Nocturnal Drone Surveys

Conducted to Locate Koalas for Catching as part of Project KR-2022-04

Surveys occurred at night between 11pm and dawn on days where daily minimum temperatures were expected to be ≤18°C. Drones were flown along a pre-programmed flight path in a lawn mower pattern which consisted of parallel linear transects spaced 50 metres apart at a constant height of 65 metres and a maximum speed of 8m/s.

DJI Mavic 2 Enterprise Advanced drone
Dimensions: 322×242×84mm (L×W×H)
Weight: 909g
Visual Camera: M2EA Visual Camera with 1/2" CMOS sensor
Thermal Camera Sensor: M2EA Thermal Camera, Uncooled VOx Microbolometer

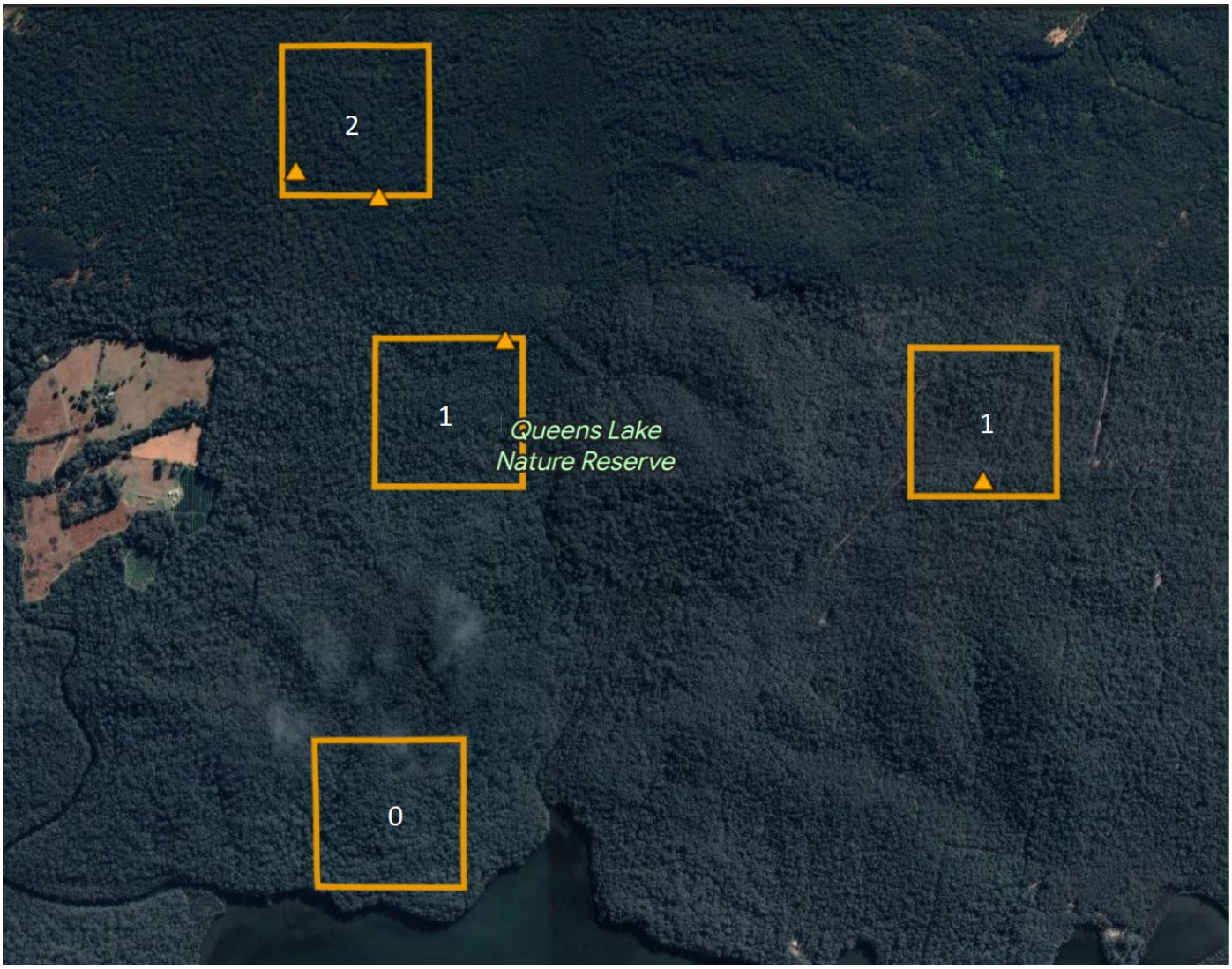
In cases where thermal signatures were identified using the DJI Mavic 2 Enterprise Advanced drone, the drone was manually positioned to observe the signatures to identify the species based on key identifying features such as appearance (e.g. size of the detection, presence of identifying features such as tails) or behaviour (e.g. location in canopy or on the ground, movement patterns such as hopping).

