



REPORT

ARCHAEOLOGICAL MAPPING OF STONE WALLS,
MAUAO HISTORIC RESERVE, MOUNT MAUNGANUI

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Mauao Historic Reserve, Mount Maunganui

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1. Introduction

Mauao Historic Reserve is situated north of Tauranga on the Bay of Plenty coast (Figure 1). Mauao is a prominent landscape feature at a strategic location at the mouth of the Tauranga harbour and, as such, it has a rich history of use. In particular, the Reserve contains extensive evidence of Maori occupation in the form of terraces, pits and pa as well as European-built features such as the stone jetty built in 1889 to provide easier access to the Reserve for day-trippers from Tauranga. Mauao remains an extremely popular destination with over a million visitors walking the tracks each year (Mauao Historic Reserve Management Plan 2018).

In order to provide guidance for the management of archaeological sites in the Reserve, Tauranga City Council have commissioned In Situ Heritage Ltd to conduct detailed mapping of features. The first phase of this work involved extensive mapping of the features relating to Maori occupation of the Reserve (In Situ Heritage 2019). The current document provides a description of the methods and results used to investigate European-built stone walls in the south of the Reserve. This project is in partial fulfilment of the Mauao Historic Reserve Management Plan objective 5.1.2(j) ‘...encourage further archaeological research to identify and map unrecorded cultural and historic resources’; and will enable decisions relating to Action 1.11 (A repair programme for the area of stone walls adjacent to the stone jetty needs to be separately developed, taking into account the underlying archaeological features) to be made.

Shapefiles of the walls generated during this work will be supplied digitally.

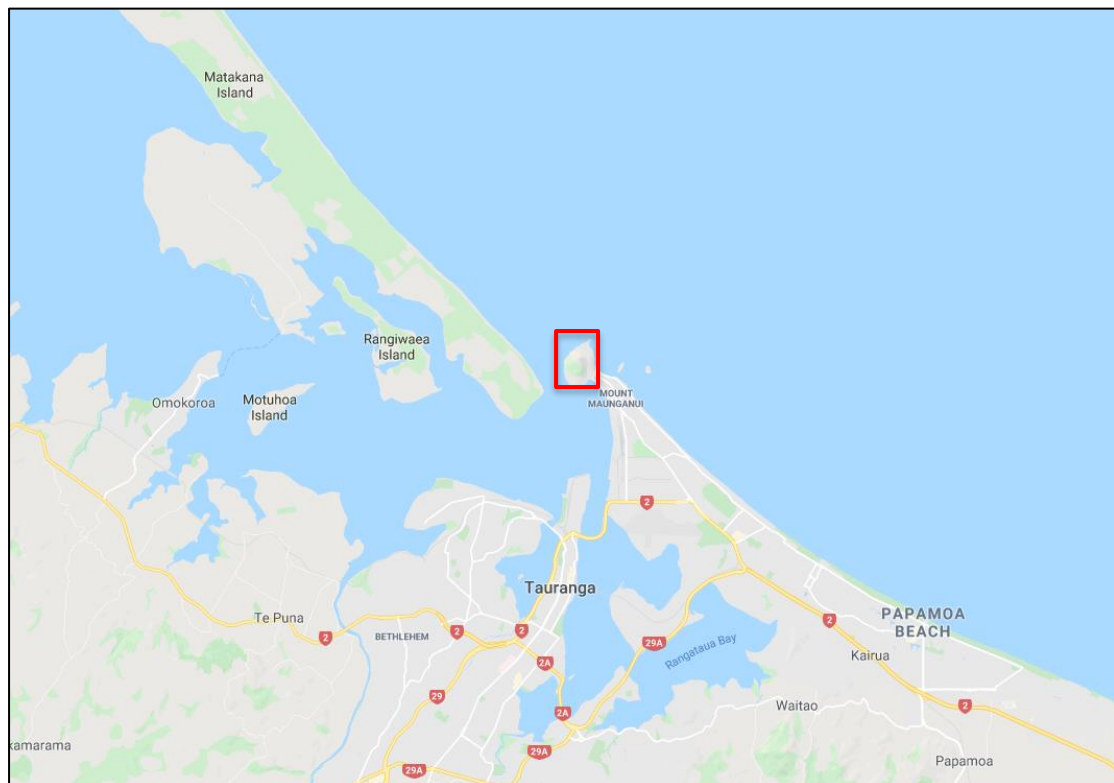


Figure 1 – Location of Mauao, within red rectangle (Source: Google)

