

NAVAL POINT/ MAGAZINE BAY, LYTTELTON: AN ARCHAEOLOGICAL ASSESSMENT

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INTRODUCTION

Christchurch City Council has commissioned Underground Overground Archaeology to carry out an archaeological assessment of the Naval Point/Magazine Bay area, west of Lyttelton (Figure 1 and Figure 2). This assessment was commissioned in order to identify the location of archaeological sites in Magazine Bay, which is a Council administered recreation reserve¹, and to determine under what circumstances an archaeological authority would be required prior to the Council undertaking any earthworks in said area. Although the exact nature of these earthworks is not yet known, these are likely to include;

- the upgrade of the existing service vehicle access track off Park Terrace that runs through the reserve,
- and the possible construction of a new walking track access route into the bay around rocky bluff west of the Naval Point Yacht club.

The assessment has been prepared in accordance with the Heritage New Zealand guidelines on preparing archaeological assessments (New Zealand Historic Places Trust 2006).



Figure 1. Lyttelton, showing the location of Naval Point (red pin) and Magazine Bay adjacent (outlined in red). Image: Google Maps.

¹ Legal Description RS 41394 (Lyttelton Recreation Reserve, NZ Gazette 1984 p2768), Canterbury Land District



Figure 2. 2012 aerial imagery of Naval Point/Magazine Bay area (outlined in red) being assessed. Image: after Canterburymaps.govt.nz.

STATUTORY REQUIREMENTS

The Heritage New Zealand Pouhere Taonga Act 2014 provides protection for archaeological sites and is administered by Heritage New Zealand Pouhere Taonga. Under section 6 of the act an archaeological site is defined as:

- “(a) any place in New Zealand, including any building or structure (or part of a building or structure), that—
- (i) was associated with human activity that occurred before 1900 or is the site of the wreck of any vessel where the wreck occurred before 1900; and
 - (ii) provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand; and
- (b) includes a site for which a declaration is made under section 43(1).”

Under the Act, anyone who wishes to destroy, damage or modify an archaeological site requires an authority to do so. It is illegal to destroy damage or modify an archaeological site without an authority from Heritage New Zealand Pouhere Taonga.

Summary of the timeframes associated with applying for an archaeological authority:

- Within five working days of receiving the application, Heritage New Zealand will advise whether or not the application has been accepted (this is dependent on whether or not sufficient information has been supplied with the application).
- Once accepted, Heritage New Zealand has 20 to 40 working days to process the application.

- After the authority has been granted, there is a 15 working day stand-down period before earthworks can begin.

METHODS

Historical and archaeological research

In order to ascertain the locations of archaeological sites in the study area, the following sources were consulted:

- ArchSite (the New Zealand Archaeological Association site recording database), to find archaeological sites recorded within the project footprint
- historic maps, plans, and photos
- Books and other source material about the history of Lyttelton and the surrounding Banks Peninsula area
- the *Mahaanui Iwi Management Plan*
- Historic aerial imagery of the area, available at Canterburymaps.govt.nz.

The main focus of the historical research was establishing the nature of pre-1900 activities in the Naval Point/Magazine Bay subject area that would have the potential to leave archaeological evidence. Guided by historical sources, two site visits were also carried out as part of this assessment to identify the locations of archaeological sites on the ground. The first site was undertaken on the afternoon of 28 May 2017 in inclement weather and at high tide. A follow up site visit was made on morning of 7 June 2017, under more favorable weather conditions, and at low tide.

PHYSICAL ENVIRONMENT

Magazine Bay lies around a small rocky point or promontory, west of the Lyttelton Marina which is known as Naval Point (also sometimes referred to as Erskine Point) and is in close proximity to the Naval Point Yacht Club (Figure 3). Fringed by volcanic bluffs and covered in a mixture of native and introduced vegetation, Magazine Bay is the smallest of the three bays west of Rapaki Bay that form part of a larger public recreation reserve. Excluding access by boat, there are three main points of public access to Magazine Bay. From the north, there is public access off Park Terrace, from the east, a walking track from Corsair Bay, and from the south east, a steep walking track that starts at the back of the Naval Point Yacht Club (Figure 4 and Figure 5). Although there is vehicle access off Park Terrace, this is for service vehicles only and links Magazine Bay with Corsair Bay. Unlike at Corsair Bay, Magazine Bay has no public vehicle access or car park.



Figure 3. Magazine Bay, looking northwest.



Figure 4. The northern entrance to Magazine Bay off Park Terrace, looking west.



Figure 5. The walking track entrance to Magazine Bay at the rear of the Naval Point Yacht Club, looking west. The boat ramp access at left of image.

HISTORICAL BACKGROUND

Māori occupation of Whakaraupō

Formed from the remnants of an extinct volcano, Lyttelton harbour has been the site of human activity for over 800 years (Rice 2004:14).

Prior to European settlement the harbour was known as Whakaraupō, or harbour of raupō (Burgess 2009:7). The first occupants of the area were Waitaha, followed by Ngāti Mamoe in the 16th century (Anderson 1998:22-23). For Ngāti Mamoe the area surrounding Lyttelton, which they named Ōhinehou, was a mahinga kai. The pioki, or gummy shark, was hunted there on a seasonal basis (R. Couch, pers. comm., 2011). Ngāti Mamoe was eventually displaced in the 18th century by Ngāi Tahu, who established a settlement at Rāpaki (Anderson 1998:38). Ōhinehou (now Lyttelton) is noted as the place where an early 18th century Ngāi Tahu war party fought and defeated the resident mana whenua Ngāti Mamoe (Mahaanui Kurataiao Limited, 2013). Rapaki later became a native reserve and is today the home and marae of one of Te Rūnanga o Ngāi Tahu's five Banks Peninsula papatipu rūnanga, Te Hapū o Ngāti Wheke (CCL 2017).

Magazine Bay was known to Māori as Tāpoa, which means 'wind swirling around'. Its shores formed part of a natural access route running between the pā at Rāpaki and the settlement at Ōhinehou (CCL 2017).

Māori travelled backwards and forwards across the Port Hills, and between settlements around Whakaraupō and the settlements and resources on the inland side of the hills. Both the Port Hills and Banks Peninsula provided access to forest-related resources, including a rich birdlife (Challis 1995). By the time the first Europeans arrived in the area the settlement at Ōhinehou appears to have been abandoned. Visiting French whalers described settlements at Whakaraupō as "a cluster of huts and some whata on which were stores of dried fish, sacks of kumara and cakes of roasted fern root"

(Anderson 1998: 151). No Māori were recorded as living in this part of Whakaraupō between 1840 and 1861 (Anderson 1998: 151).

Magazine Bay/Tāpoa is located approximately 900 m outside of the boundary Ngāi Tahu Silent File 31 (Figure 6, Mahaanui Kurataio Limited, 2013).



Figure 6. Whakaraupō/ Lyttelton Harbour, showing the proximity of Tāpoa/Magazine Bay and Naval Point (outlined in red and highlighted with red arrow) to Ngāi Tahu Silent File 31. (Image: after Mahaanui Kurataio Limited 2013: 370).

The European Settlement of Lyttelton and the development of the Port

The history of Naval Point and Magazine Bay is closely tied up with the history of Lyttelton and the development and expansion of its port facilities. From the 1820s various European traders and British, French, and American whaling vessels intermittently visited the area in order to trade with local Māori

and hunt for whales. Captain William Wiseman was one of the earliest recorded European visitors to the area in 1827, working on behalf of Australian merchants Cooper and Levy, it was Wiseman who gave Lyttelton its first European name: Port Cooper.

Following the establishment of a farm by the Deans family on the Canterbury plains, Port Cooper was used as a landing site for surveyors who were looking to establish a colony on the plains. The plan for a British colony at Whakaraupō was prepared in 1847 by Edward Gibbon Wakefield and John Robert Godley. In 1848 they formed the Canterbury Association with the support of the Anglican church. Originally Christchurch, main settlement in Canterbury was to be named Lyttelton, after the association's chairman, George William Lyttelton, 5th Baron Lyttelton. However, the association decided instead to name its first settlement, that which was established at Port Cooper, after Lyttelton instead (Rice 2004:17).

In 1848 Captain Joseph Thomas was sent by the association to survey the region and plan the new settlement. Initially Thomas suggested the establishment of a settlement at Teddington, but he later realised that the process of land reclamation in this location would prove to be too expensive (Rice 2004:17). With the main settlement being relocated to the plains, Thomas moved the site of the main port to what was then known as Erskine Bay (Rice 2004:18). The name Erskine Bay given to the area was so named after Commodore James Erskine of the Royal Navy (Cooke 2000:76, Figure 7). Naval Point, the promontory at the south-western tip of the Erskine Bay, is also sometimes called Erskine Point.



