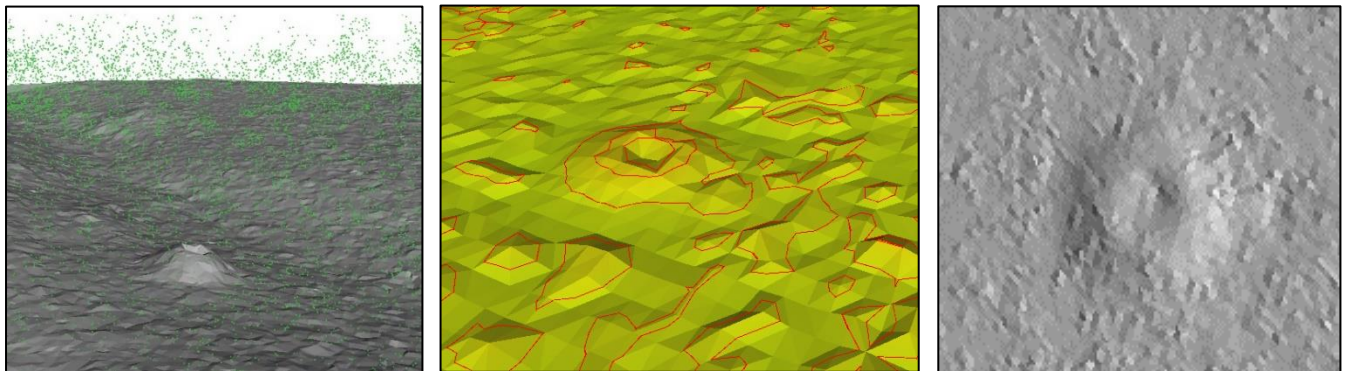




Data Analysis

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.

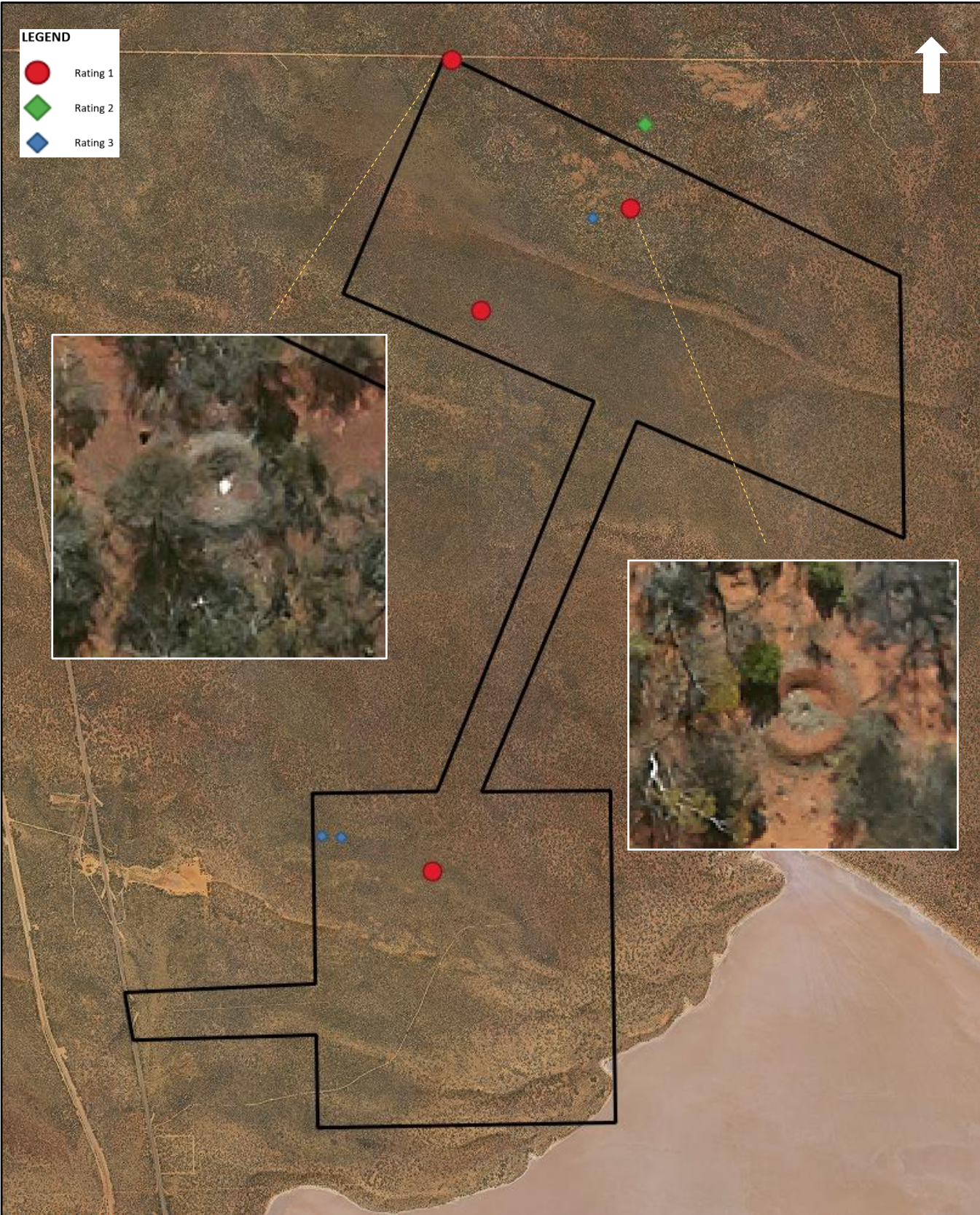
An orthophoto provides an excellent final check and can often clearly show Malleefowl mounds or check for and exclude false positives such as mound-like vegetation.

