

ARCHAEOLOGICAL INSPECTION
AND CONDITION ASSESSMENT
MAUAO HISTORIC RESERVE

REPORT PREPARED FOR:

TAURANGA COUNCIL

BY

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Introduction

An archaeological survey of Mauao was carried out by Archaeology BOP in 2003 during which all visible archaeological features were mapped and the general condition of the archaeological resource assessed. In addition the 2003 report identified current and potential future threats to the archaeology.

This report was commissioned by Tauranga Council in order to determine the current state of the Mauao archaeological landscape and to identify any significant changes since 2003 and provide recommendation for ongoing management of the archaeological resource.

Relevant Legislation

There are two pieces of legislation that govern the protection and management of archaeological sites in conjunction with district and regional plans. Both Acts must be considered when assessing any development or land use proposal that may affect archaeological sites within an area.

The Historic Places Act (HPA) 1993 protects all archaeological sites whether recorded or not, and they may not be damaged or destroyed unless an Authority to modify an archaeological site has been issued by the New Zealand Historic Places Trust. An archaeological site is defined by the HPA Section 2 as 'any place in New Zealand that was associated with human activity that occurred before 1900, and is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand'. Authorities to modify archaeological sites can be applied for either under Section 11, in respect to a particular site or sites, or under Section 12, for all sites that may be present within a specified area.

In addition to any requirements under the HPA (1993), The Resource Management Act 1991 (RMA) provides guidelines and regulations for the sustainable management and protection of the natural and cultural environment. The RMA 1991 is the primary legislation that provides the mandate for local authorities to manage historic heritage resources. Sections 6 (e) & (f) of the 2003 amendment of the Act recognises matters of historic heritage as having national significance, and provides for the protection of such heritage from inappropriate development and use. By definition, historic heritage includes those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, this includes: historic sites, structures, places and areas; archaeological sites; and sites of significance to Maori. Under the RMA, local authorities have the responsibility to identify significant heritage areas, places, and objects in district plans and to provide an appropriate level of protection and management of these resources through associated rules and regulations.

Constraints and Limitations

This is a brief assessment of archaeological values and does not include an assessment of Maori values; an assessment of the cultural significance of an area can only be

competently made by the affected tangata whenua. Consequently, this report does not incorporate or discuss at length the recorded or unrecorded wahi tapu sites. It should be noted that archaeological survey techniques (based on visual inspection and minor sub-surface testing) cannot necessarily identify all sub-surface archaeological features, or detect wahi tapu and other sites of traditional significance to Maori, especially where these have no physical remains. Therefore an assessment of recorded or potential archaeological values will not necessarily correlate with an assessment of cultural values.

Results of 2003 survey and assessment

The 2003 archaeological survey report identified approximately 500 individual archaeological features on Mauao and concluded that the archaeology of Mauao is of local, national and international significance and constitutes the primary non renewable resource within the Mauao Historic Reserve. Significant threats identified during the survey included rabbit burrowing, pedestrian traffic, stock erosion and ongoing erosion caused by modern cutting for roads and tracks and infrastructure construction and maintenance including the western reservoir.

The 2003 archaeological report was prepared to provide an archaeological data base for the formation of Conservation Plan for Mauao.

Current status

In the decade between the 2003 archaeological survey and this report isolated effects on the archaeological landscape have occurred. Much of the damage to archaeological features has been caused by erosion during severe weather events, however, rabbit damage is equally if not more significant but less obvious. In addition to 'natural' influences the archaeological landscape has been affected by various infrastructure activities including the installation of a water main from Pilot Bay to the Reservoir, Fire fighting services, construction of post and wire fences, planting of areas formerly in pasture and areas affected by erosion, restoration / reconstruction of the stone steps and upgrading and general maintenance of the walking tracks. These activities have had various positive and negative effects on the archaeological landscape.

Erosion

Erosion on Mauao over the past decade has been dramatic particularly on the southern slopes and the eastern coastal escarpments. Significantly it has not been confined to the over steep coastal escarpments and the spring fed gullies but has occurred on the mid slope pastoral areas that have remained stable for the past 300 years.