Figure 7. 1860s map of the settlement of Lyttelton and Erskine Bay. Naval Point is shown as lower left of image. Image: Rice 2004.

The harbour and its port facilities saw significant changes over the course of the 19th century. Wharfs, jetties, a sea wall and warehouses were built, and a programme of land reclamation was begun in

order to extend what little flat land was available for siting port infrastructure. Dampiers Bay (on the western side of the harbour north of Naval Point, (refer Figure 7)) was one of the first areas of the waterfront to be reclaimed, as was the main beach terrace south of Norwich Quay.

Construction of the Officers Point breakwater on the eastern side of the harbour began in 1868 using prison labour, and from about 1872 the construction of a second breakwater extending from Naval Point on the western side of the harbour had begun. Both breakwaters were completed in 1877. The necessity of the port having breakwaters to form a sheltered inner harbour was realized in 1868 when a tsunami struck the port (Scotter 1968: 84, Rice 2204: 38). Rubble stone blasted from Naval Point was used in the construction of the Naval Point breakwater. In 1879 what was left of Naval Point was further blasted away for a source of fill needed to complete the inner harbour reclamation of Dampiers Bay (Rice 2004:48). When completed, the Naval Point breakwater was 1400 feet (427 m) in length, and together with the Officers Point breakwater, enclosed an area of about 107 acres (Cyclopedia Company Ltd 1903: 119).

The Lyttelton Harbour Board took over the management of the port in 1876 after the provincial government was disestablished. The composition of the board represented the two groups that had vested interests in the growth of the port, businessmen and farmers (Rice 2004:43). Under the management of the Lyttelton Harbour Board the port continued its expansion into the early 20th century. In 1909 the decision was made to begin a new phase of land reclamation behind the Naval Point breakwater, utilizing spoil derived from a programme of harbour dredging which was increasing at this time. This Naval Point reclamation was eventually finished in 1925. After the land had settled, railway lines and roads were laid across its surface. Oil companies such as Vacuum Oil and British Imperial Oil then used the land to construct their new storage facilities (Scotter 1968:163, Rice 2004:92). By 1938 it was reported that accommodation for small craft was urgently needed as the limit of mooring piles in the inner harbour had by now been reached. The Harbour Board's engineer Mr P. W. Fryer reported on the location of possible new marina sites in Diamond Harbour and in Magazine Bay (Press 1/4/1938:3). Subsequent to this, the Naval Point Yacht Club and marina was built on the outer edge of this newly reclaimed area.

European occupation of Magazine Bay 1850s-1870s

Magazine Bay was known in the 19th century by a number of different names including Cromptons, Bakers, and Brownings, evidently so named after successive Commanders of the Lyttelton Artillery Volunteers who lived in the cottage on the site (Cooke 2000: 76). From mentions in the local newspaper, Bakers Bay is believed to be the earliest European name for the bay; in 1863 it was reported that 59 head of cattle from Wanganui were offloaded there from the SS Star of the South, some of the best of which were soon purchased by butchers for the Lyttelton market (*Lyttelton Times* 22/10/1863: 4). In 1867 the SS Airedale anchored off Bakers Bay and offloaded a cargo of horses, which were able to swim to shore without assistance. 60 horses were landed this way in an hour (*Lyttelton Times* 27/2/1867: 2). Located just on the outer fringe of the Lyttelton settlement, these earliest newspaper references to Bakers Bay suggest that in the 1860s at least, this small bay was the most convenient place for offloading stock from ships rather than directly from a wharf or jetty inside the harbour proper. The natural topography of the bay with its steep sides would have also made it a suitable place for holding stock temporarily once ashore.

A ship yard was established in Bakers Bay by John Grubb in 1874, based on an 1885 newspaper report noting that Grubb's workshop and boat slip had by this time been sited here 11 years (*Lyttelton Times* 29/5/1885: 3). Grubb and Co's original slip and boat building yard was located inside the harbour off Norwich Quay, but by 1871 reclamation encroachment was making this location increasingly tenous (Press 15/6/1871: 2). By 1874 his yard had been cut off from a water frontage entirely and the slip and winching gear was put up for auction (*Lyttelton Times* 8/8/1874: 4). An 1897 photo of Bakers Bay

shows the Croydon Lass, (a schooner) on Grubb's slip (Figure 8). It is not known at what time after this photo was taken that Grubb ceased his shipbuilding operations in Bakers Bay.



Figure 8. 1897 image of Bakers Bay, showing the schooner Croydon Lass on Grubb's slip. Grubb's workshop building is partly visible at lower left of image, with the torpedo boat shed in between. Image: Christchurch City Library, Photo CD 10, IMG0039.

Bakers Bay formed the southern boundary of Rural Section 375, which was first purchased in 1854 by Andrews. Spowers purchased the section in 1856, before subdividing it in 1870. In 1875 the southernmost portion of this section was given to the superintendent of Canterbury (LINZ 1860: 167-168). Together with the southernmost portions of adjacent rural sections 375 and 714 to the east, this 11 acre coastal strip became a public domain, and the adjacent roadway (Governors Bay Road, now Park Terrace) formed at some stage soon after (Figure 9). The service vehicle access track off Park Terrace probably also began to be formed through the reserve at this time. From 1874 Bakers Bay began to be increasingly known as Magazine Bay, after the powder magazine that was built here by the Provincial Government at this time.

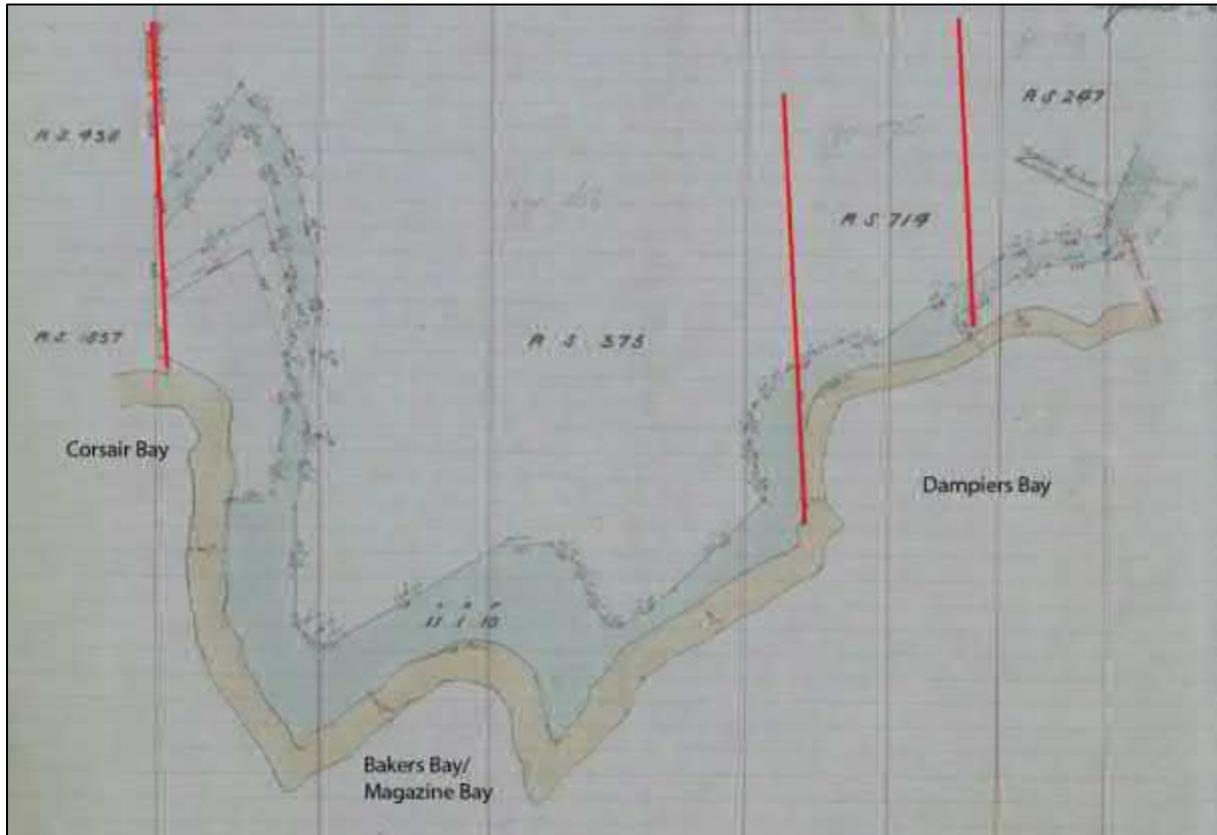


Figure 9. Annotated 1875 plan of Magazine Bay and environs. The boundaries between the rural sections are overlaid in red, the 11 acre block given to the Superintendent of Canterbury in 1875 is shaded in green, the intertidal zone in orange. Image: after LINZ 1860: 168.