DJI Matrice M30T drone
Dimensions: 365×215×195 mm (L×W×H)
Weight: 3.770kg
Visual Camera: M2EA Visual Camera with 1/2" CMOS sensor
Thermal Camera: M2EA Thermal Camera with Uncooled VOx Microbolometer
Spotlight power: 30 to 40W
Spotlight Luminous flux: 2000lm
Spotlight illumination distance: Up to 50m

In cases where thermal signatures were identified using the DJI Matrice M30T drone, the drone was manually positioned to observe the signatures and align the camera. Once aligned, the operator then turned on the spotlight to confirm the detection. If the camera was aligned properly, and no major obstruction was present (e.g. thick canopy), thermal signatures could be identified as the target or non-target species almost instantly. Once the thermal signatures were identified and necessary photos taken, the spotlight was turned off and the drone resumed the rest of the survey. During this time, the spotlight was on for <1minute.

Queens Lake Nature Reserve: Night of 18-19/04/2023

Surveys were conducted using a DJI Mavic 2 Enterprise Advanced drone. Four grids were surveyed covering a total area of 100 ha. Four koalas were detected across all grids.



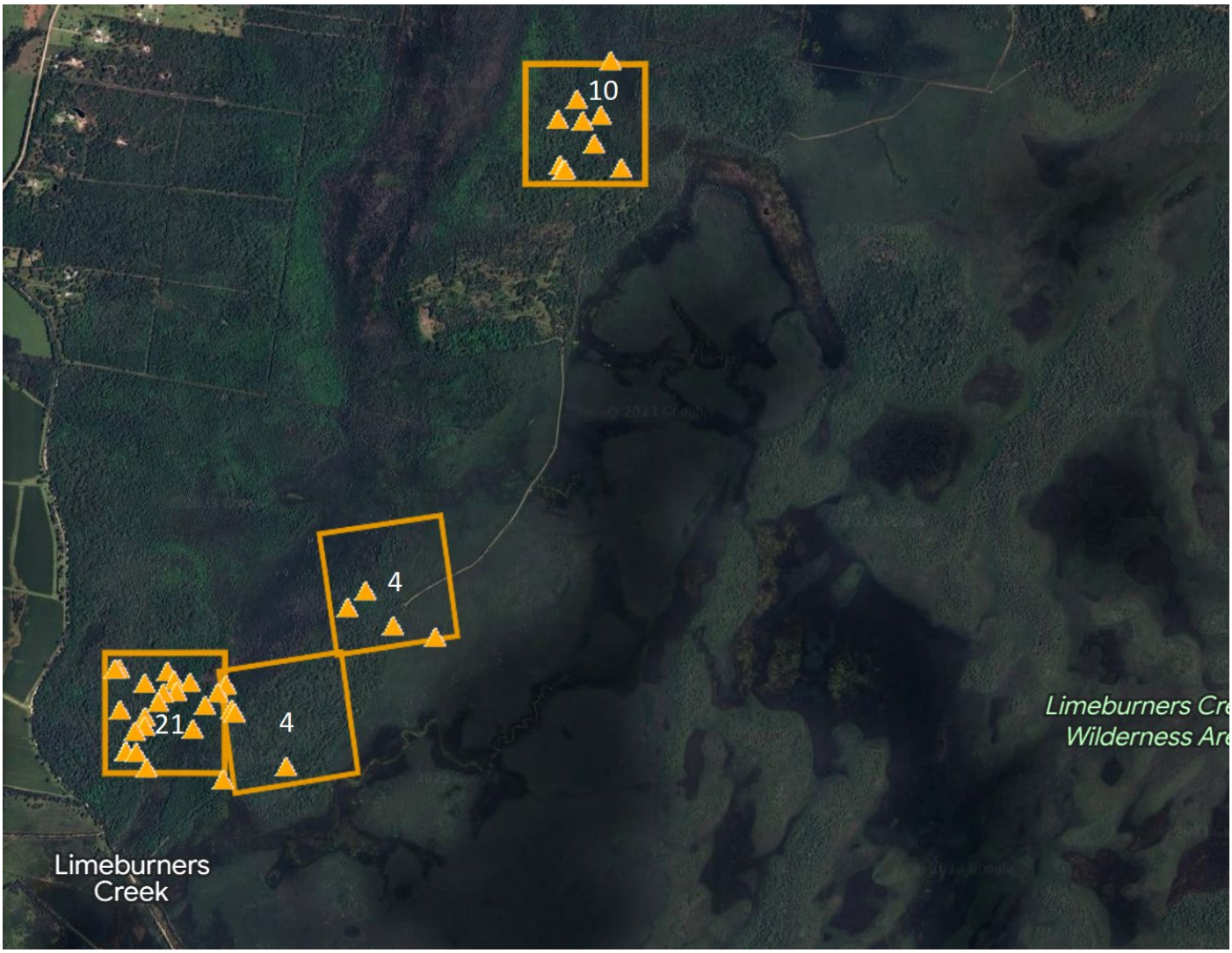
Limeburners Creek National Park: Night of 19-20/04/2023

