CASE STUDY

AERIAL LASER SCANNING CRUCIAL TO MAPPING VULNERABLE FAUNA

PROJECT: Aerial Survey for Malleefowl Mound Detection – Regional Western Australia **CLIENT**: Anditi

PROJECT BACKGROUND

The Malleefowl is a ground-dwelling bird, generally found in the woodlands and shrublands of semi-arid areas of Australia. It's known for its large nesting mounds - a nest made in a mound of leaf litter and soil.

In recent years, Malleefowl populations have declined because of habitat loss (to farming), fire, and predatory species such as the fox. As such, the species is now listed as "vulnerable".

Accurately mapping the Malleefowl habitat is an essential element in monitoring population numbers and ensuring their survival. As Malleefowl's tend to traverse over great distances, it can be difficult for researchers to accurately locate individual birds. According to ecologists, detecting nesting mounds is a more reliable approach than trying to map bird numbers.

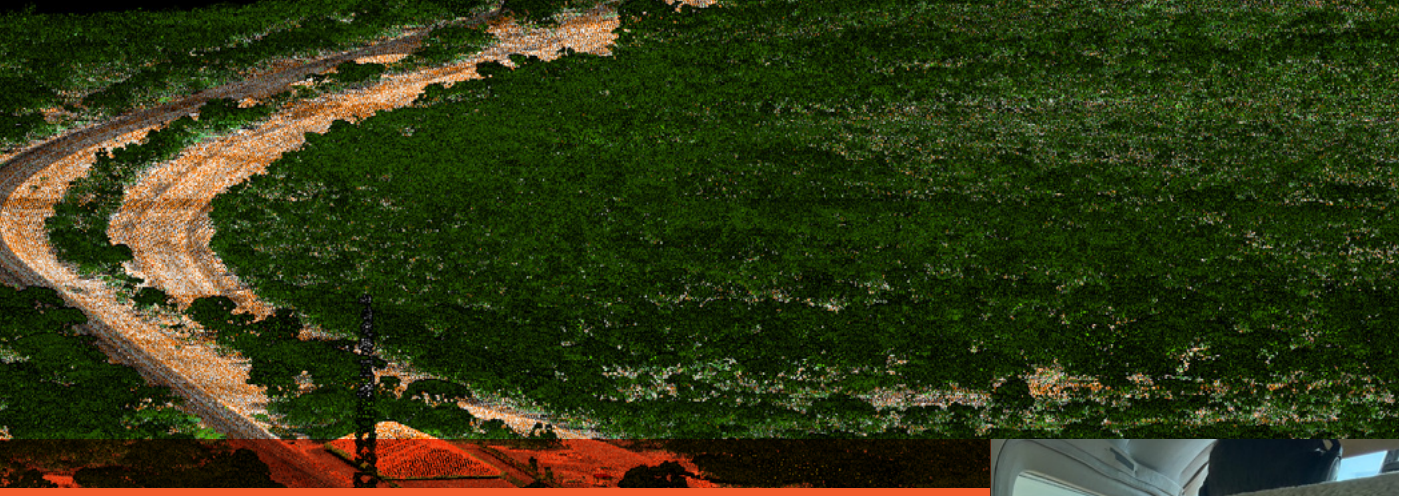
Working alongside several conservation bodies across Australia, Anditi has been instrumental in providing data to assist in detecting and recording active mounds throughout known habitats.

MNG was engaged to conduct wide area mapping in consultation with partners Anditi, who were responsible for the analysis of the data.

CHALLENGES

The Malleefowl live in expansive, remote locations and in semi-arid conditions and this this wide area data capture project presented several challenges including:

1. Remote locations pose several costly logistical challenges including access, transport, fuel, and ensuring adequate food and water supplies.
2. Continually hot, dry weather conditions meant the health and safety of MNG's staff and other contractors needed to always be front of mind.
3. Traditional land-based surveys are labour intensive, expensive and time consuming.
4. Although the use of aerial imagery (photogrammetry) can be effective in similar cases, shadows or thick vegetation can cause detection difficulties. Photogrammetry also relies on favourable weather and atmospheric conditions to be able to accurately capture the mounds – conditions which can be inconsistent in semi-arid areas.



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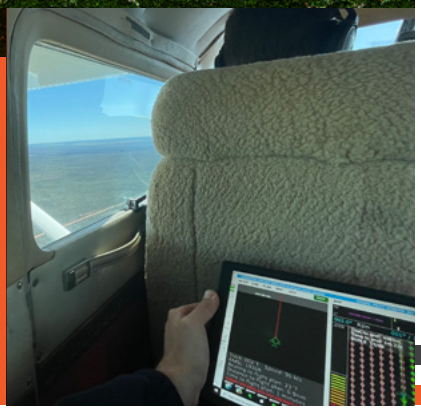

SOLUTIONS

In consultation with Anditi, MNG conducted an aerial laser scanning (LiDAR) survey across a multitude of sites within the mid-west region of Western Australia. High-resolution colour imagery was captured simultaneously to provide greater detail of the landscape.

One of the benefits of utilising LiDAR to detect Malleefowl nest mounds was its ability to see through vegetation to accurately map varying ground levels and variations across each site. Given the remoteness of the survey area, LiDAR provided an efficient, non-invasive, and reliable method of capturing data in a cost and time efficient manner.

Mobilising from Jandakot Airport, MNG scanned each location using a series of flight runs of perpendicular alignments.

OUTCOMES

Following the safe and successful completion of the aerial survey, a colourised point cloud was delivered to Anditi. This will be used to produce a Digital Elevation Model (DEM) and form part of Anditi's analysis of Malleefowl mound detection.

Aerial photography supplied by MNG was incorporated into the report, to further illustrate habitat and landscape context for the surrounding area/s. This enabled field researchers to accurately pinpoint the locations of nesting mounds at ground level, determine signs of activity and the condition of each nest.

With access to this accurate and reliable data, ecologists will be able to make more informed future management decisions as part of the National Recovery Plan, to ensure the continued survival of the Malleefowl.

MNG is proud to have partnered on this project and contribute to environmental science and the protection of endangered fauna.

TALK TO US

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