A magazine is a special purpose reinforced structure for the storage of explosives and ammunition. The Magazine Bay magazine was built by the Provincial Government in mid-1874 for the secure storage of black powder and other explosives for use in public works, though from 1885 to 1945 the magazine was also used by the military for storage of ammunition. Protected by a concrete sea wall and with a small jetty, located just outside of Lyttelton, Bakers Bay was an appropriate location for siting a dangerous goods store away from a populated area should an explosive accident have occurred. A small cottage for the domain caretaker/powder magazine keeper was built on the terraced slope above the following year (*Lyttelton Times* 30/7/1875: 1). What is likely to be the caretakers cottage is shown on a 1885 plan of the area (LINZ 1885, Figure 10). A 1925 photo of Bakers Bay taken by the resident caretaker at the time shows the magazine building, sea wall and jetty, and a dwelling and shed on the slope above, which has been terraced for gardening (Figure 11). Still extant, in 1995 the magazine and associated seawall was listed in 1995 as a category 1 historic place by the then Historic Places Trust (list number 7234, Heritage New Zealand 2017). At one time in a neglected and almost derelict state, from 1999 to 2002 the magazine building underwent restoration, and was transformed into a museum (Press 15/7/1999:6, Star 8/3/2002: B7).

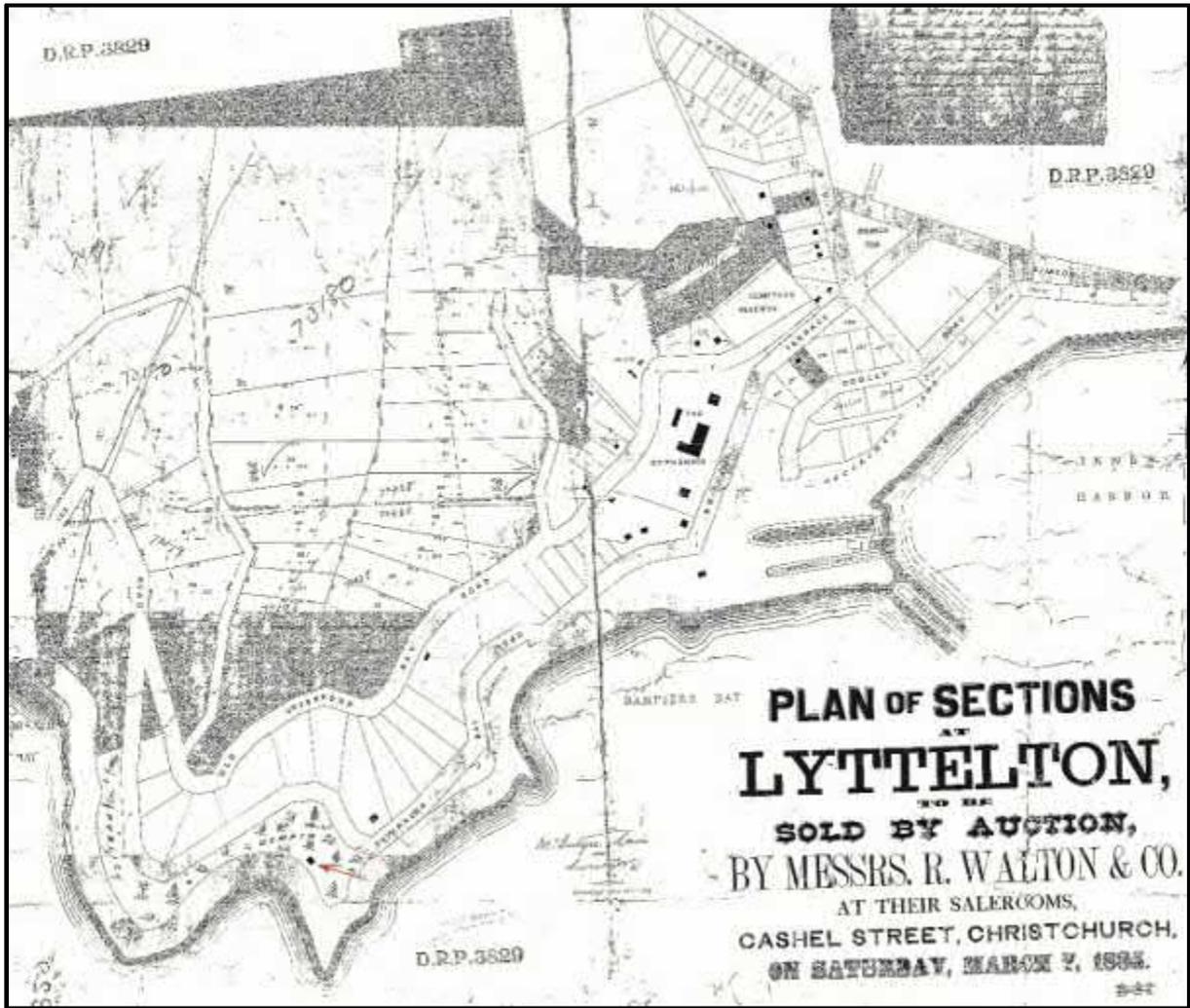


Figure 10. 1885 Subdivision plan of Lyttelton sections, showing the Magazine Bay reserve at lower left. What is likely to be the caretakers cottage is shown on this plan (red arrow). Image: LINZ 1885.

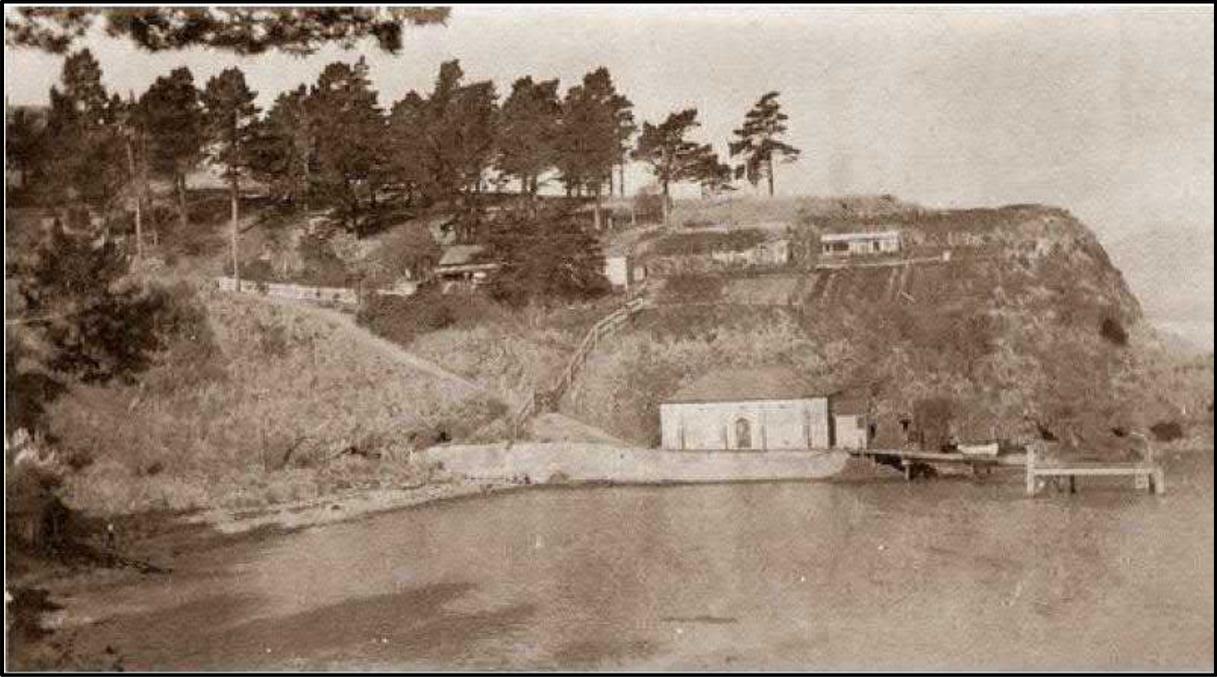


Figure 11. 1925 photo of the eastern side of Bakers Bay, showing the magazine, sea wall, jetty, and keeper's cottage on the slope above. <http://ketechurch.peoplesnetworkz.info/site/images/show/12632-magazine-bay-lyttelton-harbour-1925#.WT3108YIGUk>. Dan Moir Collection.



Figure 12. The 1874 magazine and seawall, June 2017.

