Archaeological Assessment for Coring in the Wairau Lagoons

Report to GNS Science

Nick Sutton, Chris Jennings, Karen Greig and Richard Walter

March 2022

University of Otago
Te Whare Wānanga o Otāgo
New Zealand

Southern Pacific Archaeological Research

Archaeology Programme | School of Social Sciences

University of Otago | PO Box 56 | Dunedin 9054

Legal description: Sections 1 & 2, SO 467606; Sections 3 & 5, Wairau District; Lot 1, DP 6087

Citation: Sutton, N., Jennings, C., Greig, K. and Walter, R. 2022. Archaeological Assessment for Coring in the Wairau Lagoons. Report prepared for GNS Science. Southern Pacific Archaeological Research.

Report No. 298

Front Image: "Wairau Plain", 1845 watercolour sketch by Sir William Fox. Sketchbook bequeathed to Dr Thomas M. Hocken. Sourced from *ourheritage.ac.nz | OUR Heritage*, accessed June 30, 2020, http://otago.ourheritage.ac.nz/items/show/5227.

Contents

List of Figures

List of Tables

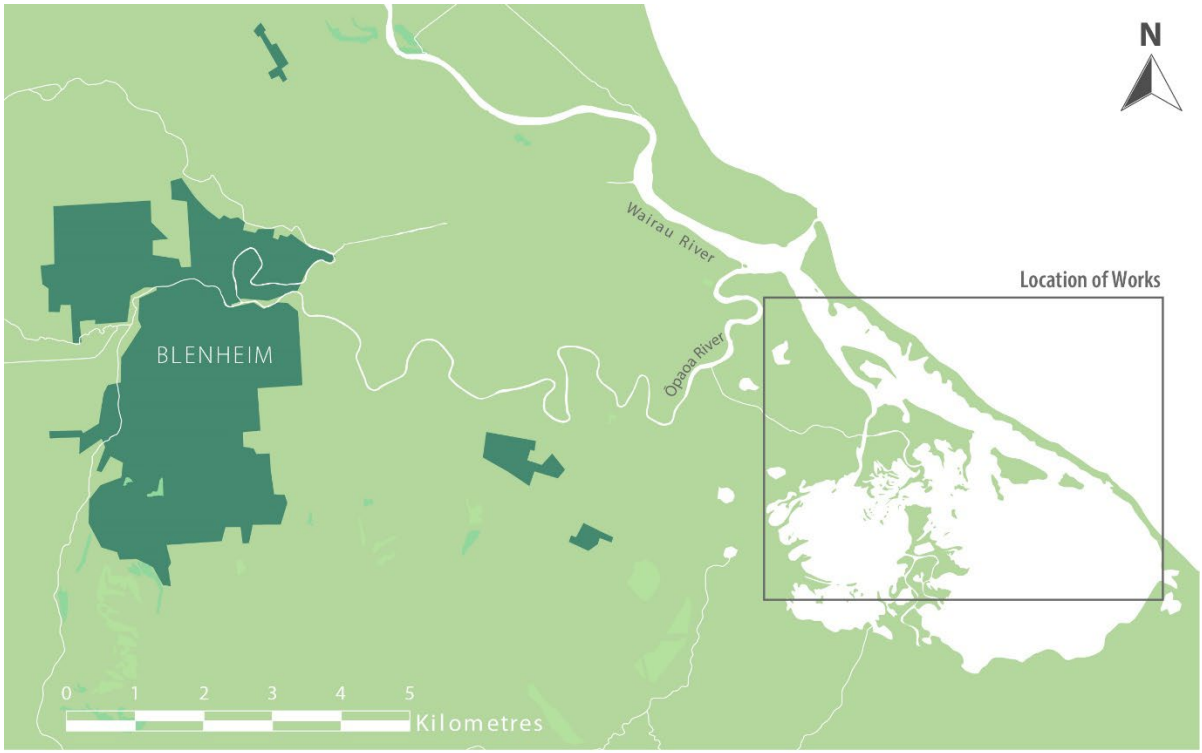
