



# InSitu

Heritage Ltd

## **Archaeological Assessment of Morrison's Forest, Aotea**

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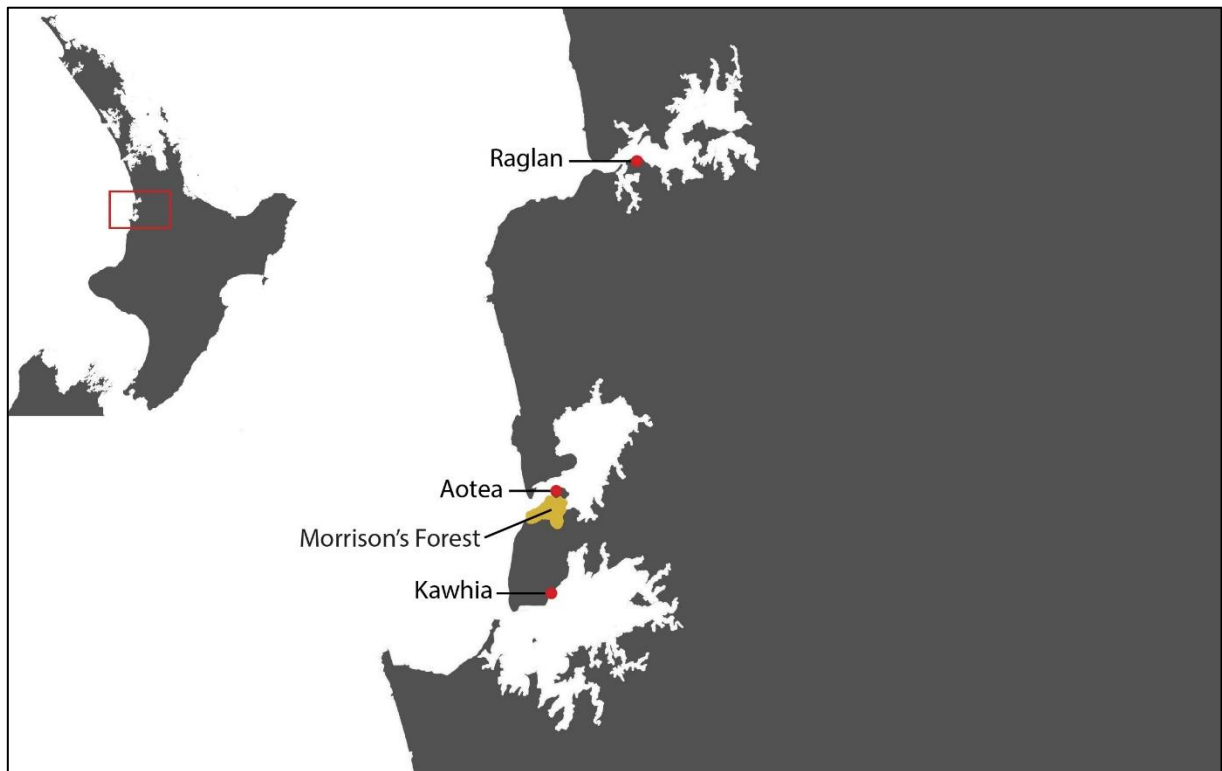
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## 1. Introduction

Hancock Forest Management Ltd is currently planning harvesting operations at Morrison's Forest, Aotea (Figure 1). The forest contains 27 previously recorded sites (Figure 2), and an additional six sites were identified in the current survey.

The forest is also immediately adjacent to Hawaiki iti – a landscape of considerable cultural importance to mana whenua, particularly Ngāti Te Wehi and Ngāti Patupo. In Situ Heritage Ltd were commissioned to carry out an archaeological assessment of the forest prior to harvest. This report presents the results of desk and field-based survey of the forest and provides advice to mitigate the impact of harvesting on sites. The report is concerned with physical evidence of past human activity; advice about Māori cultural values should be sought from iwi/hapū representatives.



**Figure 1** -The location of Morrison's Forest, Aotea.

## 2. Statutory Requirements

Heritage New Zealand administers the Heritage New Zealand Pouhere Taonga Act 2014. The Act makes it unlawful for any person to modify or destroy, or cause to be modified or destroyed, the whole or any part of an archaeological site without the prior authority of Heritage New Zealand. Any

work that may affect an archaeological site requires an authority from Heritage New Zealand before commencement.

This process applies regardless of whether the land on which the site is located is designated, or the activity is permitted under the District or Regional Plan or a resource or building consent has been granted. The Act provides for substantial penalties for unauthorised destruction or modification.

An archaeological site is defined in the Heritage New Zealand Pouhere Taonga Act 2014 as any place in New Zealand (including buildings, structures or shipwrecks) that was associated with pre-1900 human activity, where there is evidence relating to the history of New Zealand that can be investigated using archaeological methods.

The archaeological authority process applies to all sites that fit the legal definition, regardless of whether:

- The site is recorded in the NZ Archaeological Association Site Recording Scheme or recorded on the New Zealand Heritage List
- The site is not recorded and only becomes obvious because of ground disturbance
- The activity is permitted under a district or regional plan, or a resource or building consent has been granted.

