



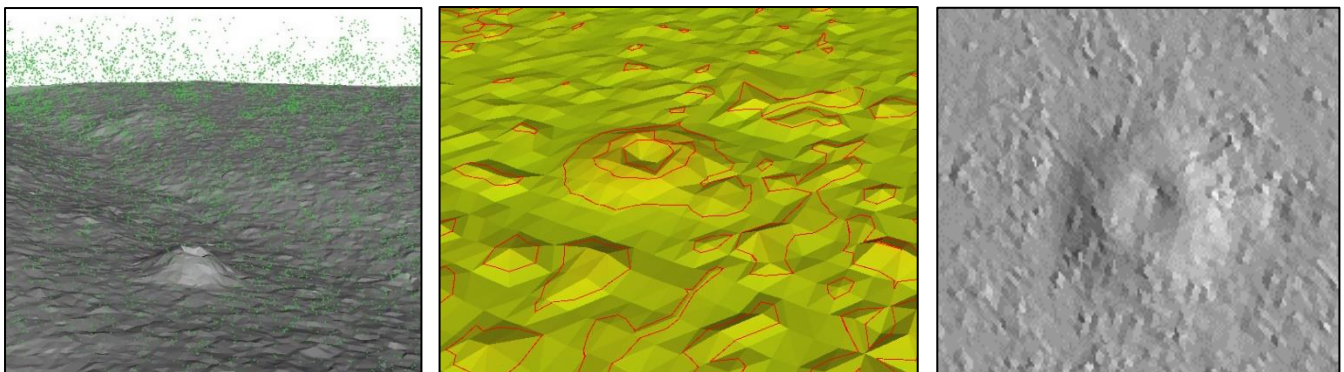
Preface

This report should be read in conjunction with the report “Comet Vale Malleefowl Mound Detection FINAL rev1.pdf” dated 31 May 2022 which reports on a subset of this area.

Data Analysis

Utilising the LiDAR data and the Anditi data processing engine, Anditi classified the data into ground, vegetation and other non-ground classifications creating an accurate DEM that includes potential mound-like features. The data was then further analysed to identify Malleefowl mounds. These were found using Anditi’s patented near-ground feature detection algorithms to identify potential sites, which are then ranked depending on the degree of certainty. Certainty is affected by the intactness of the mound, any overly dense obscuring vegetation and other factors, including the data gaps and general data variability.

While Anditi performed much of this automatically, some time was allowed for manual checks to ensure a high level of accuracy. An orthophoto was provided so manual checks compared ratings 1-3 against the orthophoto to check for false positives.



Rating mounds

The Anditi Malleefowl mound analysis algorithms look for ground features in the point cloud that best approximate a typical Malleefowl mound shape. Based on the algorithm match to shape and manual checks, a mound is classed from 1 to 4.

- 1 = Very closely matches a typical Malleefowl mound shape and is highly likely to be a Malleefowl mound
- 2 = Is similar to a Malleefowl mound shape and could be a Malleefowl mound
- 3 = Is a mound shape that is approximately within the parameters of size for a Malleefowl mound. This could be an old Malleefowl mound, a mound of earth around living or dead tree/vegetation, natural hummocks around waterways, etc.
- 4 = Is a mound shape that is approximately within the parameters of size for a Malleefowl mound but isn’t very similar to a typical Malleefowl mounds. This could be a broken Malleefowl mound, a mound of earth around living or dead tree/vegetation, natural hummocks around waterways, tussock vegetation etc.

Manual checking is usually completed using the Anditi point cloud reviewing tools.

- The following criteria for category 1 mounds are applied:

- The mound should be circular in shape and look like a classic Malleefowl mound shape.
- Contours displayed on the mound should be concentric.
- There must not be any obvious human activity; like digging, water dams, road clearing; close to the mound.
- There must not be a tree originating from the mound.
- The mound should not be on a very steep surface. Normally mounds are found on flat surfaces or on ground with a gentle slope.

An orthophoto provides an excellent final check and can often clearly show Malleefowl mounds or check for and exclude false positives such as mound-like vegetation.