1. Introduction

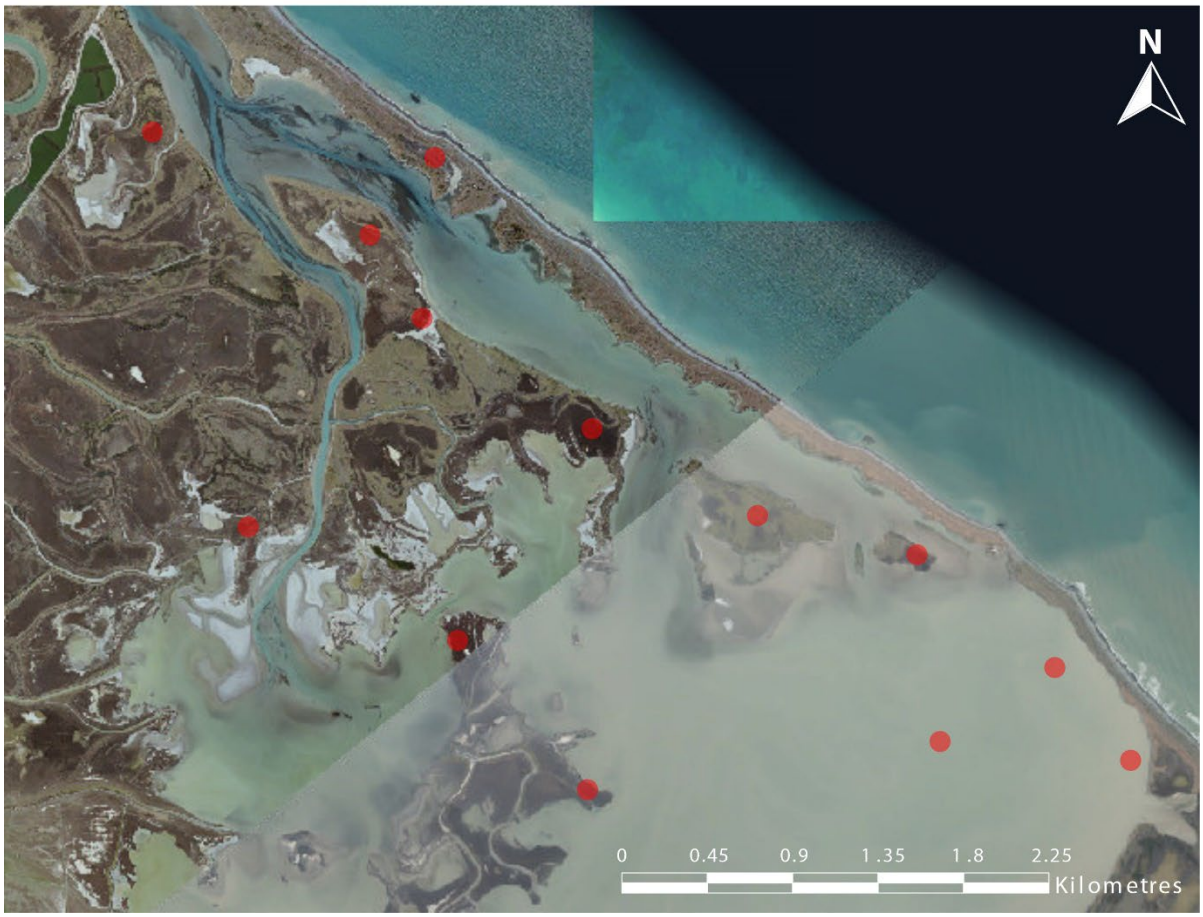
Dr. Kate Clark from GNS Science is planning to carry out coring within the Wairau Lagoons Wetland Management Reserve near Blenheim as part of a research programme into the palaeoenvironmental and tectonic history of the area. This will involve the extraction of subsurface core samples of approximately 80 mm in diameter at several locations around the Wairau Lagoons (also known as the Waikārapi or Vernon Lagoons) (Figure 1). The Crown-owned Wairau Lagoons Wetland Management Reserve is managed by the Department of Conservation (DOC). Given the archaeological and cultural significance of the lagoons and wider area, Southern Pacific Archaeological Research (SPAR) have been commissioned by GNS Science to undertake an archaeological assessment of the proposed activity to determine whether an archaeological authority from Heritage New Zealand Pouhere Taonga (HNZPT) would be required under the HNZPT Act 2014 (Appendix A).