2. Archaeological Background

Mauao Historic Reserve is a highly significant cultural and archaeological landscape in the Tauranga and wider Bay of Plenty region. The reserve contains four known defensive complexes represented by approximately 800-1,000 visible surface archaeological features including pits, terraces, platforms, house floors, shell middens and shell mounds (InSitu Heritage Ltd 2019). Archaeological features arising from the Maori occupation of Mauao are concentrated on the southern slopes, where there was access to good soils, springs, shellfish beds and safe anchorage (Phillips 2003).

The southern area of the reserve, near Pilot Bay, is also the major focus of European-era archaeological features, which form a key part of the human history of Mauao (Phillips 2003). The stone jetty (U14/361), iron jetty (U14/362) and Pilot House all relate directly to the broader maritime cultural complex of Tauranga Harbour. Phillips (2003) suggests the other historic feature in the Reserve, a set of stone steps located above the current motor camp and often attributed to military occupation of the area, may relate to earlier pilot houses in this area making this site also part of the maritime history of the Reserve.

3. Methodology

This research is made up of three inter-related components; remote sensing, field survey and archival research.

Remote Sensing

Remote sensing refers to a variety of techniques that capture geographic data without on-site observation. In this project we used two methods to identify potential archaeological features in aid of a targeted survey programme: aerial photography and Light detection and ranging (LiDAR). In the first instance we collected a range of modern and historic aerial photographs of Mauao (accessed *via* Retrolens.co.nz) and placed geo-corrected versions within the project GIS. These images were then searched and visible features were recorded as shapefile data.

The second method used was LiDAR. LiDAR uses rapidly pulsed lasers to develop a three-dimensional map of the ground surface, known as a digital terrain model (DTM). Further processing of DTMs into derived models allows archaeologists to detect and interpret archaeological landscapes, including those under heavy bush. In this project we sourced pre-processed DTMs of the Reserve from Land Information New Zealand's online data service (Linzdataservice.co.nz) from which two derived models were produced (slope and hillshade). These models were used as base maps to aid mapping.

Field Survey

A targeted archaeological survey of the stone walls within the Reserve was carried out to map the location and key characteristics of walls. Morphological characteristics, such as masonry style, of stone walls were recorded to establish a relative chronology or the presence of phases of wall construction. The field survey was carried out by [redacted] s 7(2)(a) - Privacy and [redacted] s 7(2)(a) - Privacy (In Situ Heritage Ltd) on 23 May, 2020.

Archival Research

A broad archival search, including of online resources and those in Tauranga City Library, was carried out on materials in order to determine if it was possible to establish the absolute date of wall construction and any information about the builders of the walls.

4. Results

The results of the field survey designed to map and record the walls are presented below followed by the historic aerial and archival review carried out to establish a chronology for wall construction in the Reserve.

Field Survey

The archaeological field survey involved locating, mapping and photographing the stone walls, noting any changes in masonry style. Figure 2 shows the extent and location of the eleven stone walls identified as part of the fieldwork.



Figure 2 – Modern aerial photograph with the stone walls identified as red lines.

Four separate styles of wall masonry each using a different type of stone were identified (Figures 3 and 4).

Group 1: Walls 1, 2, 3 & 4 located in the south of the Reserve (Figure 3; blue oval) consisted of sub-angular stacked rocks, approximately 300 x 100mm in size, with a rough

concrete layer on top of the wall and very sporadic mortar between the masonry. The walls were constructed by cutting back the hillside on the uphill side of the base track by ~300 mm, building a single-stone depth wall and then backfilling the area between the back of the wall and the cut. This area of backfill may contain evidence of the age of construction.