The Resource Management Act 1991 requires City, District and Regional Councils to manage the use, development, and protection of natural and physical resources in a way that provides for the wellbeing of today's communities while safeguarding the options of future generations.

### 3. Methodology

Archaeological assessment of the project area involved two phases of investigation: desktop research and field survey. Desktop research was carried out to identify the nature and location of any unrecorded sites in the forest. This involved inspection of derived models (hillshade and slope) of LiDAR data supplied by Hancock Forest Management Ltd and historic aerial photographs.

The field inspection consisted of a pedestrian survey of recorded sites, areas identified as possible sites via the desk top research, and landforms regarded as likely to contain archaeological features.

## 4. Background

### 4.1 Archaeological Background

Morrison's Forest is located on Aotea South Head, near the township of Aotea (Figure 1). Aotea Harbour is associated with rich oral traditions, which detail the early landings of the Aotea and then Tainui waka as well as the exploits of their famous crews. Selected traditions have recently been compiled by McIvor and Forde (2020) as part of an application for wāhi tapu registration (Heritage

New Zealand Pouhere Taonga Act 2014) for an area known as Hawaiki iti (little Hawaiki) located in the wetland to the east of the forest. Hawaiki is a name of particular significance to Polynesians, representing their spiritual homeland (Kirch and Green 2001). Hawaiki iti was occupied by Whakaotirangi, the wife of the captain of the Tainui waka, Hoturoa (McIvor and Forde 2020). Whakaotirangi sought a place to establish crop species carefully curated during the voyage to Aotearoa/New Zealand. The taro patches in the area are regarded as the remnants of Whakaotirangi's taro crop – providing an invaluable link to the past.

Taro is also present in small amounts in the wetland south of the village of Aotea known as Te Puna o Te Korotangi. This area was probably also used for gardening; however, it is better known as the location where Te Korotangi was re-found. Te Korotangi is a bird figure carved from serpentine, which is believed to have been carried to Aotearoa from Hawaiki in the Tainui waka, and is of considerable cultural importance to Tainui iwi.

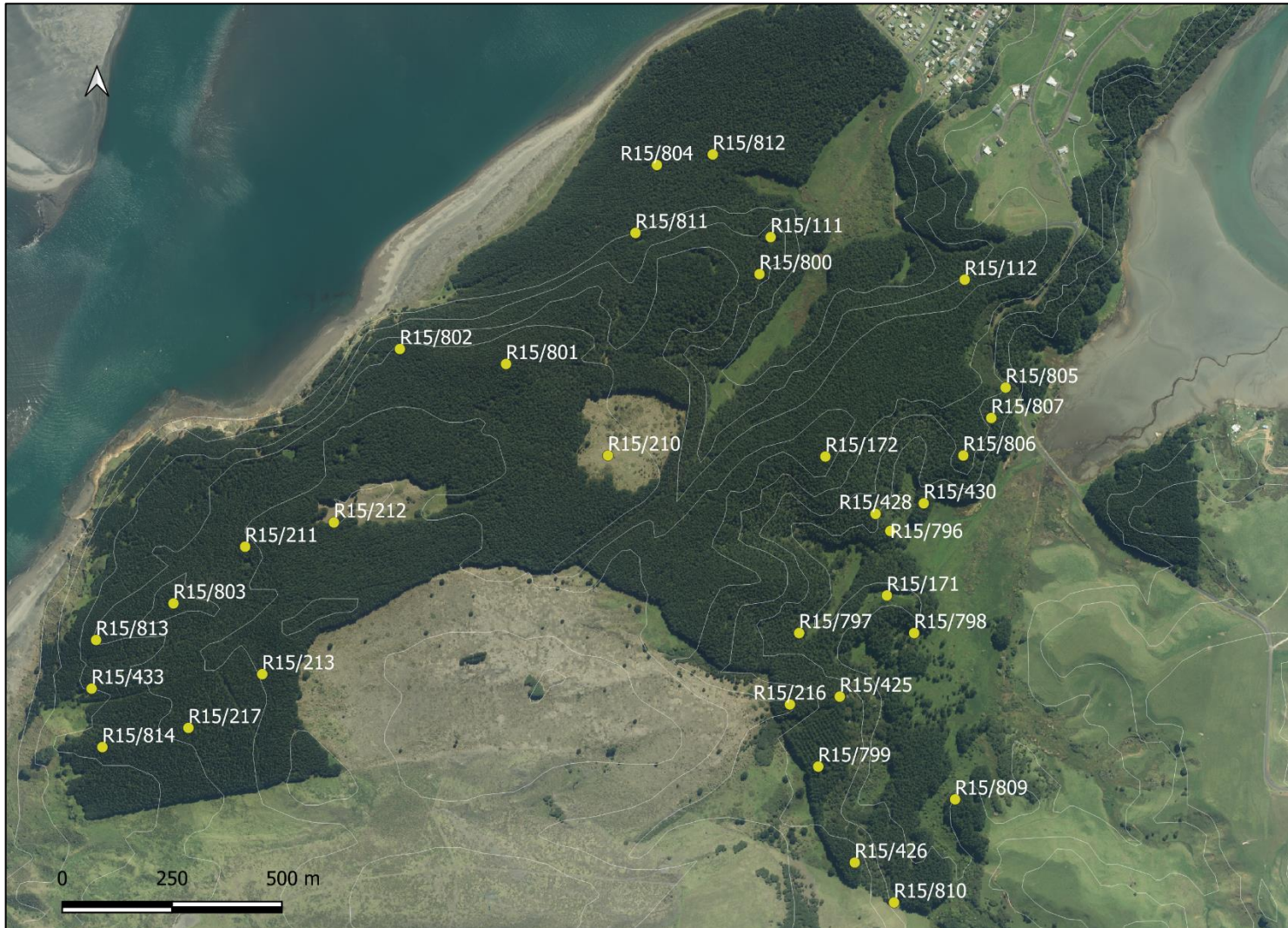
Early settlement of Aotea is well supported by archaeological evidence. Anderson (1989) records early sites at Raglan, Aotea, and Kāwhia Harbour mouths. These sites appear to be part of a broader early settlement of the west coast of the North Island in which many dunes adjacent to water courses were occupied by small groups (Wilkes 1995). Early sites along the west coast appear to be linked; obsidian artefacts from similar sources and Raglan chert are consistently present in early sites between Port Waikato and Paekakariki (Brown and Pitman 2019).

