

Koala thermal detection & nest box monitoring

Drone-mounted radiometric thermal finds warm-bodied arboreal fauna against a cool night canopy; a 168 mm-equivalent zoom confirms species from stand-off. The same aircraft reads Greater Glider nest boxes externally – no climbing, no elevated work platform, no disturbance to the animals or the boxes – and every detection lands as georeferenced, auditable evidence: paired thermal and RGB imagery, a register aligned to offset area management plan (OAMP) record fields, and GIS layers prepared to the Commonwealth Guidelines for Biological Survey and Mapped Data. Offered as a **complement** to the physical and visual inspection methods prescribed in approved management plans.



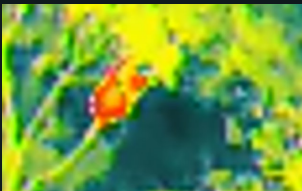
KOALA DETECTION – THERMAL ACQUISITION OVER CANOPY, PRE-DAWN



THE SAME ANIMAL – SPECIES CONFIRMED BY ZOOM FROM STAND-OFF

PROVEN IN THE FIELD – BOWEN BASIN OFFSET PROGRAM, WINTER 2026

On a recent proof-of-concept survey across a coal-mining offset area in Central Queensland (client confidential), a single pre-dawn session at $\approx 6^{\circ}\text{C}$ ambient **successfully detected and confirmed three koalas** in roughly 80 minutes of transects – each verified to species by zoom and delivered with a georeferenced position – and externally screened ten Greater Glider nest boxes at 9–28 m hold-off, flagging one box with a thermal signature consistent with occupancy for follow-up.



THE OTHER TWO KOALAS FROM THE SAME SESSION – THERMAL ACQUISITION AND ZOOM CONFIRMATION FOR EACH DETECTION

How a survey runs

01

Detect

Pre-dawn thermal transects across target habitat, flown when body-to-canopy contrast is strongest — cool, still, dry nights, year-round.



OCCUPANT HEAT SIGNATURE AT THE BOX ENTRANCE — THERMAL

02

Confirm

Each thermal target is held at stand-off and interrogated with the tele camera to confirm species — koala, glider, possum or non-target.

03

Screen boxes

A morning round reads each box's entrance and walls for occupant heat after overnight cooling; RGB stills record external condition box by box.



THE SAME BOX BY ZOOM — EXTERNAL CONDITION RECORDED

04

Deliver

Reads are matched to your register by position and camera pointing, so every round repeats the same geometry and the dataset builds as a living GIS layer.

NOTE

Internal condition, breeding and pest use remain the province of ecologist inspection — thermal screening extends coverage and cadence alongside it.

CAPTURED

DJI Matrice 4T — sub-2 kg platform. 640 × 512 radiometric thermal, Super-Resolution to 1,280 × 1,024, R-JPEG with per-pixel temperature; 48 MP zoom to 168 mm equivalent with laser rangefinder.

DELIVERED

Paired thermal/RGB evidence per detection · nest box register on OAMP record fields · Google Earth KMZ with embedded imagery · GDA2020 GIS layers with metadata.

FLOWN

Pre-dawn and night windows to suit the target, year-round on cool nights — CASA-certified operations under Dronehab's ReOC (CASR Part 101).

COMPLIANCE & DATA STANDARDS

Survey design per the Commonwealth Survey Guidelines for Australia's Threatened Mammals; effort recorded against the guideline.

Spatial outputs prepared to the Guidelines for Biological Survey and Mapped Data (2018) — ready for compliance reporting and departmental submission.

Method supported by peer-reviewed thermal-drone studies — Corcoran et al. 2019, Scientific Reports; Wagner et al. 2025, Ecological Applications.

Offered as a complement to prescribed monitoring; where substitution is sought, we support the management-plan revision pathway with the evidence base regulators expect.

Engage us — scoped per program, from single proof-of-concept flights to recurring monitoring rounds. +61 456 902 327 · Enquiries@dronehab.com.au · ReOC ARN 1210588