Magazine Bay and harbour defense: 1885-1945

From 1885 the history of Magazine Bay began to be closely tied up with defence of Lyttelton Harbour. In the early 1880s, prompted by growing Russian expansionist threats in the Pacific and concern over the country's defensive vulnerability, the Central Government formulated a three-tiered defensive system for the colony's most important ports. This comprised shore based artillery, submarine mines and torpedo boats. As a result of this 'Russian Threat', 5 acres of the Magazine Bay domain was gazetted in 1885 as a defence reserve.

In 1879 the government bought twenty-two guns from Britain, four of which were for destined for Lyttelton Harbour (Beaumont, Carter, Wilson 2014: 282, Scotter 1968:145). The next piece of the Lyttelton defence network was the torpedo boat, which arrived in December 1884. This was one of four imported, the others going to Auckland, Wellington and Dunedin.

The torpedo boats were built by John I. Thornycroft and Company Ltd, an English company, and were second class spar torpedo boats. The boat sent to Lyttelton was No. 168. It was 63ft. long, 7ft. 6in. wide, and was armed with a spar approximately 40ft. long that had an explosive device fitted to the end of it. Lyttelton's torpedo boat was named 'Defender' (Beaumont, Carter, Wilson 2014: 282). A shed was built to house the Lyttelton torpedo boat in Magazine Bay, which was completed in May 1885, while the torpedo storage shed and associated infrastructure were on Ripa Island, on which the harbour's main defensive fort was sited (*Lyttelton Times* 20/5/1885: 12, Wallace 1967:4). The torpedo boat shed, which was built between John Grubb's workshop and slipway, (refer Figure 8) had a wooden frame and galvanised iron cladding. It was 70ft. long, 12ft. wide and 12ft. high and had a slipway running from the shed out to the low water mark. The slipway consisted of iron rails laid on wooden piles. A wheeled cradle was used to carry the boat along the slipway. Five men from the permanent militia were designated as a torpedo corps, whose task was to undertake the maintenance and operation of the vessel.

The torpedo of the Lyttelton torpedo boat was never fired (nor were those of any of the other torpedo boats), but trials of the boat were undertaken (mostly to assess its speed) and it was at one time used during a regatta in the Lyttelton Harbour. By 1899 the boat was thoroughly outmoded, and was decommissioned the following year. It was sold to Mark Thomas, who operated a steam launch in the Lyttelton Harbour. Thomas stripped the boat before abandoning it on the foreshore at Purau (Scotter 1968:146). A group of local people relocated the remains of the boat in 1999 and in 2003 established a small museum in the restored Magazine building. Here the partial remains of the Defender's hull and other torpedo boat related artefacts are on display (Figure 13).



Figure 13. The partially reconstructed hull of the Defender torpedo boat, on display inside the Torpedo Boat Museum, Magazine Bay. Image: nzmaritime.co.nz.

In addition to the torpedo boat, a gun emplacement, gunnery barracks, and timber walled ammunition magazine was built on the headland above the magazine building in 1890. This defensive position became known as 'Fort Erskine' or the 'Erskine Point Battery' (Cooke 2000: 76). Commanding an excellent view of the harbour entrance, a 65 pounder gun was first installed, but replaced in 1891 with a more modern 7-inch muzzle loading rifled cannon (Star 4/6/1891:3). Together with Fort Jervis on Ripa Island and the other coastal gun emplacements sited at Battery Point and Spur Point, Lyttelton could now be guaranteed a degree of protection from the threat of seaborne invasion, though such an invasion never happened. Fort Erskine was to be a short-lived defence installation, decommissioned in 1904-1905 having never fired a shot in anger (Beaumont, Carter, and Wilson 2004: 283).

Left in situ on its gun mount, the Fort Erskine cannon was purchased by local engineering firm Sinclair Melbourne & Co in 1934 and was stripped of its more valuable metal fittings (and a substantial quantity of lubricating oil) before being 'thrown on to the parapet and then allowed to fall over the cliff' (Press 17/3/1934:12, Cooke 2000:76, Figure 14). Four years later when defence personnel were conducting a survey of harbour defence sites prior to the outbreak of WWII the cannon was noted as still lying there in the mud flats at the base of cliff (Press 10/3/1938: 8). It was at an unknown later date salvaged, and mounted in front of the former Sumner Sea Cadets base (T.S. Cornwell) at 153 Main Road in Sumner where it remains today.

At the outbreak of WWII, in 1939 a 40 mm Bofors anti-aircraft (AA) gun was installed on a small terrace above the Fort Erskine gun mount and this was known as the 'Oil Wharf Gun'. Manned by young Army gunners, this was the only defence available for Lyttelton until the guns at the Godley Head Battery were installed. From 4 July 1941 to 1945 the 'Erskine Magazine' was declared a prohibited place under the Defence Emergency Regulations 1941 (Cooke 2000:76).

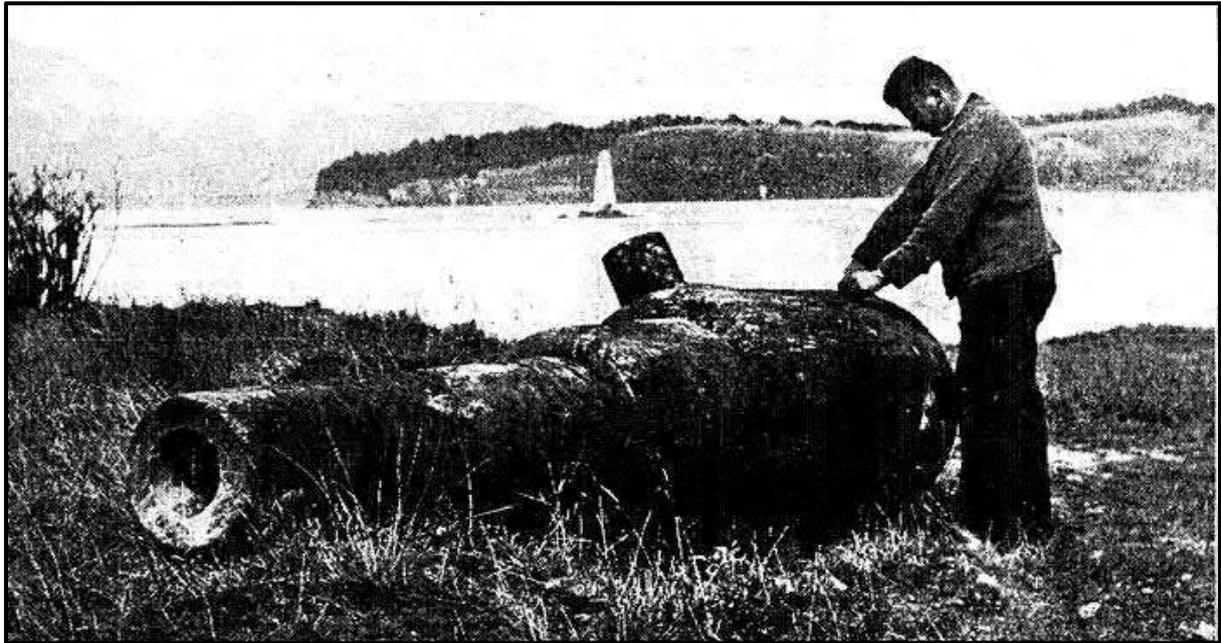


Figure 14. The 1891 Fort Erskine cannon as it laid at the bottom of the cliff after its 1934 removal. Image: Press 17/3/1934: 22.

Post World War 2

In the post WWII period Magazine Bay reverted back to public recreation domain administered by the Lyttelton Borough Council (until 1989) then by the Banks Peninsula District Council (till 2006) and subsequently by the Christchurch City Council. It was not until 1984 however, that the 5 acre defence reserve, that had been gazetted 99 years earlier, was formally returned to the ownership of local council (Thornycroft Torpedo Museum n.d.). Aerial imagery provides some insight into the locations of the various buildings located on the reserve, all of which were located on the eastern slope of the bay, and when they were demolished (Figure 15, Figure 16, and Figure 17).



Figure 15. 1965 aerial imagery of Magazine Bay, showing the project area outlined in red. Outlined in blue is the 1874 Magazine building, in yellow the caretakers cottage, garage, and small shed, in pink the 1890 Fort Erskine gun mount, and in green, a smaller building suspected to be the Fort Erskine barracks building or similar structure. Image: after canterburymaps.govt.nz.