McIvor and Forde (2020) state that there is limited record of conflict in the Aotea area before the 16<sup>th</sup> century. Again, this appears consistent with growing population density (Brown and Crema 2018) and the beginning of pā construction in the north (Schmidt 1996). Many of the features present in the archaeological landscape around Morrison's Forest probably relate to this later period, particularly the three pā sites within the block.

Archaeological investigations around Aotea Harbour have typically focussed on this later period. Fox and Cassels (1983) carried out excavations on the Aotea North Head, revealing a collection of 'open settlements' on terraces, where a range of domestic activities were carried out, including storage. Walton's (1983) study of Aotea North Head found large areas of made soil, which included sand quarried from borrow pits in the area. These soils were developed from the 16<sup>th</sup> century and would have supported extensive kūmara gardens (Walton 1983). As well as gardening, Māori exploited the local marine environment and traded for materials (e.g., obsidian) from outside the immediate area (Fox and Cassels 1983).

Archaeological investigation on Aotea South Head is limited to site survey and small-scale excavation of sites on the escarpment above Aotea township (Gumbley and Harris 2006, Gumbley and Sutton 2016; Keith 2018). These excavations have revealed little in terms of archaeological features, but have provided evidence of the local foraging economy and late period occupation.





**Figure 2:** Aerial image of Morrison's Forest showing recorded archaeological sites in the forest (yellow dots). (Source: LINZ, NZAA, In Situ Heritage).

## 4.2 Previous Archaeological work in Morrison's Forest

Sites have been recorded at Morrison's Forest over the last 50 years. Initial recording was carried out in the 1960s, but the first major survey was carried out by Coster and Johnston in 1978 (Coster 2016) resulting in seven sites being identified. In 1995, Owen Wilkes mapped the pā within the current extent of the forest and identified several other new sites. John Coster carried out a re-survey of the block prior to planned harvest in 2016 and 2017.

## 5. Results

The archaeological assessment of Morrison's Forest consisted of two phases of work: desk-based remote sensing and field survey.

### 5.1 Remote Sensing

Remote sensing methods, in particular manual searching of LiDAR derived models, were used to supplement the field survey. Manually searching these models revealed several areas where the presence of unrecorded sites was regarded as possible. The majority of these features appeared to be isolated terrace sites present on secondary spurs; field inspection subsequently determined all but one of these areas were non-sites.

One area of interest was located at the seaward end of a large dune ridge (Figure 2, R15/813); field inspection confirmed the presence of a site. All other new sites were recorded solely on the basis of field recording.

### 5.2 Field Survey

Morrison's Forest was surveyed by Dr Andrew Brown and Josie Hagan (In Situ Heritage Ltd) with assistance from Sarah-Jane Luoni (Hancock Forest Management Ltd) and Zac McIvor between 30<sup>th</sup> November – 2<sup>nd</sup> December 2020. The survey visited all previously recorded archaeological sites, carried out targeted inspection of areas identified in the remote sensing exercise, and surveyed areas identified in the field as possible locations of unrecorded archaeological sites. Locations of harvest infrastructure, particularly skids and hauler pads, were also inspected.

For ease the following site description and condition notes are divided into two groups: western sites in the predominantly dune environment and eastern sites on the relatively stable ground overlooking Hawaiki iti.

#### Western Sites

**R15/804** is a concentrated shell midden on a low mound within the low-lying area to the north of the forest. The midden was not relocated during survey due to large amounts of pine needles covering the ground surface. Historic aerial photographs and the confirmed presence of two other midden in the area suggests large amounts of midden is present in the low dunes to the north of the forest, which may be uncovered during harvest.