Group 2: Walls 5, 6 & 7 (Figure 3; orange oval) were constructed using larger sub-angular rocks, approximately 400 x 150mm, with a concrete layer on top of the wall and mortar used in between the rocks, both in construction and repair. The position of these walls going up a steep hill section with significant water runoff may have required the adaptation of methods used in the Group 1 to strengthen the walls in this group.

Group 3: Wall 8, 9 & 10 (Figure 3; green oval) uses rounded river cobbles, ranging from 70 x 100mm – 100 x 300mm, held together with mortar and a top layer of rough cement. Walls 9 and 10 both have smaller rounded rocks in the top layer of cement,

Group 4: Wall 11 (Figure 3; yellow oval) appears much more modern in construction, using uniformly sized and shaped rounded stones suspended in cement, with a layer of smooth cement on top the walls.



Figure 3 – Modern aerial photograph with differing styles of wall highlighted.



Figure 4 – Comparison of wall masonry styles. Clockwise from top left: Wall 1, Wall 5, Wall 8 and Wall 11.

Graffiti

Graffiti was present along the top of some walls, either carved into the rough cement layer or created by shells being pushed into the cement, see Figure 5. While this was presumably done by some of the individuals involved in the construction of the walls, no dates or definitive names were able to be identified. The shell used in this graffiti is likely taken from one of the many middens created during Maori occupation, which are often retained by the Stone Walls.

Stone Steps

There were also stone steps recorded in two separate locations along the stone walls, see Figure 6. One of these (further to the east, marked by yellow arrow) was mostly grassed over, but appeared to lead to a small platform. The second (indicated by blue arrow) is now covered over with a wooden staircase, but is still just visible underneath, see Figure 7. This second staircase is positioned between the stone jetty and probable location of the last Pilot House in the Reserve, which may suggest an early construction date for this feature, although this cannot be confirmed. Note: these stairs are **separate** from the stone steps recorded as (U14/250).



Figure 5 – Some of the shell graffiti featured in the stone walls at Mauao, this appears to be the letters “JA”.



Figure 6 – The location of two sets of stone steps identified as part of Stone Wall mapping exercise.



Figure 7 – Southern set of stone steps covered by wooden staircase (left). Grassed over set of stone steps located further east (right).

Historic Photographs

Earliest aerial photographs of the Reserve held on Retrolens date to 1943. The 1943 image (Figure 8) shows a series of tracks running toward the jetties, which historical photographs suggest were established in the late 19th century. The Pilot House site is also potentially visible, indicated by a blue arrow. The image is not clear enough to be able to detect any stone walls.

The 1978 historic aerial photograph (Figure 9) shows the establishment of the 4WD track, the sealed road to jetty, and the formalisation of the base track. The stone walls appear to be present where the sealed road has been established, further northeast from the jetties, but are not visible along the unsealed footpath base track.

Archival Research

Archival research has revealed no record of the stone wall construction. Drawing upon Phillips (2003) a rough sequence of European construction within the Reserve can be developed. The close association between stone walls and various tracks may mean that some indication of the age of walls could be taken from their relationship to these pieces of construction, although this is speculative.

- 1866 – First Pilot’s House constructed
- 1874/9 – Third Pilot’s House constructed
- 1886 – Iron Jetty and stone-faced landing constructed
- 1889 - Boulder Pier constructed
- 1895 – Pilot Bay Wharf constructed
- 1898 – Track to the summit of Mauao constructed
- Late 1800s – Stone Steps (U14/250)