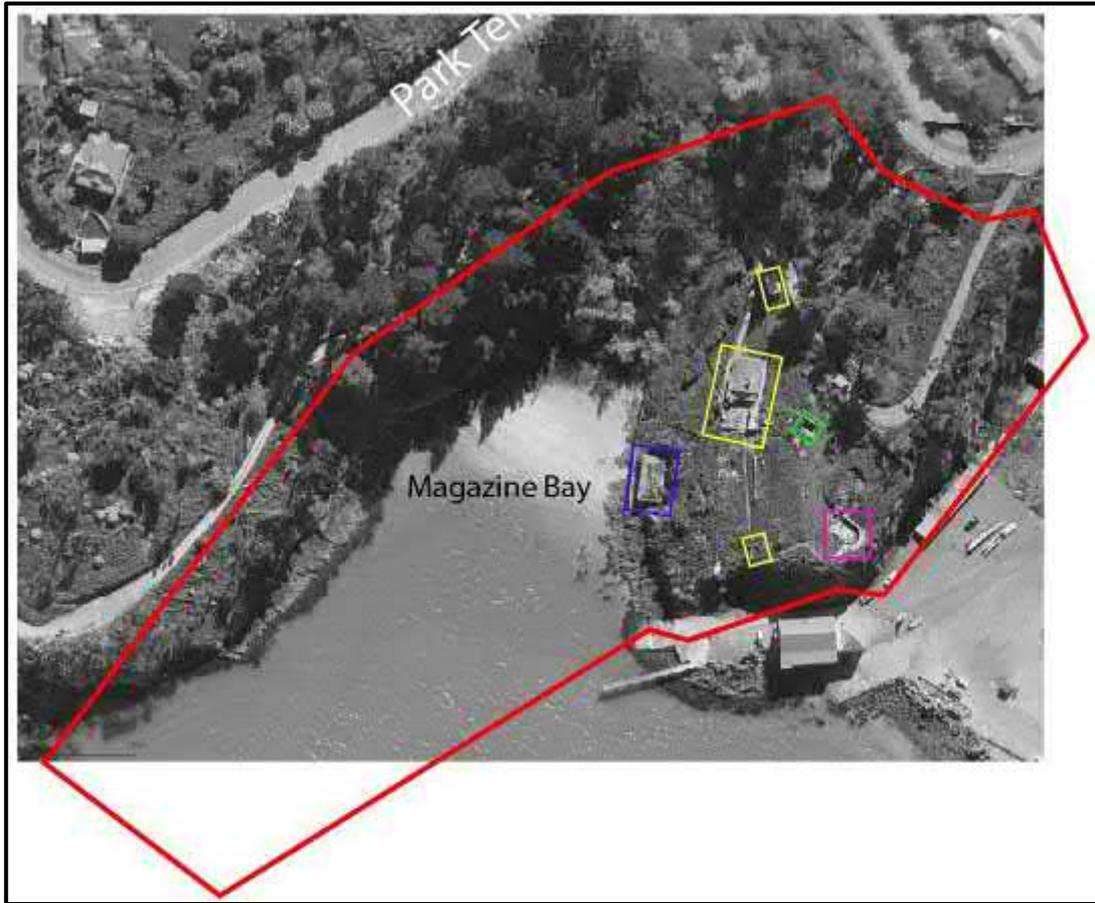


Figure 16. 1970 aerial imagery of Magazine Bay, showing the project area outlined in red. Outlined in blue is the 1874 Magazine building, in yellow the caretakers cottage, garage, and small shed, in pink the 1890 Fort Erskine gun mount, and in green, a smaller building suspected to be the Fort Erskine barracks building or similar structure. All of the buildings/structures shown on the earlier 1965 imagery are still standing at this time. Image: after canterburymaps.govt.nz.



Figure 17. 1980 aerial imagery of Magazine Bay, showing the project area outlined in red. Outlined in blue is the 1874 Magazine building, in yellow the locations of the caretakers cottage, garage, and small shed, in pink the 1890 Fort Erskine gun mount, and in green, the location of a smaller building suspected to be the Fort Erskine barracks building or similar structure. Only the 1874 magazine and 1890 gun mount are still extant, all other buildings/structures visible on earlier aerial imagery have by this time been demolished. Image: after canterburymaps.govt.nz.

PREVIOUS ARCHAEOLOGICAL WORK

The only archaeological work that has been undertaken in Magazine Bay to date consisted of a small scale excavation in 2001-2002 by Katharine Watson (Underground Overground Archaeology) to locate the remains of the 1885 torpedo boat shed (works under Historic Places Trust authority 2001/16, Watson 2004). This work took place over two seasons. The first season's excavations consisted of the hand excavation of a small 1 x 1 m test pit in the suspected location of the torpedo boat shed. With the location of the boat shed confirmed by this test pit, a small mechanical excavator was used in the second season excavation to uncover more of the boatshed. A theodolite survey of the bay was also carried out (Figure 18). This excavation revealed the floor of the boat shed was sealed with asphalt/coal tar and featured two timber bearers set 1.4 m apart, on top of which rails would have once been attached. At its southern end the asphalted floor of the boat shed was located at a depth of 1.03 m, but at its northern end was exposed at a much more shallow depth. The excavation confirmed that the shed was approximately 4 m wide, though the maximum length of the shed could not be established because of a LPG pipeline that had been installed here in the 1980s, (this pipeline had destroyed the back end of the boat shed platform). The asphalted floor of the shed was capped by layers of sand and clay fill, at least some of this clay fill likely derived from erosion of the steep hill side behind. The excavation was afterwards backfilled.

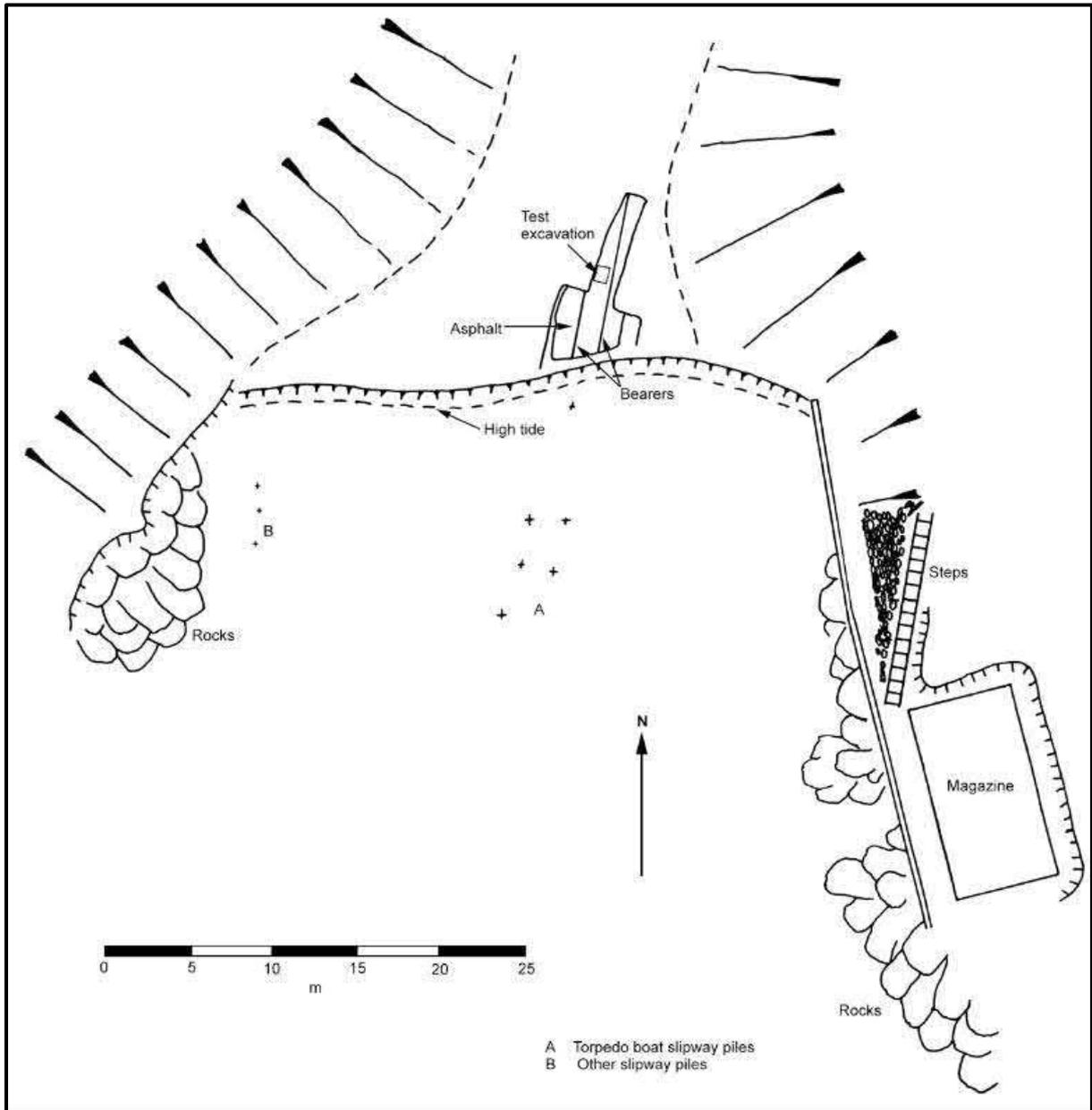


Figure 18. 2002 site plan of Magazine Bay, showing the location of the 2002 torpedo boat shed excavation and other historic features. Image: Watson 2004: 7 after base map by Peter Petchey.