**R15/111** is a well-preserved pā on a headland overlooking a swamp immediately south of Aotea township. The site consists of a main elevated platform with two large terraces extending around its north and west, large pits are clearly present on the upper terrace. Smaller terraces run down the northern spur toward the wetland below. The site remains in excellent condition and has been marked, the upper platform has been excluded from planting but much of the rest of the site has been planted. Peripheral trees can be removed with minimal impact on features using high-stumps and directional felling. Trees on the western portion of the terraces may be able to be reached and removed by machine with minimal surface damage; however, slewing is likely to occur in order to reach trees in the northern section of the large terraces. Trees that cannot be removed without damage to archaeological features must be felled to waste. A specific harvest strategy should be developed for this site.

**R15/800** consists of two dense midden deposits immediately uphill from R15/111. One deposit appears to be in-situ and the other is a diffuse scatter of shell on the surface. The periphery of the deposits is marked with yellow tape, some trees are within the taped zone. The site is small meaning trees can easily be accessed without entering the site boundary. Lifting and shovelling felled stems away from the site will cause no disturbance to the site.

**R15/210** was originally recorded as a large scatter of midden, flakes and oven stones in an area of active dune within what is now Morrison's forest. The area is now stabilised and unplanted and only a diffuse amount of midden was noted on the surface during the 2020 survey, although Coster (SRF) asserts sub-surface material is likely. The site extent recorded by Coster on the basis of aerial photographs (Figure 3) is within an unplanted section of the forest. Therefore, planned harvesting will have no impact.

**R15/801** is a single pit and terrace recorded on a dune ridge in the west of the forest. The site is clearly marked and no trees are present directly on the features. The features are in poor condition and are difficult to discern on the ground. Planned harvesting will have no impact.

**R15/802** is a midden in section in the cliff edge to the west of the forest. The site is clearly marked and no trees are present directly on the deposit. Harvest operations will have no impact on the site.

**R15/212** is a surface deposit of midden, oven stones and occasional flakes. The scatter was observed in an isolated sand blowout in the southwest of the forest in an area that is unplanted. Coster suggests the site is largely eroded, although subsurface material cannot be ruled out. The 2020 survey found fragmented surface scatters of shell midden restricted to the unplanted area. Harvest operations will have no impact.

**R15/211 appears to be a replicate site record.** No sites were observed at the supposed location of the site by Coster 2017 or during the 2020 survey. The site description is consistent with R15/803.

**R15/803** consists of pits and terraces on a natural high point along a dune ridge in the west of the forest. The site contains at least 3 – 4 pits, each approximately 2 x 3m x 200mm deep. The pits are infilled and have some damage and the nearby terraces may have had machinery on them at some



point. The site is clearly marked, but trees are present across many of the features. Most trees can be accessed and lifted off features by machine or directionally felled away from features, meaning impact to the site will be low. Trees in the middle of the site may have to be felled to waste.

**R15/433** is a dense midden eroding from the end of a spur on the western edge of the production forest. The midden is not planted, although the high ground above it is; this area may have some subsurface archaeological features. The site was clearly visible during the 2020 survey, it is largely in grass, although some sections of the spur are eroding. The amount of midden is indicative of intense occupation of the landform, which was likely to extend into the area that is planted. Harvest operations are likely to uncover further midden deposits.

**R15/213** was originally recorded as a large, sparse midden scatter with some oven stones. Both Coster's 2016 survey and the 2020 survey found no surface evidence of the site. It is likely to be eroded, although pockets of subsurface material are possible. The recorded area of the site is planted and harvest may result in some disturbance to the site.

**R15/217** is recorded as two hillocks of midden material in the southwest of the forest. The 2020 survey found the site was clearly marked, with in situ shell still present within the site buffer. No oven stones or stone flakes were noted. The site is eroding and is in fair condition. All trees on the features can be accessed by machine from outside the site buffer therefore harvest operations will have no impact.

**The site record form for R15/217 notes that kōiwi (human remains) were found on the dune surface around this site. Bones were not in situ; however, extreme care should be taken with harvest operations in this area.**

**R15/812** is a small patch of midden located on the low ground to the north of the forest. Visible sections seem to have been cast up by tree root action and further subterranean deposits are likely to be present. The dense ground coverage in the area makes accurate assessment of the condition difficult. Harvesting activity may expose additional midden in this area and across the large flat area at the north of the forest.

**R15/811** is a midden exposed in a forestry track leading up onto the high ground from the low dunes to the north of the forest. The midden has an in-situ section around 5m in length, but previous machine tracking has distributed material across a larger section of the track. Any track upgrades are likely to destroy the remainder of the in-situ midden.

**R15/813** contains two terraces at the foot of the dune ridge on which R15/803 is located. The lower terrace is large (10 x 5 m) while the upper terrace measures around 3 x 5m. Midden is eroding down the face between these two terraces. Further up the ridgeline appears to have been flattened, this may be another terrace area, but may also be natural. The features are in good condition, although they are all planted. Directional felling and using machines to lift trees off features will mean no damage is cause to most of the site. Some trees in the core of the site may have to be felled to waste.

**R15/814** is a small midden exposure on a low hillock to the west of R15/217. The site has not been marked and has been planted. A single tree is within the site boundary, which can be felled without impact on the archaeological site.