The southern slopes where the main concentration of archaeological features are located has been most affected by the recent slips. While the slips have occurred on steeper sections of the southern slopes where few surface archaeological features have been identified the erosion has damaged or destroyed some surface archaeological features and has exposed a number of subsurface archaeological features. Slip material also buried archaeological features below the slip, however, most of this material has subsequently been removed.

The extensive erosion on the southern slopes has been attributed to significant rain events, however, it is unclear whether other factors such as stock tracking and or rabbit burrowing has contributed to the failure of otherwise stable slopes.

Erosion immediately above and below the base track has been ongoing, probably since its initial construction and it is expected to continue albeit to a lesser degree as remedial work including the construction of retaining walls continues.

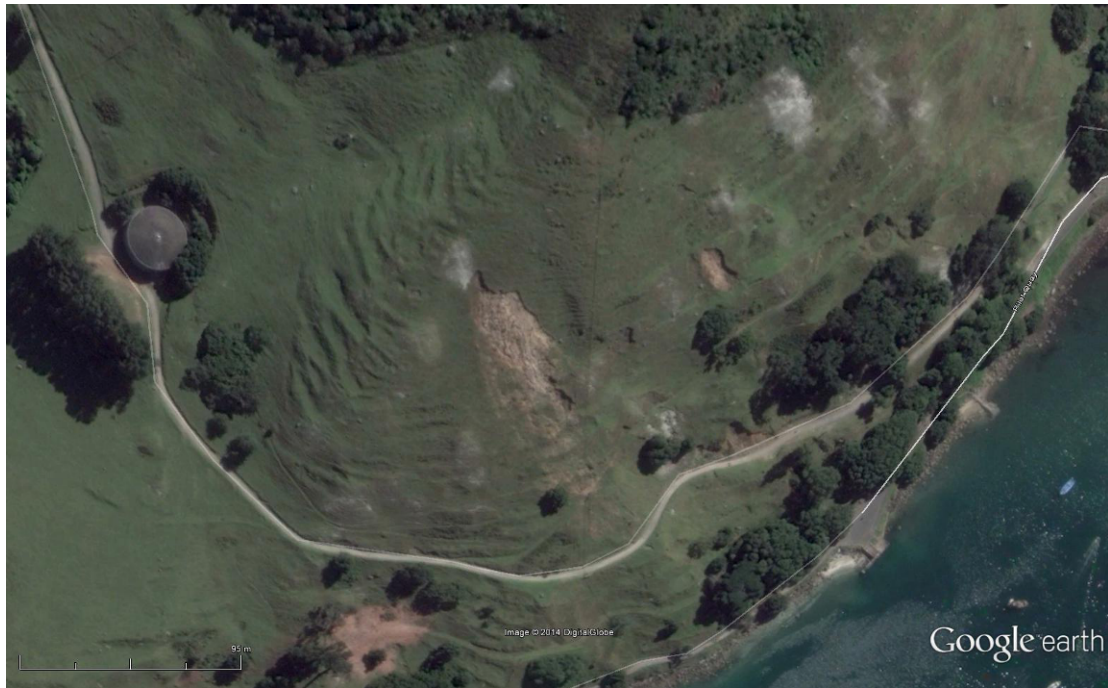


Figure 1. Aerial photo showing the erosion scars on the southern slopes that have occurred over the past 10 years.



Figure 2. Plan showing recorded archaeological features on Mauao. (K. Phillips 2003)