Figure 19. View of the 2002 torpedo boat shed excavation area, showing the asphalt/coal tar floor and timber rail bearers, looking north. Scale increments are 500 mm. Note the depth of fill. Image: Watson 2004: 11.

SITE VISIT

Two site visits were carried out in order to locate the archaeological sites that were identified during the desk based research, and to inspect those parts of the reserve where Council is proposing to construct new, or improve existing tracks.

The service vehicle/pedestrian access way

A thorough walkover of the combined service vehicle/pedestrian track that runs from Park Terrace in the north to Corsair Bay in the west was undertaken as the Council is intending to improve this track. An attractive white painted timber gate on the Park Terrace boundary marks its upper end, but it is not known if this is an original 19th century gate (Figure 20). Up to 4 m wide, this single lane access way is gravelled its entire length, but in some places was observed to be rutted and bumpy. Along the steeper parts of the track the fine gravel had been washed away making these sections slippery– this unsealed service road has no roadside channelling or adequate provision for stormwater drainage (Figure 21 and Figure 22). Although not shown on any of the 19th century plans, it is strongly suspected that this track was formed (either in whole or in part) in 1875 when the bay first became a recreational reserve (though this cannot be proven conclusively). 20th century aerial imagery shows that the location of this track has not changed much at all over this time, though has likely been subject to some form of repairs or remetalling. Access to all of the different historic sites in the reserve is off this track, and these smaller branch tracks are well signposted (Figure 23).



Figure 20. The Park Terrace entrance gate to the service vehicle track, looking south.



Figure 21. The start of the main service vehicle/pedestrian track off Park Terrace, Looking south. Ōtamahua/Quail Island is in the distance.



Figure 22. Looking north up the main vehicle/pedestrian access track, with the Park Terrace access gateway in centre distance. Raining at the time this photo was taken, note also the flow of water along the left hand side of the track, which has washed away the gravel in this location.



Figure 23. The main service vehicle/walking track, looking east from where the track branches off into smaller tracks leading the site of the caretakers cottage and down to the magazine building and bay. These smaller branch tracks are well signposted.

Fort Erskine Battery (1890)

The Fort Erskine Battery is the uppermost historic site on the eastern slope of the bay, and contains a number of different and relatively intact features associated with this short lived fort. The first of these is a 4.2 m long 2.2 m tall concrete perimeter wall, this with the remains of pins that would have held an entrance gate (Figure 24 and Figure 25). The main battery consists of the raised concrete gun mount platform which stands 760 mm tall, complete with its central pivot mount and 3.4m diameter rail on which sat the gun carriage (Figure 26 and Figure 27). The gun mount is surrounded by a 500 mm thick concrete parapet wall which is up to 2 m in height, though a 4 m long eastwards facing portion has broken away. Although this parapet wall is largely intact, there are a number of large cracks to the wall, which has spraypainted graffiti. To the north east of the gun mount are steps leading to the site of the ammunition magazine, and to the south west a concrete musketry parapet (Figure 28). An information panel outlines the history and significance of the site, which notes that the ammunition magazine was demolished by the Lyttelton Borough Council in the 1950s (Figure 29).



Figure 24. The entrance to Fort Erskine off the main access track, looking south. The concrete perimeter wall is shown at right.



Figure 25. The Fort Erskine concrete perimeter wall, showing the local volcanic rock as aggregate and pin that would have held the entrance gate.



Figure 26. The Fort Erskine gun mount and surrounding concrete parapet wall, looking south east.



Figure 27. The Fort Erskine gun mount, looking north east.



Figure 28. Steps to the north of the gun mount that lead to the site of the ammunition battery.



Figure 29. Information panel that outlines the history and significance of the Fort Erskine site.

Caretakers cottage site (1875)

The caretaker's cottage was sited on the terrace that is located below the Fort Erskine battery and above the Magazine building. An information panel notes that the cottage was demolished by the council in about 1970 and marks its location. The southern portion of this terrace has been highly modified through erosion and by landscaping and picnic tables are now sited here. The most dominant extant feature of the cottage site is a brick retaining wall that is 9 m long and 1.2 m in height (Figure 30). Aerial imagery indicates that this wall likely retained the hill slope at the rear of the cottage, which has what is thought to be, a meat safe built into its northern end (Figure 31). Additional structural features related to the cottage site are also extant on the track between the cottage and the main access track to the north (Figure 32), and downslope of the cottage site are additional brick retaining walls and a set of brick steps, however these downslope walls are largely obscured by vegetation (Figure 33). Brick fragments and concrete slabs were also noted in different locations downslope of the cottage site. It is suspected that these would have been deposited here when the cottage was eventually demolished. It was not possible to determine whether these extant features associated with the cottage site were constructed in the 19th or 20th century.



Figure 30. The Caretaker's cottage site, looking east, showing the brick retaining wall.



Figure 31. The meat safe built into the northern end of the retaining wall.



Figure 32. The track linking the site of the caretaker's cottage and the main track (in centre distance), looking north. This track is partially concreted, as can be seen at centre image near the photo scale, and historic aerial imagery shows that a garage, shed or other similar small building once stood in this general location.



Figure 33. Brick steps located downslope of the caretaker's cottage site. These steps and an associated brick retaining wall are partially visible from the steps that lead down from the cottage site to the Magazine building.

Magazine Building and seawall (1874)

The 1874 Magazine building is in good condition, having been restored from 1999 to 2002 during the course of its transformation into the torpedo boat museum. An interpretation panel in front of the building explains the history, function, and significance of the structure (Figure 34). The concrete sea wall that was built atop of the rocks in this location is also in good condition, (and partially covered in a colourful mural) though there is noticeable weathering to that portion of the outer face of the wall which lies below the high water mark (Figure 35). No evidence of the associated jetty (as shown on the 1925 photo, (refer Figure 11)) survives today. The southern end of this sea wall terminates at a rocky bluff. These rocks extend around the base of the cliff to the edge of the Naval Point Boat Club's concrete boat ramp. A new pedestrian accessway is being considered in this location, sitting across the top of the rock. There were no archaeological features observed in this area (Figure 36).



Figure 34. The 1874 Magazine building and sea wall, looking south east.



Figure 35. The 1874 sea wall with magazine building in the background. Note how the sea wall has been constructed directly atop the existing rocks, and that there is weathering of the lower part of the wall from the action of the sea.



Figure 36. The volcanic rocks that extend out from the base of the cliff south of the Magazine building and sea wall, with the Naval Point Yacht club marina and boat ramp visible in the distance. No archaeology is present in this location, where the construction of a new pedestrian access route into the bay is being considered.

Grubb's shipyard and slipway (1874) and the Torpedo Boat shed and slipway (1885)

No visible surface remains of John Grubbs 1874 shipyard and slipway, or the 1885 Torpedo Boat shed and slipway that was built adjacent, are visible today (Figure 37). The 2001-2002 Torpedo boat shed excavation confirmed that the main beach terrace on which these structures were constructed has since been built up in height by up to 1 metre, and that some of the clay fill covering this area is likely to be derived from slips. A picnic table is sited in this location, as is an information panel that marks the location of the Torpedo Boat shed (Figure 38). No piles or pile stubs associated with either of these 19th century slipways were observed in the bay.



Figure 37. The Magazine Bay beach terrace on which Grubb's slipway and workshop, and the torpedo boat shed and slipway were constructed, looking north.



Figure 38. The site of Grubb's slipway/workshop and the torpedo boat slipway and shed, looking north east. An interpretation panel, visible at left, outlines the history of the site.

RESEARCH RESULTS

Historical research revealed that Magazine Bay has been occupied and used by Europeans since at least the 1860s, if not earlier. In addition, the area was known to local Māori, who

used the bay, which they called Tāpoa, as a mahinga kai (food gathering place) and its shores formed part of a natural access route between the pā at Rāpaki and the settlement at Ōhinehou.

Historic research has suggested that all of the different types of activities that took place in Magazine Bay in the 19th century are closely related to the particulars of the bay’s geographic location: just outside of the Lyttelton settlement, Magazine Bay was not too far away but at the same time not too close.