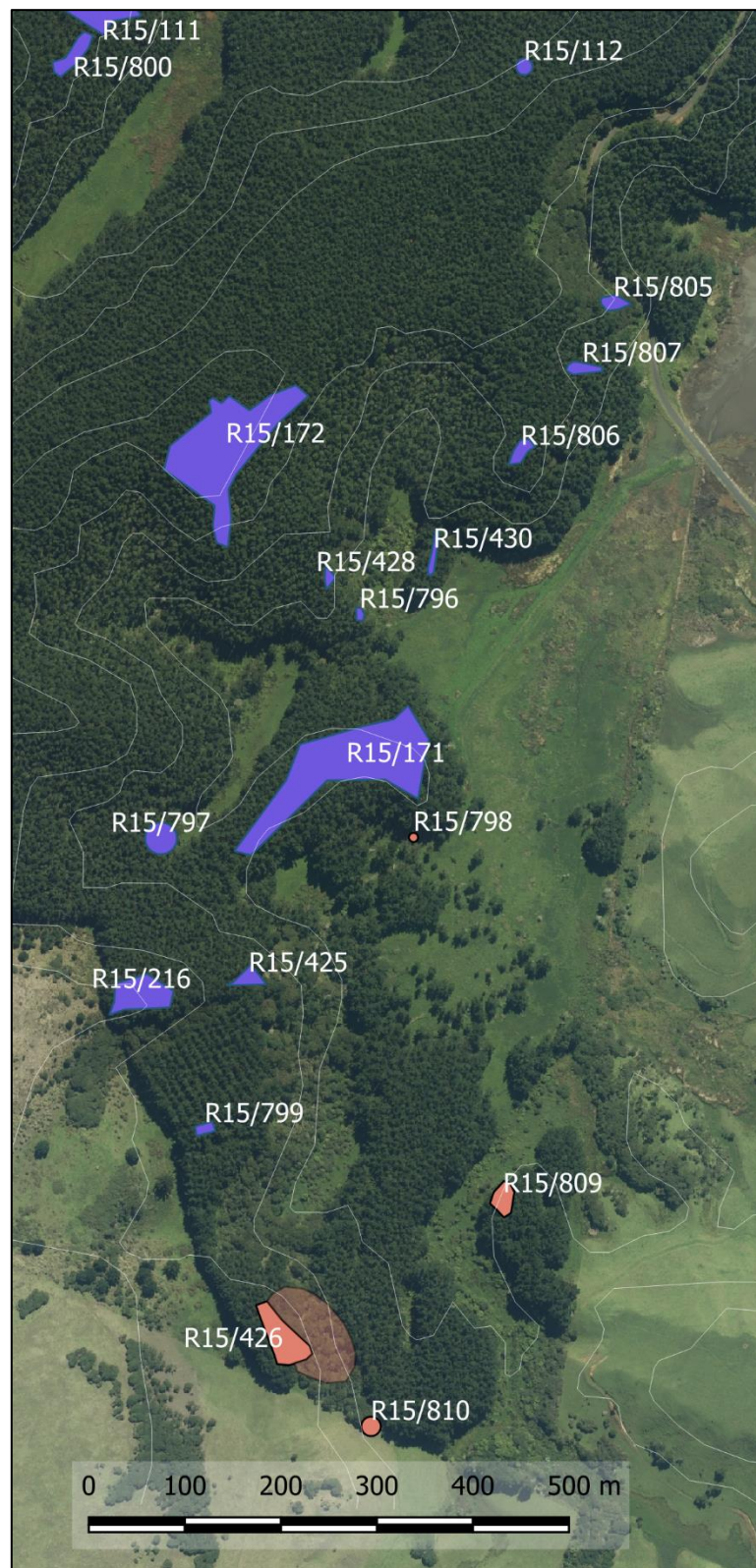


**Figure 3** – Sites located in the west of Morrison’s forest, red sites are currently unmarked, blue sites are marked (Source: LINZ, NZAA, InSitu Heritage).

### Eastern Sites

**R15/112** is a cave rua cut into a rock face on the northern aspect of a large ridgeline. The rua is in excellent condition. It has two ‘bays’, possible petroglyphs, and clear toki marks on its walls. The site is clearly marked and directional felling will ensure no damage to the site during removal of nearby trees. It is recommended that further marking is carried out uphill from the site to ensure no trees are dropped into the area of the site.

**R15/805** is a small terrace site overlooking Morrison’s Road. The site is in good condition and is largely outside the forest boundary in a stand of indigenous bush. Adjacent trees can be easily felled away from features. Harvesting will have no impact on the site.



**Figure 4** – Sites located in the east of the forest, red sites are currently unmarked, blue sites are marked (Source: LINZ, NZAA, InSitu Heritage).



**R15/806** consists of two terraces located on a natural knoll overlooking the wetland to the east of the forest. The site is marked and planted; however, the terrain in this area and the relatively small size of the features means directional felling and lifting stems off the site will be sufficient to cause no damage.

**R15/807** consists of a possibly natural terrace that has been utilised by Māori. On the downhill (eastern) slope of the terrace a large scatter of midden is present, which appears to have been cast down the hill. Pine trees are present on the terrace and down the steep slope. Planned harvesting activity will have no impact on the terrace feature, but may disturb intact midden deposits.