Surveys were conducted using a DJI Mavic 2 Enterprise Advanced drone. Two grids were surveyed covering a total area of 50 ha. Eighteen koalas were detected across all grids, including two dependant young.



Limeburners Creek National Park: Night of 23-24/07/2023

Surveys were conducted using a DJI Matrice M30T drone. Four grids were surveyed covering a total area of 100 ha. Thirty-Nine koalas were detected across all grids.



Kumbatine National Park: Night of 20-21/04/2023

Surveys were conducted using a DJI Mavic 2 Enterprise Advanced drone. Three grids were surveyed covering a total area of approximately 75 ha. Three koalas were detected across all grids.



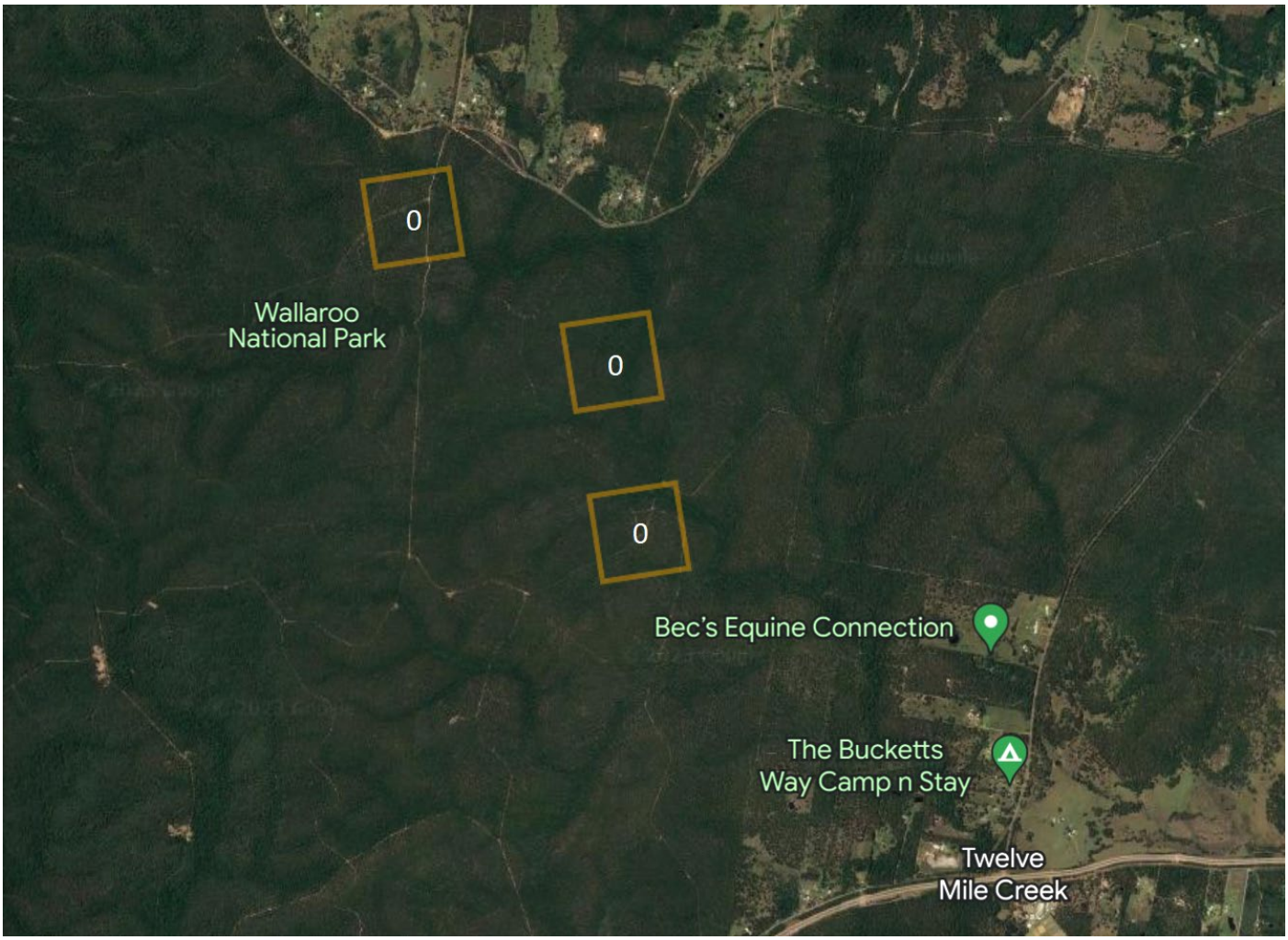
Karuah National Park: Night of 23-24/06/2023