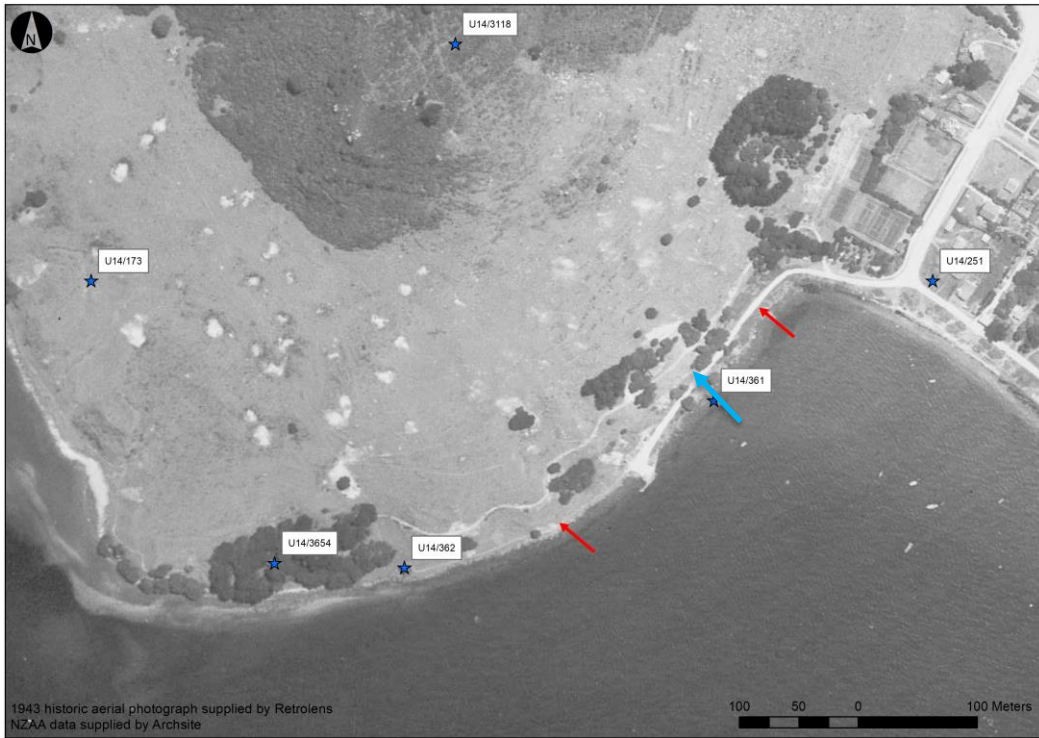


Figure 8 – 1943 historic aerial photograph with track and footpath location marked by red arrows.



Figure 9 – 1978 historic aerial photograph with track and footpath location marked by red arrows.

5. Conclusion

The entirety of the mapped walls in this report are located in the south-eastern quarter of Mauao, Figure 2. Historic aerial photographs show that the pathway lined by the current walls was in place by 1943 but it is not clear enough to depict the presence or absence of any stone walls.

By 1978 Walls 5 – 10 are present, but Walls 1 – 4 & 11 are not yet constructed. Which dates Walls 1, 2, 3, 4 & 11 to after 1978, and therefore not requiring any archaeological management or recording. In the case of Wall 11, the recent dating of the wall is reflected in the masonry style employed, but it is surprising Walls 1 – 4 are not older, purely based on the aesthetic of the construction.

For Walls 5 – 10 surmising a construction date is less clear. The set of stone steps now covered by a wooden staircase appears contemporary with the Stone Walls, but again, a date from these cannot be properly determined. Given the location, it seems possible that these stone steps could have been put in place to give access between the Boulder Pier and the Pilots House, putting a date from 1889 onwards, but this is purely speculation. The grassed over set of stone steps appear much older, due to their rough and overgrown nature, but unfortunately a date cannot be determined.

6. References

InSitu Heritage Ltd. 2019. *Mapping Mauao: Archaeological Mapping of the Mauao Historic Reserve*. Unpublished report to Tauranga District Council.

Phillips, K. 2003. *Preliminary Archaeological Survey and Identification of threats to archaeological resources, Mauao Historic Reserve*. Unpublished report to Tauranga District Council.

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