**R15/172** is a rectangular pā site located on a high spot of one of the major ridges running north from the Pukeatua trig. The site consists of a rectangular shaped main platform, with subtle indications of further divisions. A bank and terrace run around the north and west of the site, while the naturally steep topography is utilised to the south and east. To the south east of the main platform a flight of terraces runs down the ridgeline; no clear evidence of pits is present on the site. The site is in excellent condition, it is clearly marked; but has been fully planted. A specific felling strategy will be required to minimise ground disturbance in this area.

**R15/428** is a small terraced area downhill from a forestry track that sidles around the hill bordering Hawaiki iti. The terrace contains a probable pit approximately 4 x 4m next to a dead wilding tree. The site is not planted; harvest will have no impact on the site.

**R15/430** is a pit/terrace site located on a low spur immediately to the west of the Te Kowiwi stream. The site is in good condition, is well marked and is planted. The current harvest plan calls for trees to be moved uphill from the site via hauler. Dragging of stems across the site is likely to impact the archaeological features. Rigging a tail tree in this area may provide sufficient lift to minimise disturbance.

**R15/796** is a small pit/terrace site located on a ridgeline below R15/172. The pit is approximately 100mm deep and ephemeral. The terrace is in good condition and is not planted, although a wilding pine is present, which should be felled to waste. Harvest will have no impact on the site.

**R15/171** is a pā site located on the end of a narrow spur overlooking the Te Kowiwi Stream. The site is unplanted (although some wilding pines are present), and largely in grass. The main platform is separated from the spur with a large ditch and bank, inside these defences a large number of rectangular storage pits are present and in good condition. The southern slope of the pā contains no features and is planted; but will be difficult to harvest due to the presence of the pā (above) and taro (below). Trees in this area may have to be felled to waste.

**R15/797** the site consists of a single pit and terrace on a low-lying small spur northwest of R11/171. The site is in fair condition, with some surface erosion causing features to become indistinct. The site is clearly marked and is small enough that trees can easily be removed with no ground disturbance.

**R15/798** is several stands of taro, regarded as remnants of early Polynesian cultivation in the area. Plants are located in a number of patches to the west of the wetland area, but are in particularly good

condition south of R15/171 where they are found adjacent to running water. Much of the taro is located outside the forest; however, some stands may be impacted by hauler operations in this area.

**R15/425** is a midden/terrace site on a spur directly below (east) of R11/216. The site was originally recorded as a midden, but in his update Coster included a singular terrace. Like Coster's survey, the 2020 survey did not find the midden, but the terrace was present, although it was not clear. The terrace is marked, trees are largely excluded, but are present on the southern margin. Harvest operations around this site should cause no ground disturbance.

**R15/216** consists of at least four terraces on a small spur overlooking pā site R15/171 to the east. It is also immediately to the west of R11/425. The site is clearly marked and is planted. One terrace is clear, but further terracing is ill-defined. The discrete nature of the site mean that harvest operations should have minimal impact.

**R15/799** is a collection of four open rectangular pits located on a thin ridge near the boundary of the forest. The pits are generally clear and in good condition, although one pit is filled and ill-defined. The site is in good condition, it is clearly marked, but has been planted. The discrete nature of the features and local topography mean that harvest operations should have minimal impact.

**R15/426** is located on a wide, flat piece of high ground in the south of the forest. The margins of the hill have large amount of in-situ and redistributed midden with associated charcoal. No features are clear on the top of the hill, although the large amount of midden on the slope below the flat natural platform is highly suggestive of occupation. Felling and dragging stems across the slope of the site is likely to impact several small in-situ midden deposits. Moreover, while no surface features are present it is possible that ground disturbance on the top of the landform will uncover further archaeological deposits.

**R15/809** is a single terrace on the western side of a flat spur that projects into the surrounding swamp. No features were observed on the flat area behind the terrace, although the nature and location of the landform are consistent with occupation, which may have resulted in subterranean features. The slope below the terrace has a large amount of eroding midden. The site is in good condition, the visible terrace is not directly planted on and nor is the slope on which the midden is located. The current harvest plan indicates that felled stems will be shovelled north past/over the site. Although there is a relatively small amount of wood in this stand a route should be identified that avoids the site and minimises ground disturbance on the top of the landform.

**R15/810** is an eroding midden, probably related to R15/426, which lies just outside the boundary fence adjacent to a small area of native. Harvesting will not impact the site.

## 6. Assessment of Archaeological Value

Archaeological values relate to the potential of a place to provide evidence of the history of New Zealand (Gumbley 1995). This potential is framed within the existing body of archaeological knowledge, and current research themes and questions relating to understanding New Zealand's past (Walton 2002).

Morrison's Forest lies within a significant cultural and archaeological landscape. Aotea harbour is noted as a place of early settlement in Aotearoa/New Zealand both archaeologically and via oral traditions. Eroded material in the dunes near Morrison's forest has yielded evidence consistent with small-scale settlement of the coast in the early period. Oral traditions suggest Aotea harbour was a hub of early landfalls and name Hawaiki iti – immediately adjacent to Morrison's Forest – as an early site for the establishment of Polynesian crops. The continued presence of taro in the area directly contributes to the cultural importance of this area by providing a direct connection to the tupuna of local Māori. This area is also significant archaeologically. Despite the significance of crops to early communities, evidence of gardening from this period is limited. Thus, any information gained from this area has the potential to contribute a great deal to the archaeological understanding of crop establishment in northern New Zealand.

