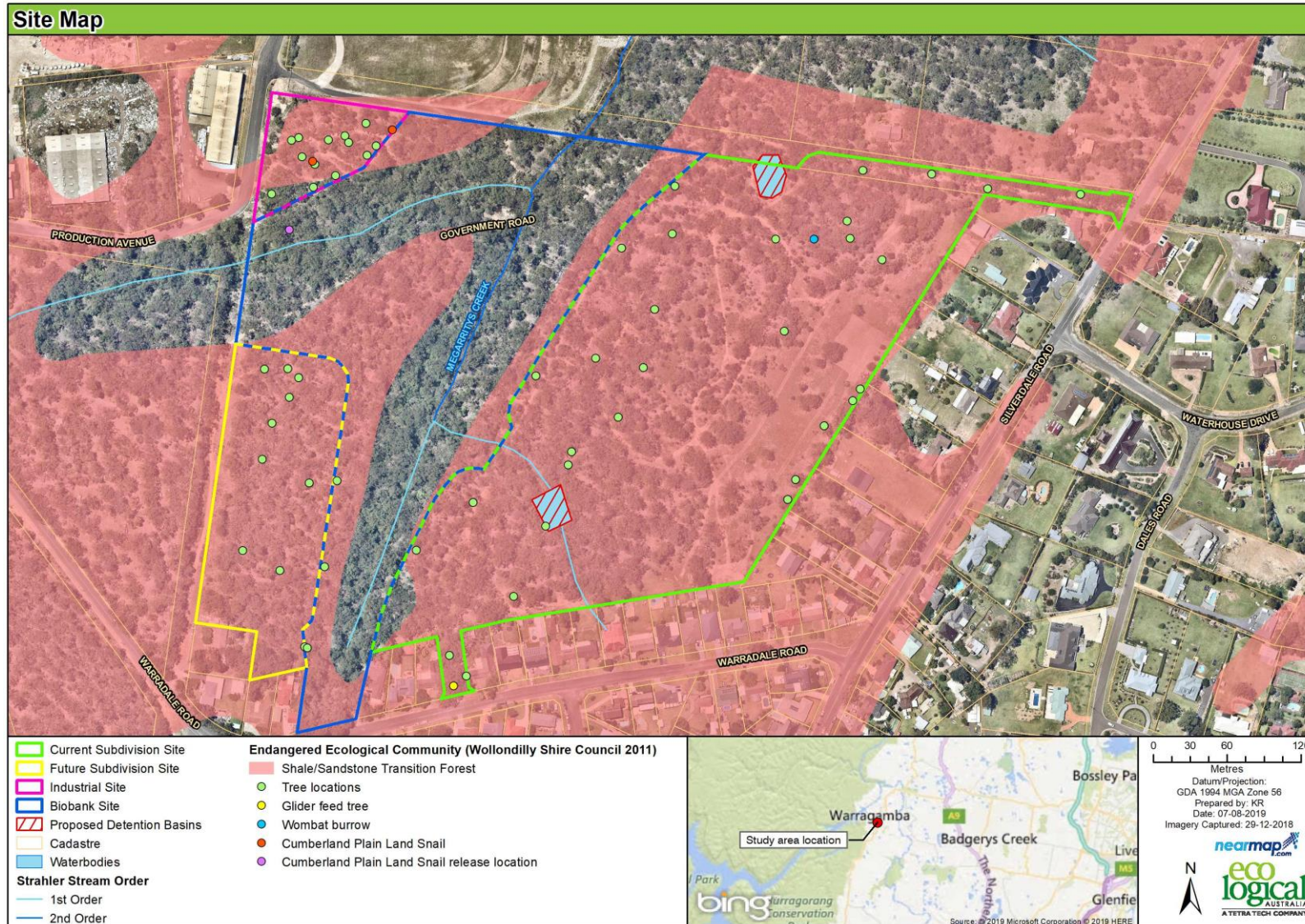


Figure 1 - Subject site



Figure 2 - Current Subdivision Site