Attributes

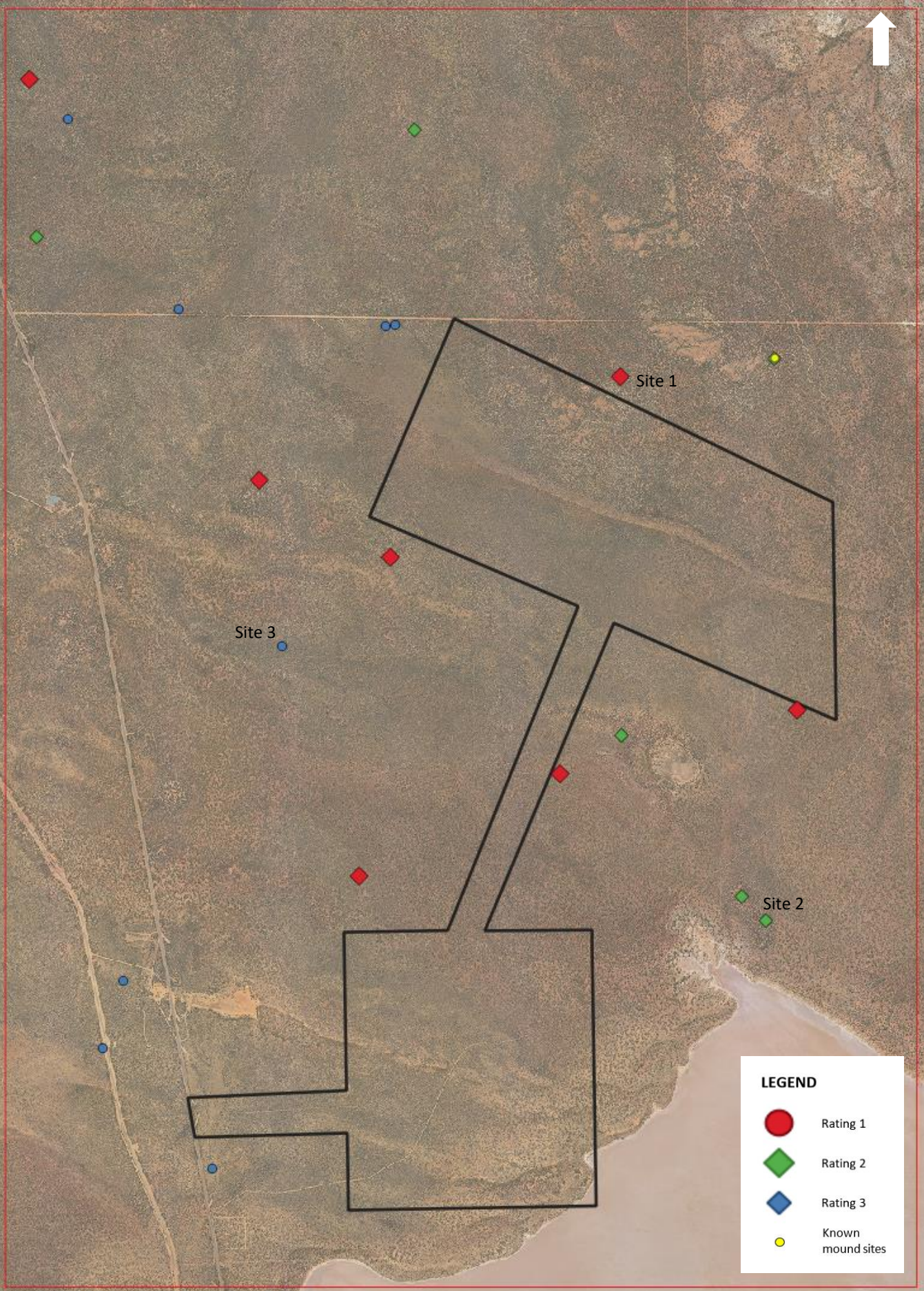
Anditi extracted and supplied a range of attributes from Rating and location to height above sea level for each mound, mound radius, mound height and more.