Many of the sites within Morrison's Forest are likely to relate to the latter part of the pre-contact Māori sequence. From an archaeological perspective relatively, little is known about Māori occupation around Aotea Harbour, therefore the pattern of archaeological sites in Morrison's Forest has the potential to contribute to a better overall understanding of settlement and land use during this time. Likewise, the numerous middens offer an opportunity to understand the foraging component of the economy during this time.

## 7. Assessment of effects

### 7.1 Tracks

Harvesting activity will largely rely upon existing bulldozed tracks, which significantly lowers the potential for impact of harvest infrastructure. Operations within existing tracks are unlikely to cause damage to recorded or subsurface sites as these areas are previously disturbed, but ground disturbance associated with widening has a high chance of encountering buried archaeological features, primarily midden. In particular, road widening in the vicinity of R15/811 will impact intact archaeological features. It is also highly likely that track works in the dune areas to the west of the forest may expose small areas of intact midden.

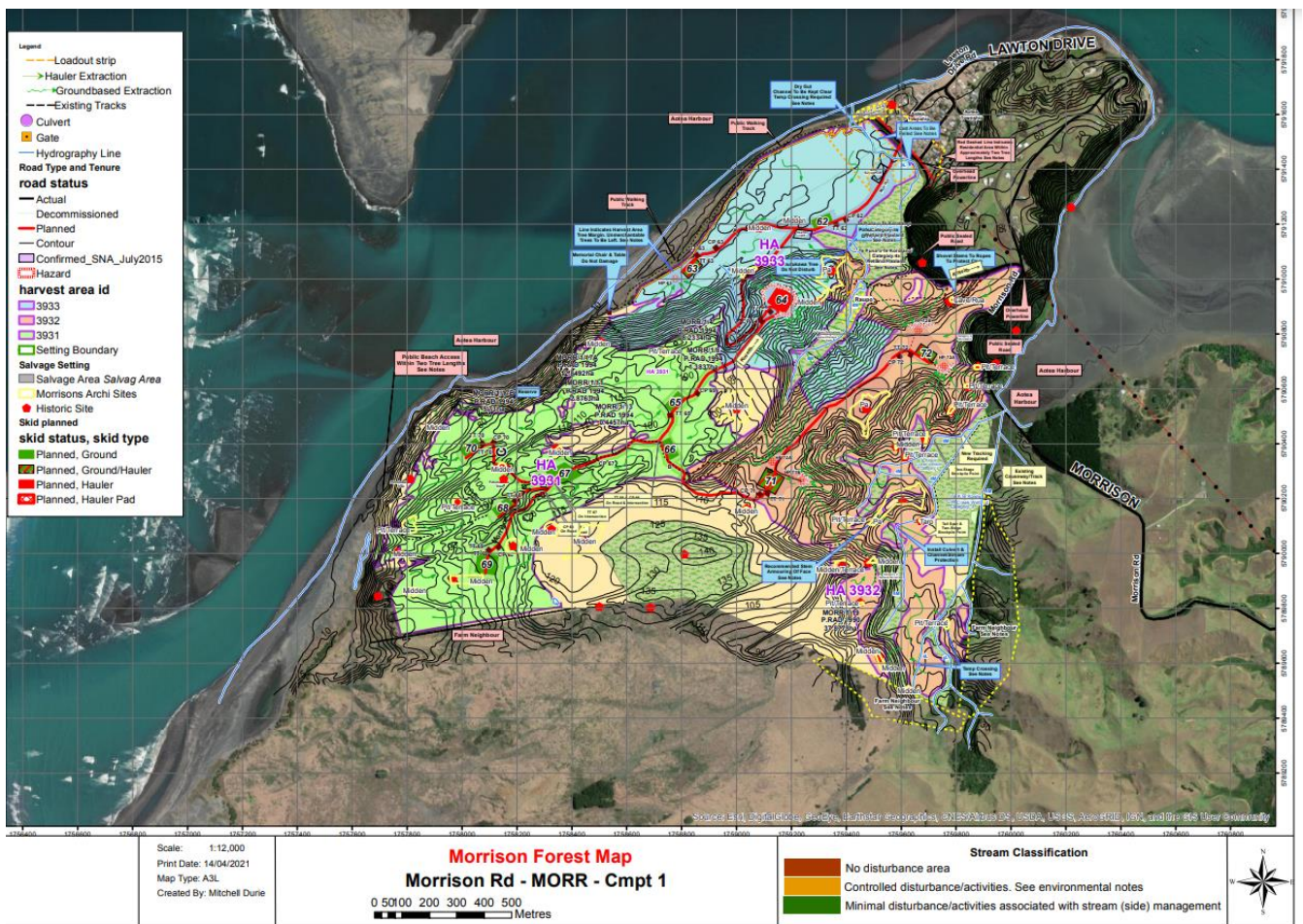


Figure 5 – Harvest plan of Morrison’s Forest. (Source: Hancock Forest Management Ltd). A large scale copy to be supplied separately to Heritage New Zealand.