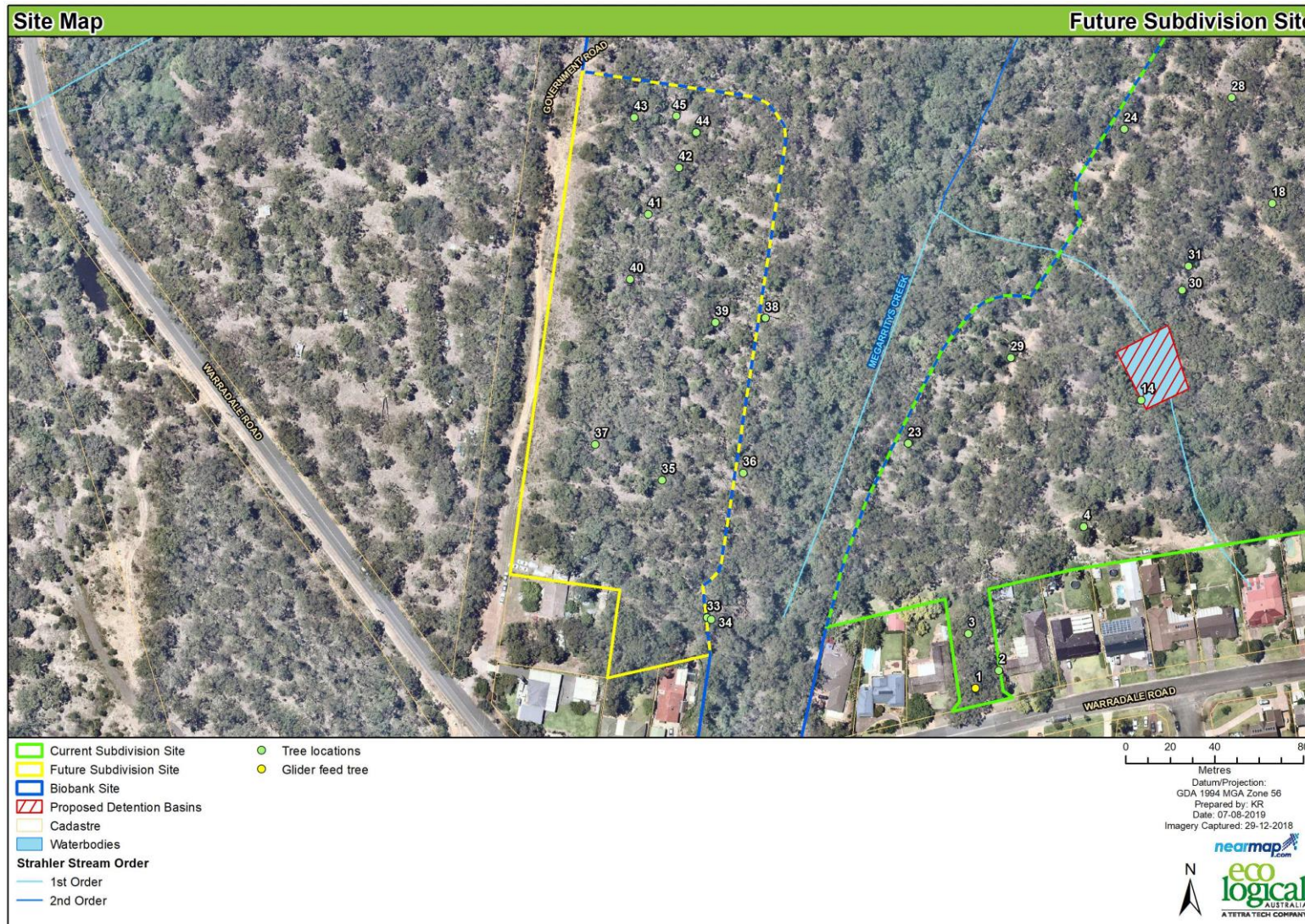


Figure 3 - Future Subdivision Site