Surveys were conducted using a DJI Matrice M30T drone. One grid was surveyed covering a total area of 25 ha. No koalas were detected.



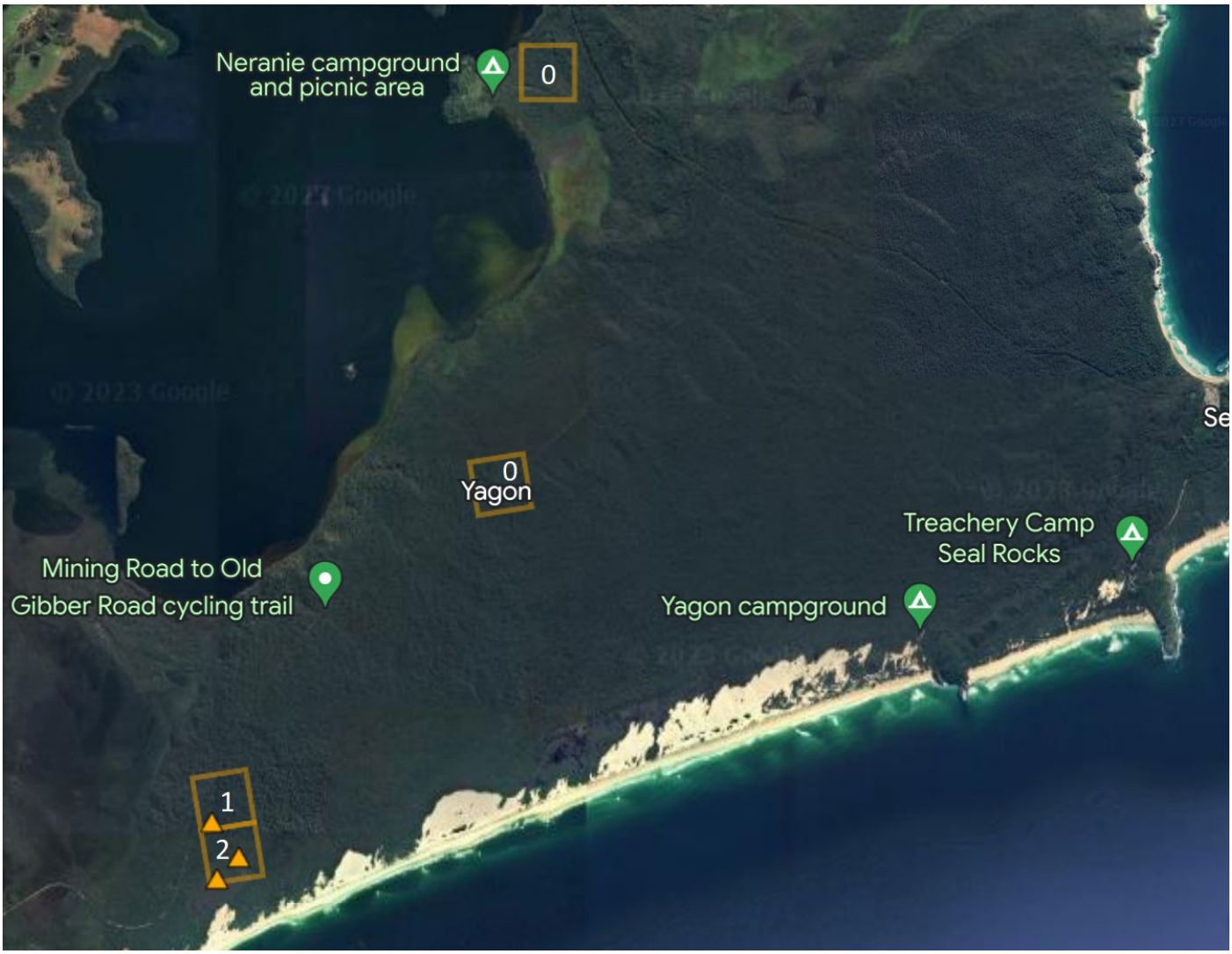
Wallaroo National Park: Night of 23-24/06/2023

Surveys were conducted using a DJI Matrice M30T drone. Three grids were surveyed covering a total area of 75 ha. No koalas were detected.