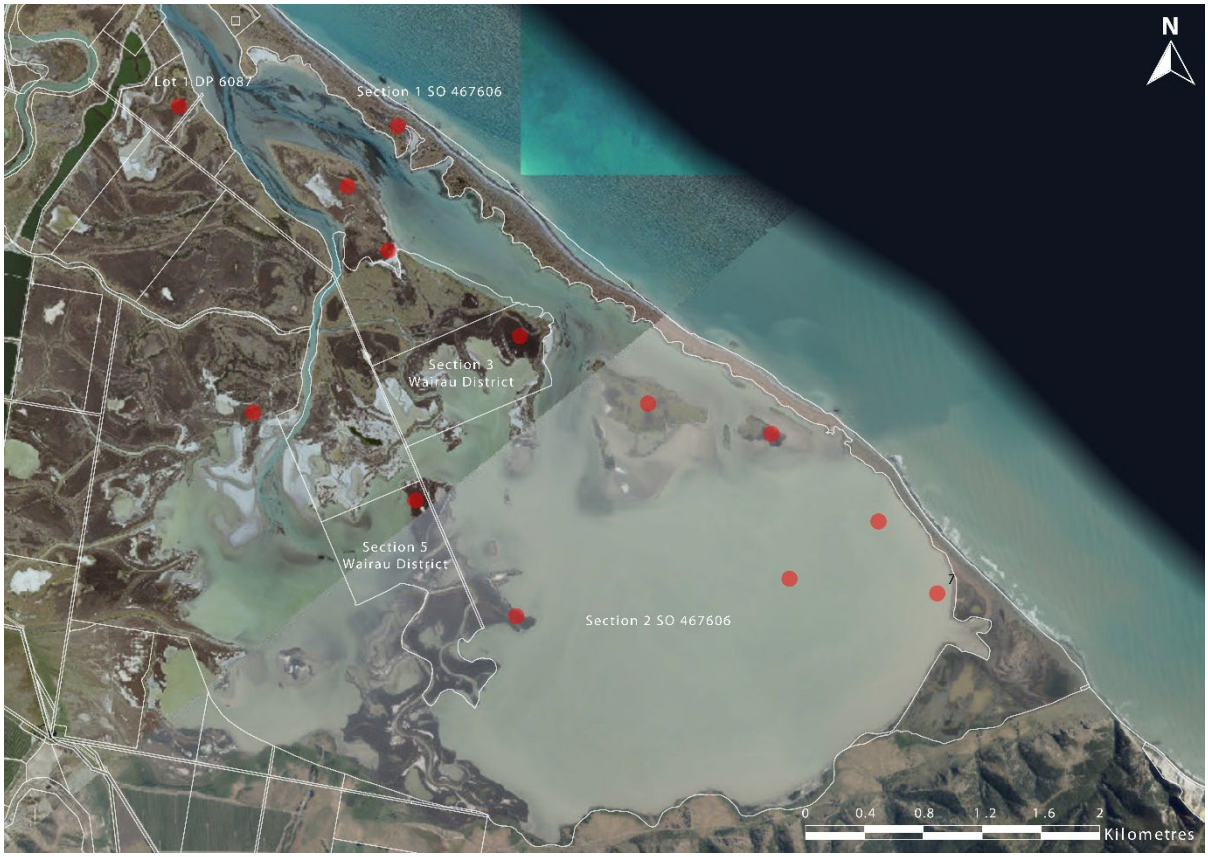
The parcel IDs and associated legal descriptions of the relevant land parcels were obtained from Prover[1] (Figure 2). These are as follows:

- 3707052 (Section 3, Wairau District)
- 3713873 (Lot 1, DP 6087)
- 3725147 (Section 5, Wairau District)
- 7764572 (Section 2, SO 467606)
- 7764573 (Section 1, SO 467606)

[1] Prover is made by Custom Software Ltd., New Zealand's comprehensive source of property data; prover.co.nz.


N
Wairau River
Location of Works
Opaoa River
BLENHEIM
0 1 2 3 4 5
Kilometres


N
0 0.45 0.9 1.35 1.8 2.25
Kilometres


N
Lot 1 DP 6087
Section 1 SO 467606
Section 3
Wairau District
Section 5
Wairau District
Section 2 SO 467606
7
0
0.4
0.8
1.2
1.6
2
Kilometres

2. Methods

One of the authors, Professor Richard Walter, has worked on archaeological projects in the lower Wairau River area for over fifteen years. He has led investigations of the Te Pokohiwi (Wairau Bar) archaeological site, which has resulted in several influential academic publications on various aspects of the archaeology of the site and its place in Aotearoa New Zealand's history (Brooks *et al.* 2009, 2011; Jacomb *et al.* 2014; Kinaston *et al.* 2013; Walter *et al.* 2008, 2017). Walter has also been involved in several archaeological consultancy projects for SPAR in the area, including works undertaken at the Blenheim Sewerage Treatment Plant (Walter 2009, 2012; Walter & Brooks 2009; 2014), and along the lower reaches of the Ōpaoa (formerly Opawa) and Wairau Rivers (Jacomb 2012a, 2012b; Sutton *et al.* 2020). Walter's familiarity with the archaeology of this area is extensive, and in accordance with advice from HNZPT a site visit to the assessment area was not required for this assessment (personal communication by email from Christine Barnett, Regional Archaeologist – Central Region, HNZPT, 15 March 2022).