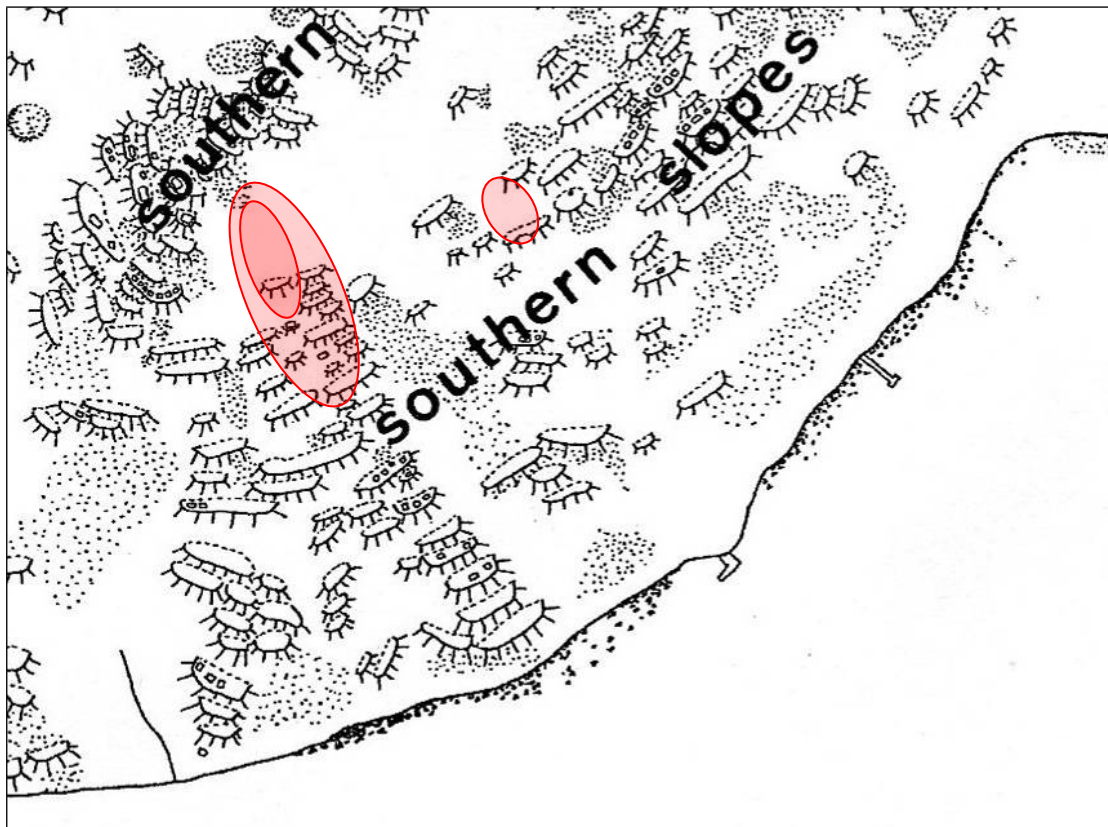


Figure 3. Plan showing recorded archaeological features on the southern slopes of Mauao. Significant erosion scars indicated in red (K. Phillips 2003).



Figure 4. Shell filled pit features exposed at the top of the large southern slip. (K. Phillips 2014)

Pedestrian traffic

The impact of increasing visitor numbers to Mauao has had surprisingly little impact on the archaeological landscape over the past ten years. Pedestrian traffic is almost entirely contained within existing track and road networks. Few visitors wander onto the areas of high archaeological site density and there is no evidence to indicate any adverse effects by off track movement. While erosion continues above and below the base track this is caused not by visitor numbers but by weather events and rabbit burrowing and to a lesser extent stock movement.

Retirement of the eroded track section on the summit has been successful and existing eroded sections on the summit do not appear to be getting worse. Pedestrian traffic on the summit is also largely confined to tracks and previously eroded areas.



Figure 5. Ongoing erosion of shell middens beside the base track. (K. Phillips 2014)



Figure 6. Photo showing successful retirement and re-vegetation of severe erosion are on summit. (K. Phillips 2014)

Management / Infrastructure

Maintenance and construction of infrastructure continues to have an impact on the archaeological resource. Much of this work has not affected the visual values of the landscape and archaeological monitoring of these projects has provided an opportunity to investigate components of the archaeological resource. The installation of the water main to the Reservoir in 2010, while involving significant earthwork, was installed along the existing 4WD track and appropriate restoration has meant that there is no visible evidence of the pipeline. Archaeology exposed in the trenches was recorded during the pipeline installation.



Figure 7. Water main installation 2010. (K. Phillips 2010)

Stock Management

The continued grazing of sheep on Mauao is vital for the maintenance and enhancement of the visible archaeological landscape. Poor stock management and overgrazing can, however, result in erosion of the archaeological features. This has been a problem in the past, however, over the past 10 years management has improved and stock erosion now appears to be negligible.

Stock movement along shaded fence lines continues to cause minor damage to archaeological features primarily where shell middens are exposed. Significant erosion caused by stock tracking beside fenced off middens adjacent to the 4WD track was identified in the 2003 archaeological survey report and is still disturbing midden deposits. It was recommended that these fences be removed or relocated.