Myall Lakes National Park: Night of 24-25/06/2023

Surveys were conducted using a DJI Matrice M30T drone. Five grids were surveyed covering a total area of 125 ha. Three koalas were detected across all grids.



Wallamba Nature Reserve: Night of 25-26/06/2023

Surveys were conducted using a DJI Matrice M30T drone. Three grids were surveyed covering a total area of 67.62 ha. Three koalas were detected across all grids.



13520A pacific high way, Minimah: Night of 25-26/06/2023

Surveys were conducted using a DJI Matrice M30T drone. Two grids were surveyed covering a total area of 50 ha. No koalas were detected across all grids.



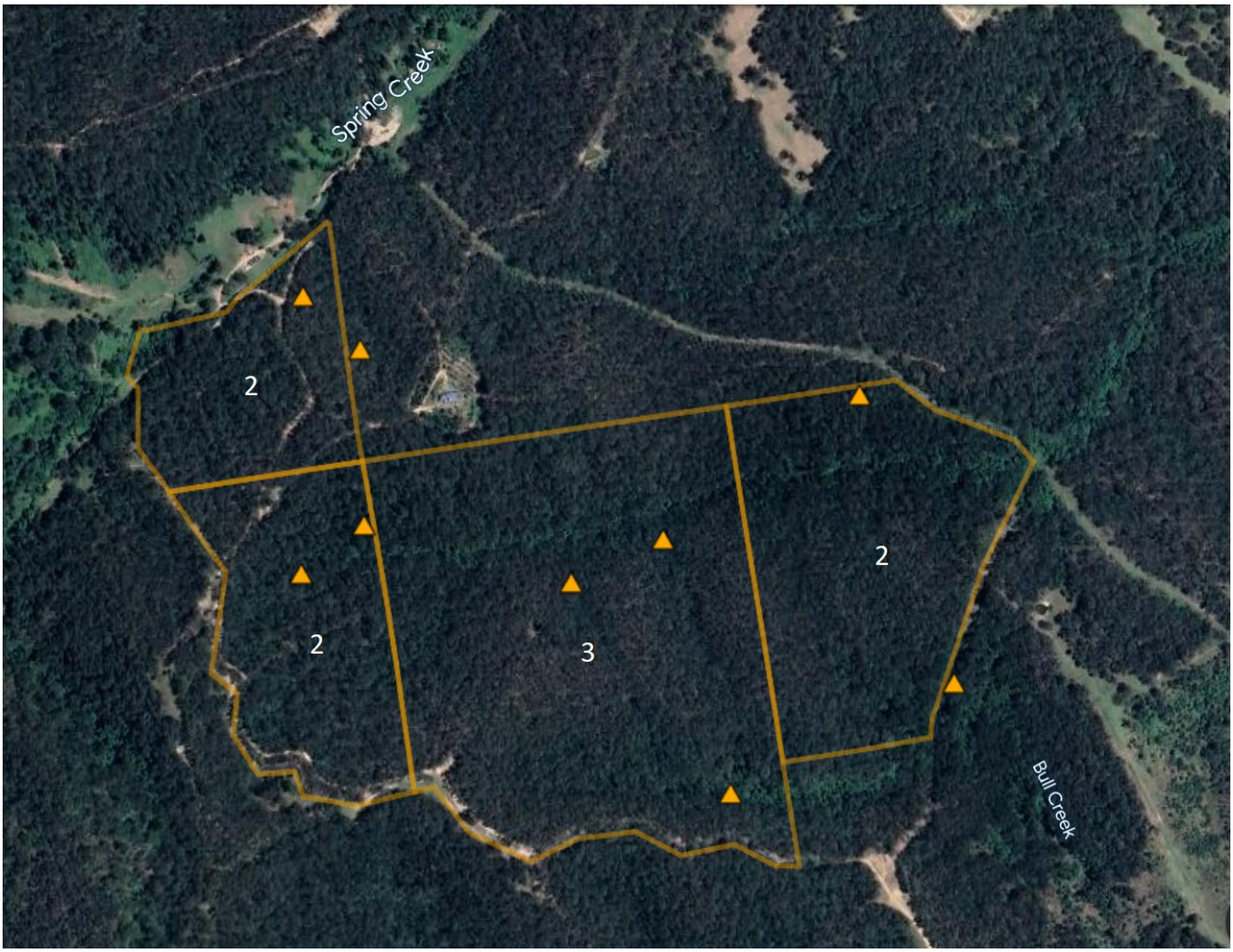
Wallingat National Park: Night of 26-27/06/2023

Surveys were conducted using a DJI Matrice M30T drone. Five grids were surveyed covering a total area of 120.03 ha. One koala was detected across all grids.