## 7.2 Skids

The harvest plan indicates a maximum of 11 skids are planned (Figure 5). They are planned for relatively flat locations where earthworks can be minimised. No skid sites are planned on recorded archaeological features, and no features were observed in these areas during ground survey. Like roading, establishment of skids in the west of the forest may encounter midden material. Skids on high ground by recorded pā sites are not located on recorded sites but are in locations where subterranean features – particularly storage pits – are possible. In these areas it is recommended that material is imported to the skid, to minimise new ground disturbance.

## 7.3 Harvesting

Machine movement and extraction of felled trees during harvest has the greatest potential to impact archaeological features. Several sites have not been planted, or are compact; so, felling will have minimal impact. In most cases harvesting impact can be mitigated by directional manual felling or machine-based felling, whereby the tree is felled away from or lifted off features. A list of these sites is provided below (Table 1).

**Table 1** – Archaeological sites with low risk of impact during harvest.

Site Name	Site Type	Marked (Y/N)
R15/112	Cave rua	Yes
R15/210	Midden/oven stones	No
R15/211	Pit/terrace	No
R15/212	Midden/oven stones	Yes
R15/213	Midden	No
R15/216	Midden/terrace	Yes
R15/217	Midden	Yes
R15/284	Pit/terrace	Yes
R15/425	Midden	Yes
R15/797	Midden	Yes
R15/796	Pit/terrace	Yes
R15/799	Pit/terrace	Yes
R15/801	Pit/terrace	Yes
R15/802	Midden	Yes
R15/804	Midden	No
R15/805	Pit/terrace	Yes
R15/806	Terrace/midden	Yes
R15/807	Terrace	Yes

R15/809	Pit/terrace/midden	No
R15/810	Midden	No
R15/814	Midden	No
R15/812	Midden	Yes

R15/111, 172, 426, 430, 433, 800, 803, R15/811 and R15/813 are relatively large sites that are partially or completely planted and are at risk of damage if felled stems are dragged across features or machines enter the site perimeters without caution. Each site will require a clear harvest strategy to be developed in consultation with the approved archaeologist in order to remove trees with minimal ground disturbance. Where this cannot occur, it is recommended that trees are felled to waste.

The current harvest plan requires that trees in the southeast of the forest are shovelled to a staging point near R15/798 (taro) and then extracted via to hauler pad HP 71B (Figure 5). This requires stems be lifted over a wetland with taro and across a narrow neck of land between pā site R15/171 and the high ground to the south (Figure 5). The proposed drag area has been selected to minimise damage to the pā and taro. It has previously been crossed with a track and has no visible archaeological features. Where present features in the immediate area are very clear on the surface, suggesting the absence of visible features in the proposed drag area reflects true absence. Nevertheless, a large gouge would detract from the values of R15/171 and consideration should be given to some form of surface armouring in this area. A prior investigation of this area as part of the general archaeological authority could also be possible if impact cannot be avoided.

Trees to the south of R15/171 cannot be removed over the site and, due to the presence of taro, also cannot be removed over the wetland. In these areas it is recommended planted and wilding pines are felled to waste.

## 8. Recommendations

The following recommendations are made to avoid, remedy or mitigate adverse effects on archaeological values.

1. It is recommended that an application be made under the provisions of the *Heritage New Zealand Pouhere Taonga Act 2014* for a general authority to modify or damage archaeological sites within Morrison's Forest. A general authority application is recommended in order to address the possibility that unrecorded features may be encountered during harvesting activity and the formation of log processing areas and access tracks.
2. A harvest plan must be submitted with the application that clearly demonstrates how trees will be removed from the archaeological sites using techniques to avoid or minimise ground disturbance.

3. All personnel working in the forest should be made aware of the existence and significance of sites. Personnel should also be made aware of the possibility that other, currently unrecorded, archaeological features may be present in the forest, and a procedure for dealing with the discovery of unrecorded archaeological features should be in place.
4. Specific felling and extraction strategies must be agreed, in consultation with the approved archaeologist, for archaeological sites where there is potential for damage to occur to archaeological features during harvesting activity
5. Trees on visible archaeological features should be felled under appropriate supervision, leaving high stumps. Dragging of felled stems across archaeological features must be avoided. If stems cannot be removed without causing damage to archaeological features they should be felled to waste, ensuring good ground contact to facilitate decomposition.
6. Track sluing and dragging of stems should be avoided in the vicinity of archaeological sites to minimise ground disturbance.
7. It may be necessary in some cases for a mechanical excavator to enter the identified perimeter of an archaeological site for the purpose of lifting felled stems clear of the features. Where this is required care should be taken to avoid visible archaeological features such as pits. Existing bulldozed tracks should be used for machine movement through sites where these occur.
8. Archaeological monitoring, and/or prior archaeological investigation will be required in areas where there is a high probability of archaeological features being present and likely to be impacted by harvesting activity.
9. Following removal of the trees the recorded archaeological sites should be inspected by an archaeologist, a planting boundary established around all identified archaeological features that are not currently marked and the relevant NZAA SRS Site Record Forms should be updated.
10. Following removal of the trees no replanting of any identified archaeological sites within the forest should occur.

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