For example, 1860s newspaper accounts suggest that this small bay was utilized for offloading stock from ships rather than from directly inside the harbour proper, which may have been more difficult especially once stock were ashore. In the early 1870s the bay was the location of John Grubb’s ship building yard, a location that would not be directly impacted by land reclamation (as his earlier yard on Norwich Quay had been). In 1874 the Provincial Council’s powder magazine was built in the bay. This location was appropriate as the magazine could be easily accessible (primarily by boat) but was sited at a suitable distance away from the settlement should an explosive accident have occurred. In 1875, Magazine Bay became a public domain for recreation purposes, with a caretaker responsible for the management of the powder magazine (and the domain in general) living on site. With the threat of Russian invasion, 5 acres of this reserve was strategically gazetted for defence purposes and garrisoned. The headland on the bay’s eastern slope commanded an excellent view of the harbour entrance for siting artillery (Fort Erskine – established 1890) and from the bay below, the torpedo boat could be quickly launched (Torpedo boat shed and slipway -1885).

Five archaeological sites located within Magazine Bay were recorded as a result of this research. (Table 1 Figure 39).

Table 1. Archaeological sites in Magazine Bay.

Site	Date	ArchSite
John Grubb’s shipyard and slipway	1874-c.1898	M36/680
Magazine building and seawall	1874	M36/681
Caretaker’s cottage and grounds	1875-c.1970	M36/682
Torpedo Boatshed and slipway	1885-c.1900	M36/683
Fort Erskine Battery	1890 – c1904-5	M36/684

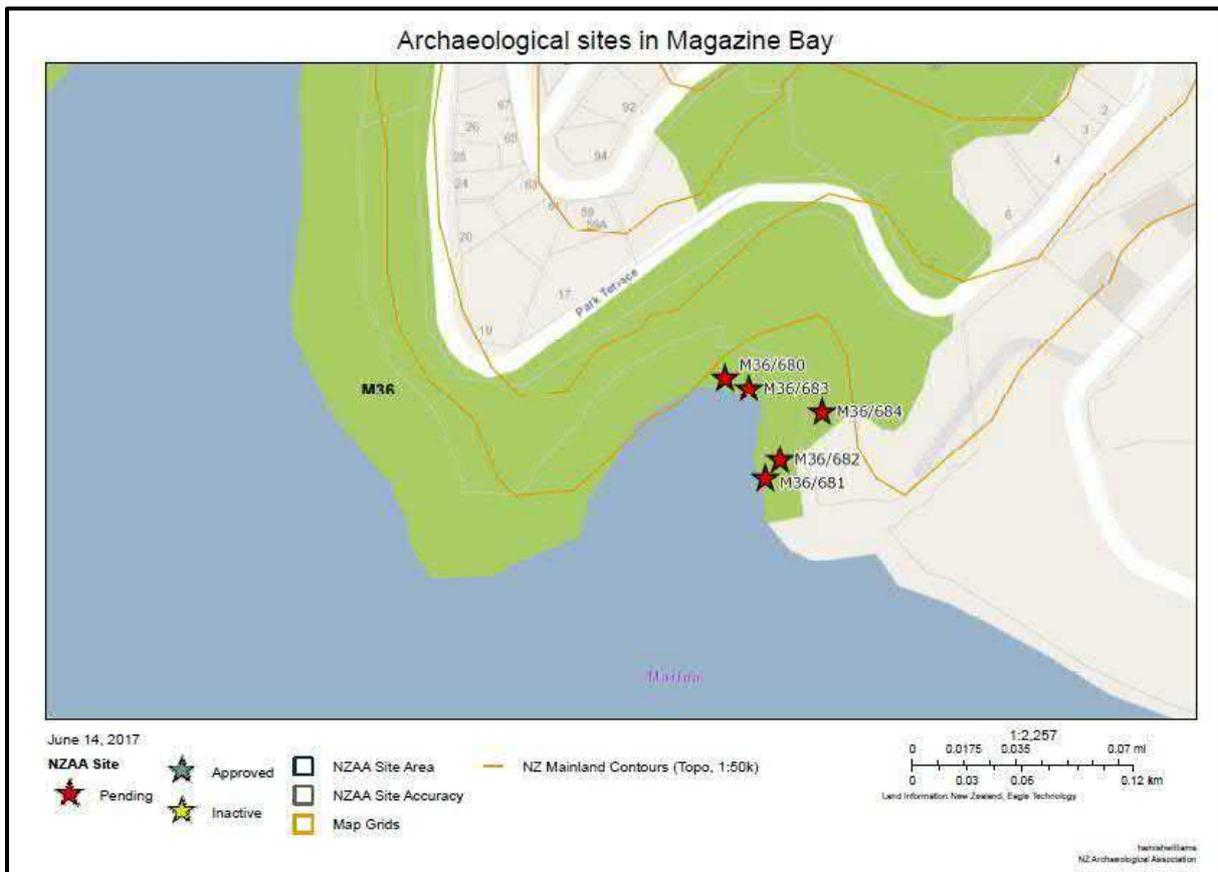


Figure 39. Recorded archaeological sites in Magazine Bay. Image: ArchSite 2017.

ARCHAEOLOGICAL AND OTHER VALUES

Heritage New Zealand recommends using the following criteria to assess the values of an archaeological site:

- The condition of the site.
- Does the site have contextual value?
- Is the site unusual, rare or unique, or notable in any other way in comparison to other sites of its kind?
- Information potential.
- Does the site have any special cultural associations for any particular communities or groups, e.g. Māori, European, Chinese.
- Amenity value (e.g. educational, visual, landscape). Does the site have potential for public interpretation and education?
- In addition, does the site have historical, architectural, technological, scientific, social, spiritual, traditional or other value?

The values being assessed are those of the sites recorded in the area as part of this assessment, and of general types of unrecorded Māori archaeological sites that could be encountered during the proposed works. Values are assessed as low, moderate, or high.

M36/680 John Grubb's shipyard and slipway

The **condition** of the site, is not known, as it is below ground.

The **contextual value** of this site is moderate-high, as it is associated with John Grubb, one of Lyttelton's early settlers who was also a prominent member of the Lyttelton community. Grubb's cottage at 62 London Street (built in 1851) is still extant, and is an important historic building owned by the Christchurch City Council.

In a local context this site could be considered **rare**, as evidence of 19th century shipbuilding sites around Lyttelton are all believed to have been destroyed by 19th and 20th century harbour reclamation activities (as Grubb's earlier shipyard was).

The **information potential** of this site is medium, as it has the potential to shed more light on 19th century European shipbuilding.

This site is not likely to have any **cultural associations**.

The **amenity value** of this site is medium-high, as it demonstrates a lesser known 19th century use of the Magazine Bay area.

Overall, the value of this site is medium-high.

M36/681 Magazine building and seawall

The **condition** of the site is good, as the Magazine building was recently restored. The seawall is also in good condition, though there is some deterioration of the outer face of the wall that lies below the high water mark.

The **contextual value** of this site is high, as it is associated 19th century public works, in addition to 19th century harbour defence.

The magazine is not particularly **rare** as a surviving example of either a district or military magazine, but it does have a certain rarity as being used for both purposes.

The **information potential** of this site is low-medium, as this building has already been investigated in some detail when it was restored.

This site has **cultural associations** associated with the development of the province of Canterbury and its port, and from 1885 cultural associations with the military.

The **amenity value** of this site is high, as the magazine is the only remaining 19th century building left in the bay, and as such is a defining landmark.

The site also has high **architectural, technological, and historical** values, which have been previously noted by the Historic Places Trust (now Heritage New Zealand) in their registration of the site as a Category 1 historic place.

Overall, the value of this site is high.

M36/682 Caretaker's cottage and grounds

Although some associated brick retaining walls remain, all the buildings that made up the site were demolished in the latter 20th century, and many of the related site features (such as garden terraces)

have been destroyed by erosion or late 20th century landscaping works. Thus the **condition** of the site is low-medium.

The **contextual value** of this site is medium-high, as it is associated with both the Magazine building downslope, and of Fort Erskine on the upper slope.

The cottage, sheds, and gardens that made up this site are not considered to be particularly **rare**, except in the context of them being on the site of a public reserve that later became a military reserve.

The **information potential** of this site is considered low-medium, for the reasons already stated in relation to its condition.

This site has **cultural associations** associated with the development of the province of Canterbury and its public amenities (the 1875 recreation reserve), and from 1885 cultural associations with the military.

The **amenity value** of this site is medium, as some of the remaining brick retaining wall features on the site provide visitors with some visual relics indicative of its past use.

Overall, the value of this site is low-medium.

M36/683 Torpedo Boatshed and slipway

The **condition** of the site is medium-high, as the 2002 excavation confirmed not only the location of the boatshed but also that it is reasonably intact, with the exception of the rear part of the building that was destroyed by the installation of a LPG pipeline.