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.

Mound Locations and Examples



Data Analysis Results

Rating 1	Rating 2	Rating 3
4	1	3

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.

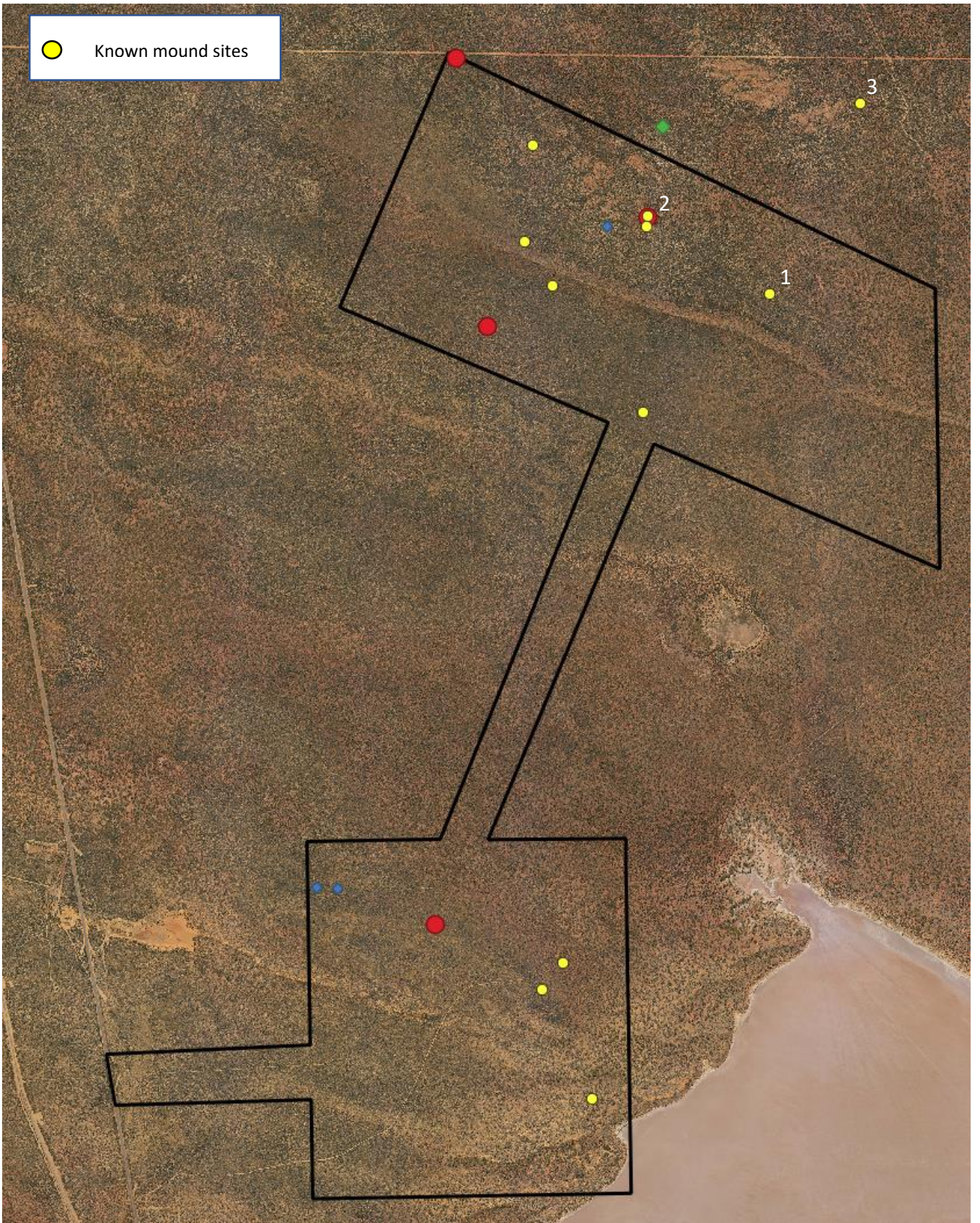
Classes reviewed

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

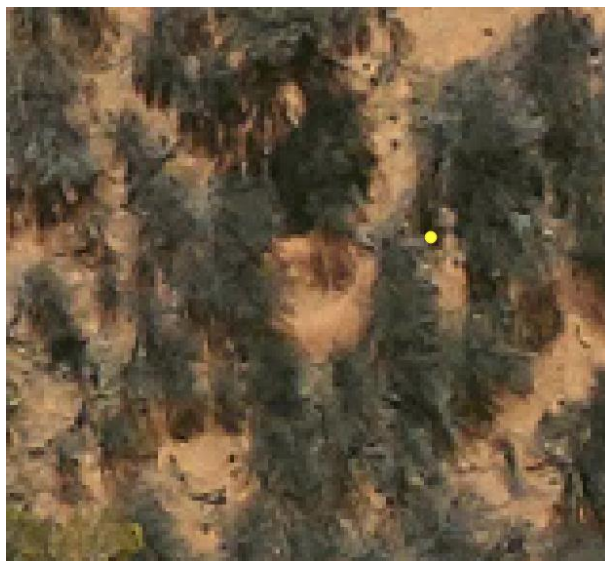
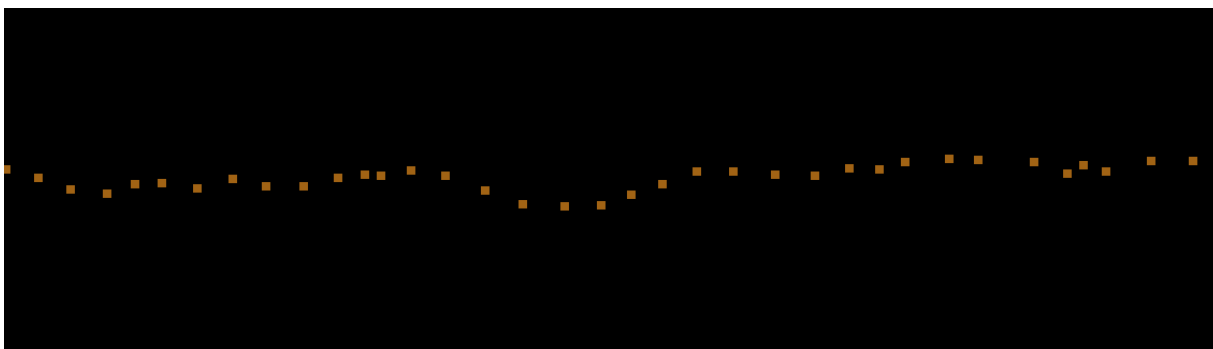
The client supplied a spreadsheet of 11 known mounds. These are plotted as yellow circles on the map below. Of those 11 mound locations, 3 had visible mounds in the point cloud and in the aerial imagery. Of those 3 mounds (see map below), one (site 3) was well beyond the project scope and was not assessed. Of the other two sites, one (site 1) has no mound sides projecting above the natural ground surface and a small depression, the other was identified as a mound by Anditi and rated as a 1 - *Very closely matches a typical Malleefowl mound shape and is highly likely to be a Malleefowl mound.*

● Known mound sites



Site 1

Profile shows minor depression, no mound sides.



Site 2

Shows a depression with low but distinct mound sides. Identified by Anditi as a mound and rated as 1 - Very closely matches a typical Malleefowl mound shape and is highly likely to be a Malleefowl mound