Fencing

On the recommendation of the 2004 Management Plan Equally fences were constructed along the top of the south, east and western coastal escarpments. Unfortunately, in several places the fence alignment crosses significant archaeological sites in several areas and consideration should now be given to identifying alternate alignments around archaeological sites and assess wheter the construction of the new fence network has had the desired effect in regard to stock and pasture management.



Figure 10. Fence line crossing the western Pa (Kinonui's Pa). (K. Phillips 2014)



Figure 11. Photo showing fence line erected through 1860s Military Site. (K. Phillips 2014)



Figure 12. Fence erected on terrace features on southern slopes. (K. Phillips 2014)

Rabbits

Rabbits have been identified as a significant threat to Mauao for the past 60 years. In 1961 the Te Puke Rabbit Board carried out an extermination program on Mauao, however, by 1980 rabbit populations on the lower slopes was again out of control and considered a significant problem in the Mauao Management Plan produced in that year. Objective 3 of the revised Management Plan produced in 1998 recommended the implementation of an integrated pest control programme including ongoing control of rabbits. In 2003 the Archaeology Survey report identified rabbits as the most significant threat to archaeological features on Mauao and recommended an effective pest control strategy be implemented urgently.

During the November 2014 inspection of archaeological sites on Mauao the rabbit population appeared to again be a significant problem. Rabbit damage to archaeological features is now considered significant and continues to be the main threat to the Mauao archaeological landscape.

The current poisoning and shooting program is clearly ineffective and new more effective methods needs to be explored. Auckland Council have similar issues with rabbit populations on the volcanic cones. Recent successful eradication methods used on Ohinerau (Mt Hobson) involving the identifying the location of rabbit colonies using terriers followed by fumigation with magnesium phosphide and temporarily blocked with sand bags may be an option on Mauao. Following identification of the infested areas and prior to fumigation, the damage to archaeological features were recorded and photographed. The fumigations were followed by night shoots as not all rabbits were confined to burrows.



Figure 13. Large rabbit population on Mauao is the most significant threat to the stability and long term preservation of the archaeological landscape on Mauao. (K. Phillips 2014)



Figure 14. Rabbit and stock damage of midden feature beside 4WD track on southern slopes. (K. Phillips 2014)



Figure 15. Photo showing rabbit burrow into midden deposit on southern slopes. (K. Phillips 2014)

Summary / Conclusion

The archaeological landscape on Mauao has by and large remained stable and unchanged for 300 - 500 years, however, its increasing popularity as a passive recreation reserve has had a significant effect on the archaeological fabric of Mauao. Damage caused by erosion during major weather events is unfortunate but closer examination of the causes is required given the apparent long term stability of the slopes prior to May 2005.

Perhaps surprisingly, the effects on the landscape by pedestrian traffic appear to be negligible and this must be attributed to the ongoing maintenance and enhancement program of the existing track network. However, the need to accommodate increasing numbers of visitors will place increasing pressure on the fragile archaeological resource. Visitor management in the long term will be aided by the excellent track network but must also be directed by a Conservation Plan that recognises the principal cultural and archaeological values of Mauao.

The installation and maintenance of facilities and infrastructure on Mauao continues to damage components of the archaeological landscape but appropriate mitigation programs most often limit damage, however, the maintenance of old and installation of new structures should always be assessed for potential direct or indirect impact on the archaeological landscape.

By far and away the most significant negative impact on the archaeological landscape is the infestation of rabbits that now appear to be out of control. Eliminating the rabbit population on Mauao should be given priority.

Recommendations

- That priority is given to the eradication of rabbit populations on Mauao.
- That fences encircling midden deposit adjacent to the 4WD track are removed or extended.
- That the effectiveness of stock control and vegetation management of the recent fence construction is reviewed. That alternate fence lines off archaeological site are identified and the offending fences relocated.
- That all management projects on Mauao involving ground disturbance are assessed by an archaeologist and monitored as appropriate.

Other Considerations

This is a brief assessment of the state of the archaeological landscape on Mauao and does not include an assessment of Maori values. Such assessments can only be made by the tangata whenua as Maori concerns may encompass a wider range of values than those associated with archaeological sites.