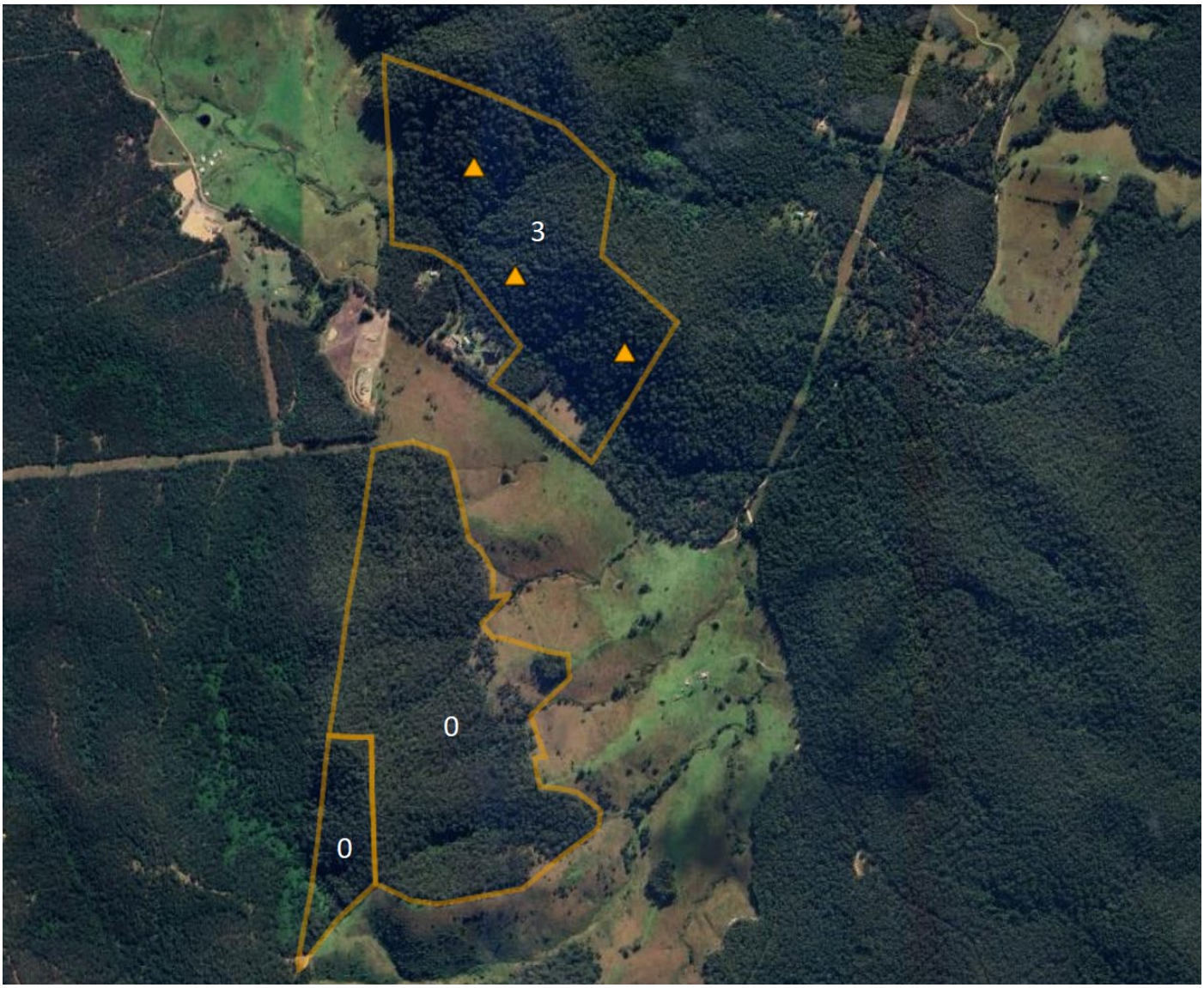
Lot B DP39232, Grant, Mid-Coast Council (Ward River): Night of 27-28/06/2023

Surveys were conducted using a DJI Matrice M30T drone. Four grids were surveyed covering a total area of 61.62 ha. Nine koalas were detected across all grids.