Figure 4 - Industrial Site

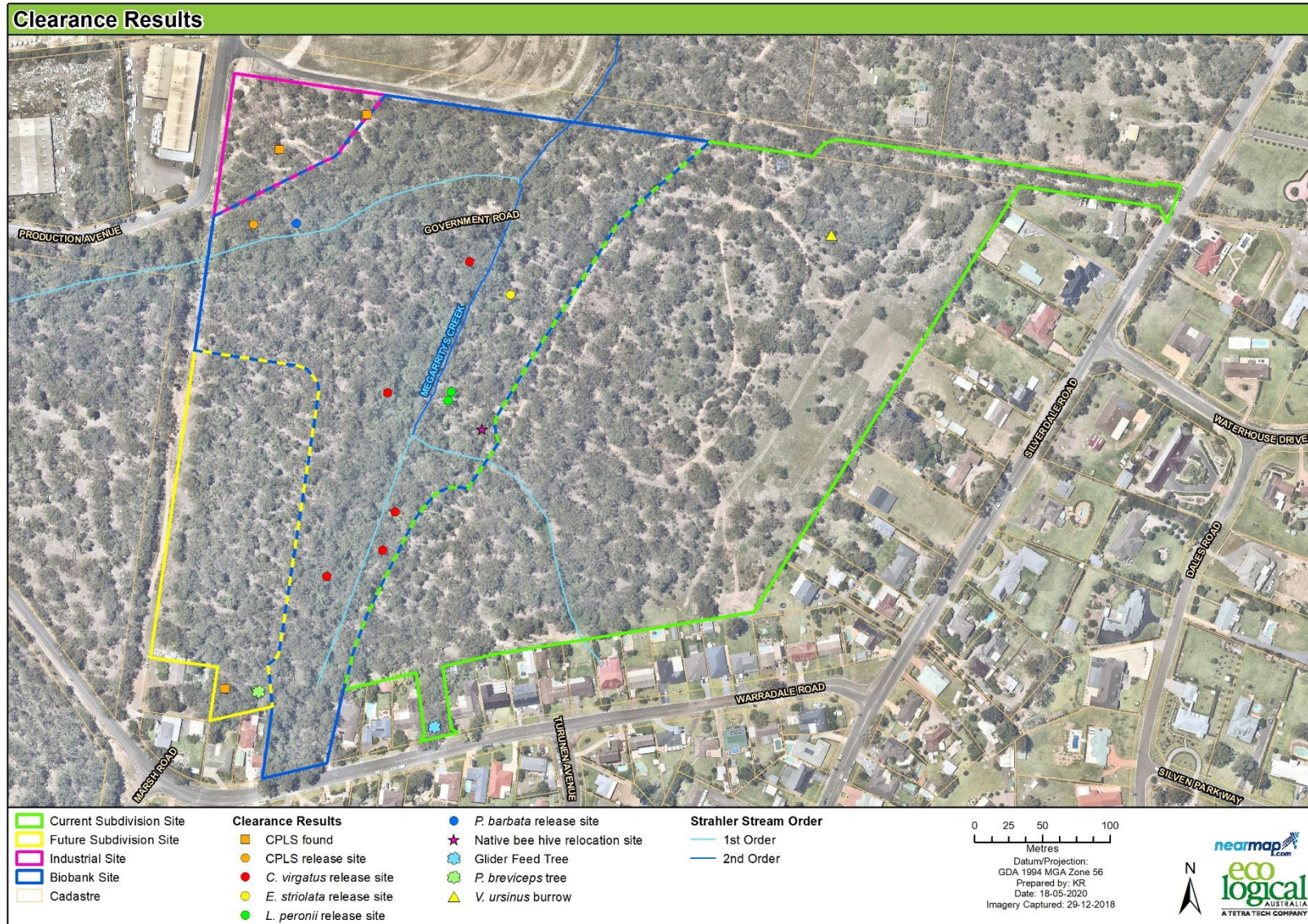


Figure 5 – Animals found during clearance