The **contextual value** of this site is high, as it is part of a larger landscape associated with 19th century harbour defence that includes the Magazine, and Fort Erskine.

The site can be considered **rare**, based on the fact that there were only 4 torpedo boats in New Zealand in the late 19th century.

The **information potential** of this site is considered low-medium, as the majority of the information about this site able to be obtained through archaeological means was gained during the course of the 2002 excavation.

This site has **cultural associations** associated with the military.

The **amenity value** of this site is medium, as the information board on the site provides visitors with a brief history of the site.

Overall, the value of this site is medium-high.

M36/684 Fort Erskine Battery

Despite some damage and vandalism, the **condition** of the site can be considered high, as the gun mount and most of the surrounding parapet walls are all still in situ.

The **contextual value** of this site is high, as it is part of a larger landscape associated with 19th century harbour defence that includes the caretakers cottage and grounds, magazine building, and torpedo

boat shed. It also has contextual value in relation to other coastal defence sites of the greater harbour area (for example, the Ripa Island fortress).

The site is not particularly rare as a 19th century coastal defence site, but is the most easily accessible of the two that remain around the Lyttelton harbour area (The Ripa Island fortress is administered by the Department of Conservation and is closed to the public because of earthquake damage).

The **information potential** of this site is considered high, as little is known about this short lived defence installation, or those that garrisoned it.

This site has **cultural associations** associated with the military.

The **amenity value** of this site is high, based on the condition of the site.

Overall, the value of this site is medium-high.

Māori middens, ovens and/or cultural layers

The **condition** of any Māori middens, ovens and/or cultural layers that may be present in Magazine Bay is not known, as they are below the ground. The evidence found to date about these types of features uncovered during earthworks in Lyttelton, Sumner, and Redcliffs suggests that features of this type that survive do so in a reasonable condition, even if at a shallow depth.

The **contextual value** of these sites would be considered high, as few Maori archaeological sites have been found around Lyttelton Harbour/Whakaraupō to date.

As there are only a few recorded Māori archaeological sites in the Lyttelton/ Whakaraupō area, any such features in Magazine Bay would be considered **rare**.

The **information potential** of these sites is high, as each has the potential to reveal more information about Maori occupation and use of this area, and the surrounding environment at that time, and potentially also trade and exchange networks.

Te Hapū o Ngāti Wheke are best placed to comment on the **cultural associations** of these sites.

The **amenity value** of these sites would be considered medium-high. Such features would demonstrate the long history of human occupation of the Whākaraupō area, as well as the special associations of Ngāti Wheke to Tāpoa/Magazine Bay

It is unlikely that these sites will have any other values.

Overall, the value of these sites is medium-high.

ASSESSMENT OF EFFECTS

In considering the effects of the proposal on the archaeological sites described above, the following questions were considered:

- How much of the site will be affected and to what degree? What are the **effects on the values** of the archaeological sites?
- Will the proposal increase the **risk of future damage** to the site?
- Would a **redesign** of the proposal avoid the effects?
- What are the possible methods to **avoid, minimise and/or mitigate** the adverse effects of the proposal?

Extent of effects

The proposed works to improve the existing main access track through the Magazine Bay are not likely to affect any of the aforementioned archaeological sites that were recorded in the reserve as part of this assessment, as these are all located outside of the area where these works would take place. Similarly, the proposed construction of a new access track into the Bay around the bottom of the cliff (between the Naval Point Yacht Club and the 1874 Magazine building/seawall) would not impact on any archaeological remains, as this area consists exclusively of natural rocky outcrops, (meaning any such track would have to be built atop of these rocks). The extent to which any earthworks associated with the proposed upgrade of the main access track might affect any unrecorded archaeological sites on the other hand is not known.

Future damage

It is unlikely that the proposed works will directly increase the risk of future damage to the archaeological site.

Redesign

It will not necessarily be possible to redesign the project as the exact nature and extent of any unrecorded archaeological remains in the project area is not known.

Avoid, minimise and/or mitigate

It is possible that archaeological features, if uncovered on the project, may be subject to some form of damage or modification in order to complete the works. As such, mitigation of the loss of information potential in this case will involve some form of standover monitoring of all earthworks in the vicinity of the feature and archaeological recording of said feature prior to the completion of earthworks. Where possible, damage to features will be minimised by only disturbing those areas necessary to complete the works.

With regard to the possible methods to mitigate the adverse effects of the proposal it should be noted that “the recovery of information is a method of mitigating the loss of archaeological information, not for the loss of the site itself” (New Zealand Historic Places Trust, 2006, p.9). It is proposed that the potential loss of archaeological information be mitigated by recording any archaeological remains prior to destruction. Standard archaeological techniques should be used for this. These include, but are not limited to, the following:

- mapping the location of the finds, to determine the extent of the site and spatial relationship between features;
- stratigraphic drawing of the site;
- photography of the archaeological features;
- measurements of the archaeological features;
- recovery of archaeological artefacts and samples, which may include:
- charcoal samples for radiometric dating and timber identification;

- samples of any faunal material that may be found;
- samples of oven stones;
- collection and reporting of any taonga tūturu, if found, as per HNZPT guidelines; and
- analysis and investigation of any archaeological samples recovered, in line with standard archaeological practice.

DISCUSSION AND RECOMMENDATIONS

The research conducted for this assessment revealed that in the 19th century Magazine Bay has an interesting history that is intrinsically tied to the 19th century development of Lyttelton and its port. It has at different times been a place where stock were unloaded from ships, where ships were built and repaired, where explosives and ammunition were stored, as well as being a place where Lyttelton was defended by torpedo and by gun from foreign enemies that never invaded. From 1875 it has been a place of recreation, though from 1885 to 1945 it was a place of defence. From 1875 it was also home to the reserve caretaker/magazine keeper, who lived on site. Prior to use and occupation by Europeans, Magazine Bay was also known to, and used by local Māori. Of the five recorded archaeological sites in the reserve, above ground features of three of these remain as visual clues for visitors about Magazine Bay's rich and varied past.

It is strongly suspected, but as yet unable to be proven conclusively, that the main access track through Magazine Bay that the Council intends to upgrade, was formed in some way as early as 1875 when the reserve was first formed. It is possible that the upgrading of this track could uncover archaeological evidence related to the early formation of this track, in the form of earlier (buried) metalled road surfaces, or other features related to the track, such as culverts. It is also equally possible that no identifiable evidence of such would be uncovered during the upgrade of this track, or that if such evidence was found, it would be impossible to determine conclusively that it dated to the 19th century. In saying this, it must also be noted that archaeological material that is unrelated to the road/track formation could be also be uncovered during the course of this work, which would to some extent also depend on the depth of excavation. Because of the known history of 19th century occupation and use of the area, an archaeological authority would be required for this work.

The proposed construction of a new pedestrian access route into Magazine Bay that would start at the Naval Point Yacht Club and follow the base of the cliff to the Magazine building would greatly improve access to the bay, which is otherwise accessible only via mostly steep tracks/steps. It is suspected that if such a new track were built, it would greatly benefit the Torpedo Boat Museum, as improved access would likely facilitate an increase in museum visitor numbers. Because there is no archaeology in this particular location at the base of the cliff, and any earthworks required for construction of this new section of walking track would only be on top of or into natural volcanic rock, an archaeological authority for the construction of this new section of track would not be required. However, any upgrades of the **existing track adjacent to, and north of, the 1874 magazine and seawall** that would likely be carried out in association with the construction of the new section of track has the potential to impact on subsurface archaeological deposits in particular those related to site M36/681 – the 1874 Magazine and seawall. As such, an archaeological authority would be required for this work. A colour coded plan of the area that was assessed shows those parts of the reserve where an archaeological authority should be obtained by the Christchurch City Council prior to any earthworks taking place in the area marked in red (Figure 40 and Figure 41).



Figure 40. The Naval Point/Magazine Bay area that was assessed, showing in red, those parts of the reserve where an archaeological authority will be required prior to earthworks taking place, and in green, where an archaeological authority will not be required.



Figure 41. Close up detail of Figure 40, showing highlighted in green that part of the assessed area where an archaeological authority will not be required.

It is recommended that:

- Christchurch City Council apply for an archaeological authority prior to undertaking any earthworks within that part of the reserve that is highlighted in red on Figure 40 and Figure 41.

- Christchurch City Council engage with Ngāti Wheke about the proposed works, as although there are no recorded Māori archaeological sites in Magazine Bay/Tāpoa, there is a possibility that Māori archaeological sites or features could be uncovered.
- Any earthworks that may affect an archaeological site be monitored by an archaeologist approved under Section 45 of the Heritage New Zealand Pouhere Taonga Act 2014.

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