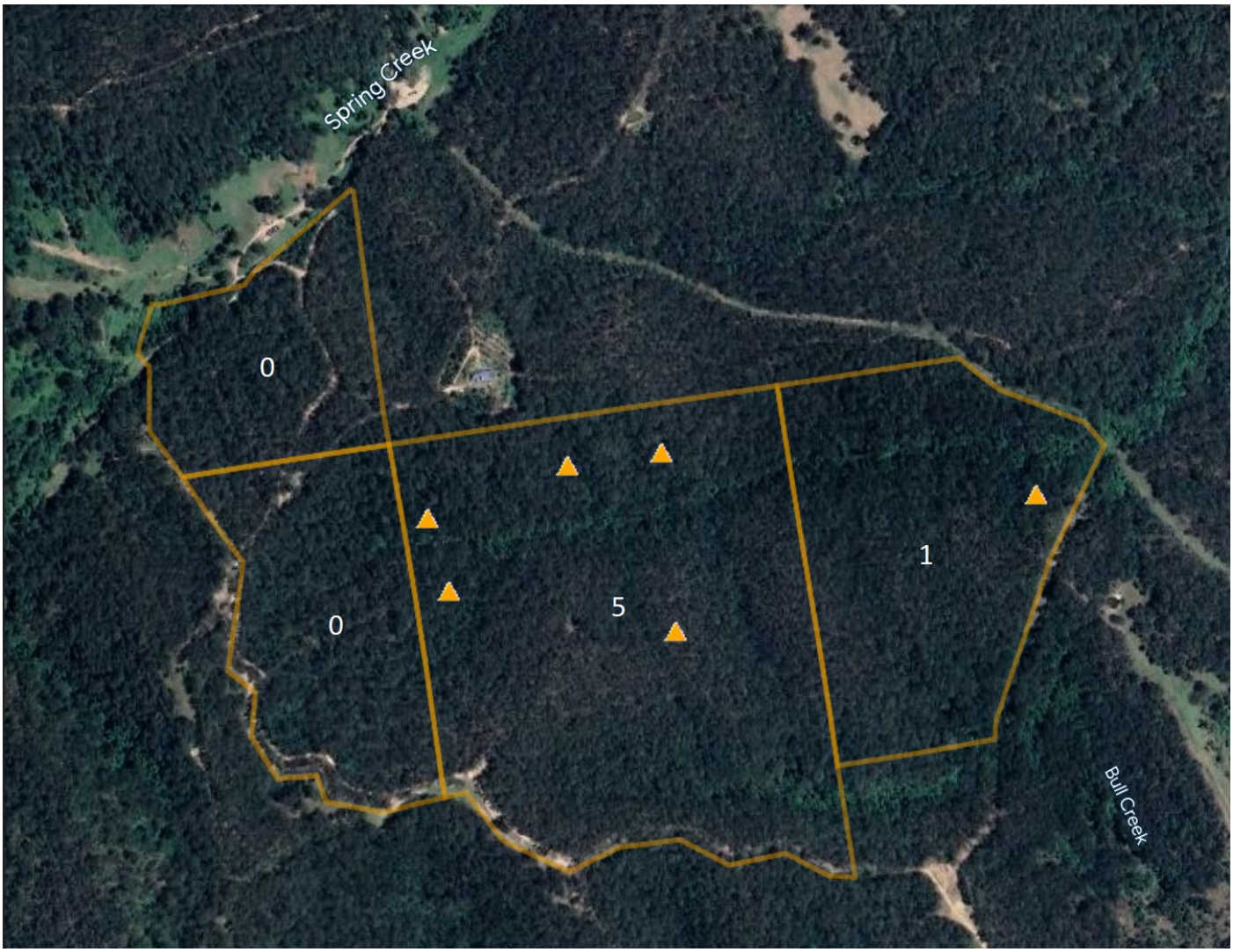
585 Manning Hill Road, Bunya and adjacent properties: Night of 28-29/06/2023

Surveys were conducted using a DJI Matrice M30T drone. Three grids were surveyed covering a total area of 125.48 ha. Three koalas were detected across all grids.