Data is supplied as a shapefile with attributes.

False positive on mound-like vegetation – removed in QA



Mound Locations and Examples



Data Analysis Results

Rating 1	Rating 2	Rating 3
7	6	8

Comments

This area has extensive circular vegetation with a distinct mound-like profile in the point cloud. These false positives have been removed automatically or manually.

Classes reviewed

All Class 1, 2 and some 3 mounds were checked manually through review of the point cloud and where false positives were detected using the supplied imagery, these were moved to Class 4. Mounds rated 1-3 should be manually verified.

Known Mounds Review

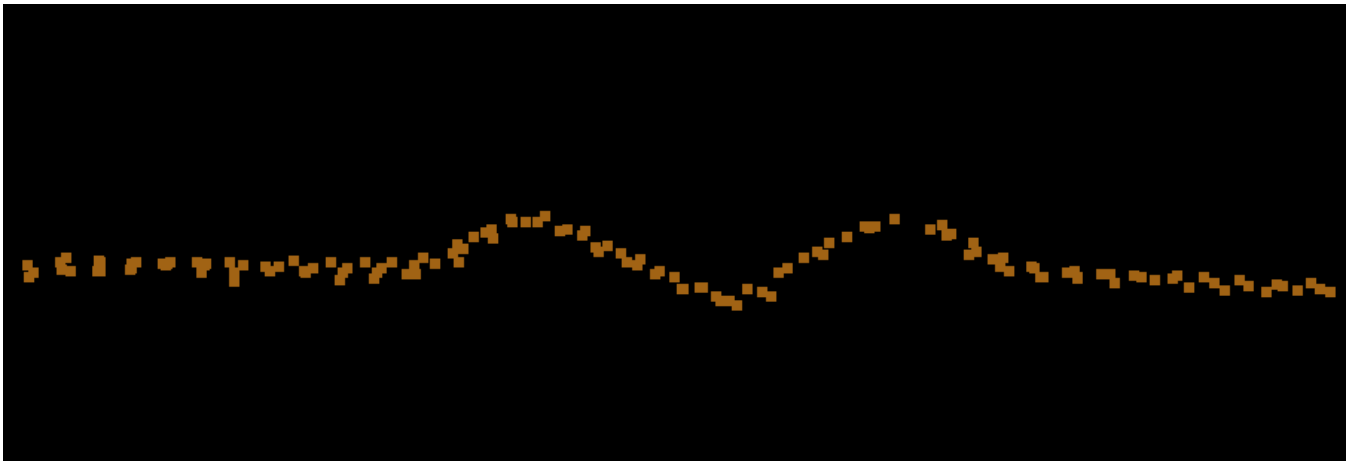
The client supplied a spreadsheet of known mounds. Most of these fall within the purview of the previous report area. The site located to the NE is listed as "Recently active mound" and was discovered independently by the Anditi algorithm and classed as a 2 Rating. It is plotted as a yellow circle on the map, overlaying the green point from the Anditi analysis.