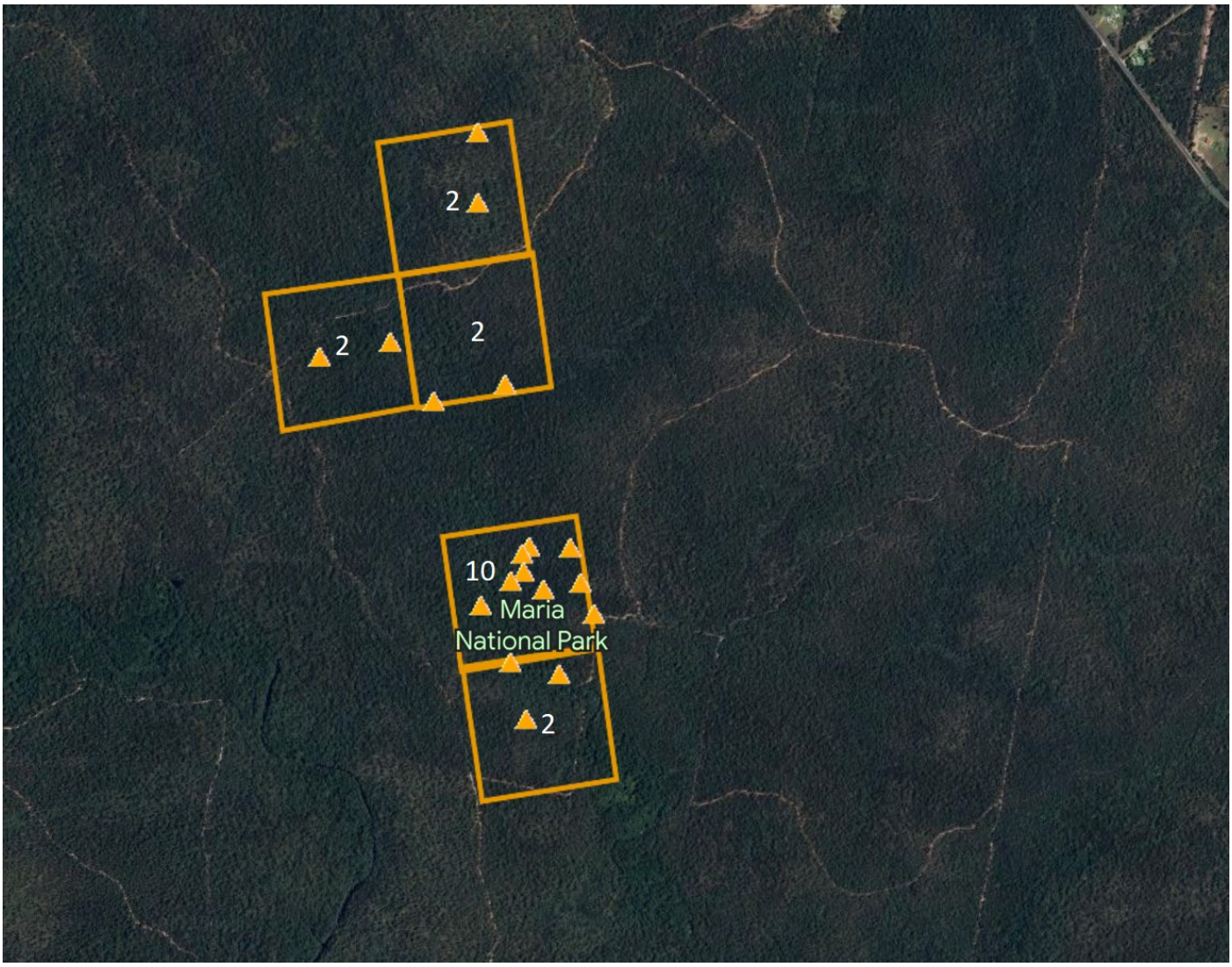
Lot B DP39232, Grant, Mid-Coast Council (Ward River): Night of 27-28/07/2023

Surveys were conducted using a DJI Matrice M30T drone. Four grids were surveyed covering a total area of 61.62 ha. Six koalas were detected across all grids.



Maria National Park: Night of 24-25/07/2023

Surveys were conducted using a DJI Matrice M30T drone. Five grids were surveyed covering a total area of 125 ha. Eighteen koalas were detected across all grids.



112 Tall Timber Drive, Lake Innes: Night of 25-26/07/2023

Surveys were conducted using a DJI Matrice M30T drone. Four grids were surveyed covering a total area of 87.7 ha. Nine koalas were detected across all grids, including one dependant young.



9174 Thunderbolts Way, Nowendoc: Night of 26-27/07/2023

Surveys were conducted using a DJI Matrice M30T drone. Five grids were surveyed covering a total area of 128.0 ha. Eight koalas were detected across all grids.