Example Comet Vale Mounds

Site 1 – Rating 1

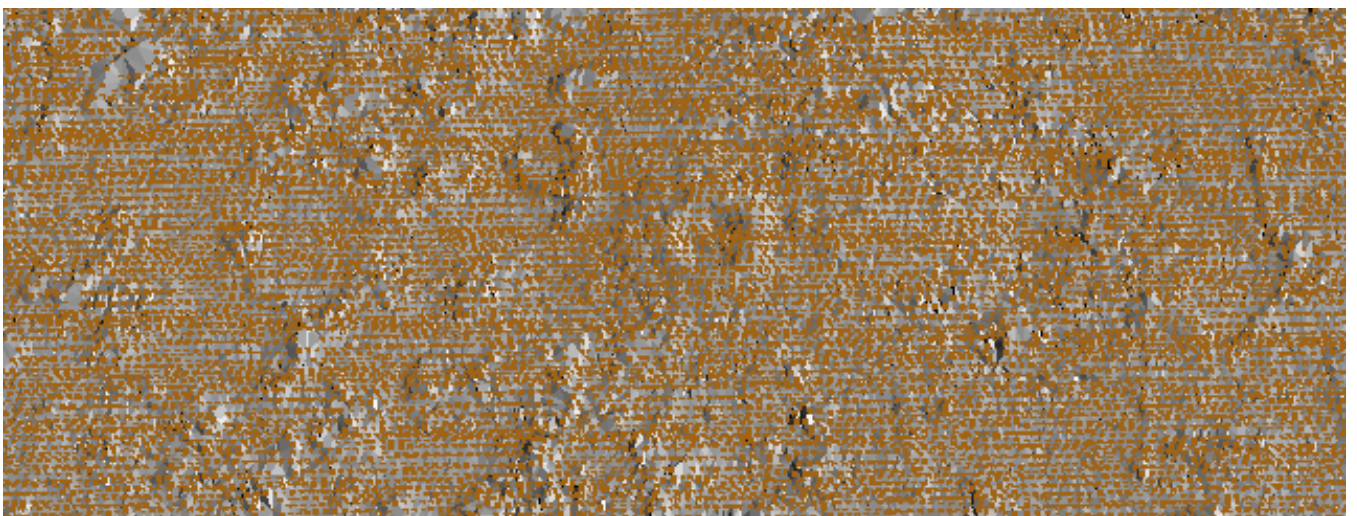
Profile shows central depression and well-formed mound sides. This was rated as a 1 – *"Very closely matches a typical Malleefowl mound shape and is highly likely to be a Malleefowl mound"*.

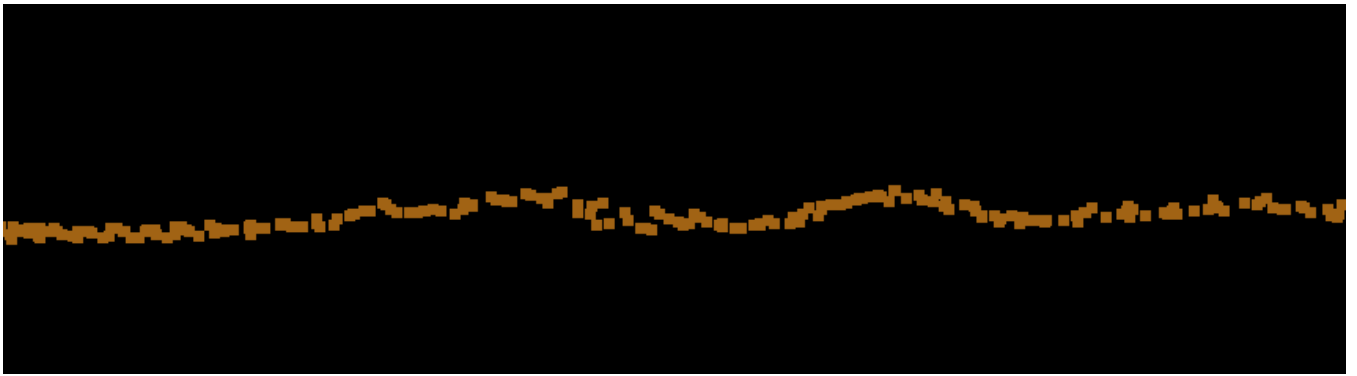




Site 2 – Rating 2

Shows a depression with low mound sides, partially obscured by vegetation. Identified by Anditi as a mound and rated as 2 – “Is similar to a Malleefowl mound shape and could be a Malleefowl mound”





Site 3 – Rating 3

Shows almost no depression with low mound sides, partially obscured by vegetation. Identified by Anditi as a mound and rated as 3 – “Is a mound shape that is approximately within the parameters of size for a Malleefowl mound. This could be an old Malleefowl mound, a mound of earth around living or dead tree/vegetation, natural hummocks around waterways, etc.”





Known Mound – Rating 2

Shows a slight depression with identifiable mound sides, partially filled in the centre. Identified by Anditi as a mound and rated as 2 – “Is similar to a Malleefowl mound shape and could be a Malleefowl mound”, it has been noted in the field as being recently active.