Desktop research conducted for this archaeological assessment relied on the review of the following historical sources:

- The Marlborough District Council Smart Maps (https://smartmaps.marlborough.govt.nz/smaps/)
- Archives New Zealand (https://collections.archives.govt.nz/web/arena)
- DigitalNZ (https://digitalnz.org/)
- The National Library of New Zealand's Papers Past (https://paperspast.natlib.govt.nz/)
- Museum of New Zealand Te Papa Tongarewa Online Collection (https://collections.tepapa.govt.nz/)
- National Library of New Zealand Te Puna Mātauranga o Aotearoa Alexander Turnbull Library Collections (https://natlib.govt.nz/)
- The University of Otago Hocken Collections Uare Taoka o Hākena (https://www.otago.ac.nz/library/hocken/)
- Heritage New Zealand Pouhere Taonga Digital Library of Archaeological Reports (https://www.heritage.org.nz/protecting-heritage/archaeology/digital-library)
- New Zealand Heritage List/Rārangi Kōrero (https://www.heritage.org.nz/the-list)
- New Zealand Archaeological Association Site Recording Scheme (ArchSite)
- Prover (https://prover.co.nz/)
- Retrolens – Historical Imagery Resource (https://retrolens.co.nz/)

3. Historical Background

3.1 Human history

As a result of its fertile, resource-rich lands and central location in Aotearoa New Zealand, Te Tau Ihu (comprising the Marlborough, Tasman and Nelson regions) has a complex history of iwi migration and settlement (see Mitchell and Mitchell 2004). First settlement of Te Tau Ihu has been dated as early as anywhere in the country at the Te Pokohiwi archaeological site, located adjacent to the Wairau Lagoons at the northern end of Te Pokohiwi Wairau Bar. The archaeological site is a large village site dating to the early fourteenth century and is widely regarded by archaeologists as the 'type site' of what has previously been referred to as the 'Moa-Hunter' or 'Archaic' period of Māori culture (Duff 1977; Jacomb *et al.* 2014; Trotter 1982: 92; Walter *et al.* 2017: 358). Excavations undertaken at Te Pokohiwi since the 1940s have helped establish the origins of tangata Māori and their culture in tropical East Polynesia (Walter *et al.* 2017: 358). Finely flaked stone adzes made from the fine-grained argillite sources of Te Tau Ihu along the Nelson mineral belt have been found at sites throughout most of Aotearoa New Zealand during the fourteenth and fifteenth centuries, pointing to the importance of the region within nation-wide exchange networks operating during this period (Walter *et al.* 2017: 358). The midden fauna at the Te Pokohiwi site indicates that the earliest inhabitants of the region exploited rich surrounds, including moa (*Aves: Dinornithiformes*) populations in the Awatere and Wairau Valleys, and the abundant birdlife and fisheries of the adjacent lagoons and river system and the open sea coast (Mitchell and Mitchell 2004: 51). In addition to these rich mahinga kai, Te Tau Ihu was still at a low enough latitude that the most economically important of the crops brought to Aotearoa New Zealand from tropical East Polynesia, the kūmara (*Ipomoea batatas*), was able to grow (Walter *et al.* 2017: 357). Traditions identify the year-round richness of the local lagoons, marshes and tidal estuaries as one of the main draws to the region for subsequent iwi groups that settled there (Mitchell and Mitchell 2004: 91; Skinner 1912: 106).

This included a branch of Rangitāne, descendants of the crew of the Kurahaupo waka, which migrated to eastern Te Tau Ihu in the seventeenth century (Mitchell & Mitchell 2004: 77-78). By the beginning of the nineteenth century the three main established iwi in Te Tau Ihu were Rangitāne and fellow Kurahaupo descendants Ngāti Apa and Ngāti Kuia (Mitchell and Mitchell 2004: 100). Mitchell and Mitchell (2004: 100) describe the general geographic distributions of these iwi as follows:

> *Rangitane on the northern Kaikoura coast, Wairau and eastern Sounds, with well-established greenstone trails through the Upper Wairau (the 'Hundred Rivers'), Awatere, Waiau-Toa* [the Clarence River] *and other river systems; Ngati Kuia occupied much of the Kaituna, Te Hora, Hoiere, Rangitoto, Whangarae, Wakapuaka and Whakatu district; and*

Ngati Apa sharing Whakatu and occupying westwards from Waimea and Moutere and inland to Kawatiri (Buller).

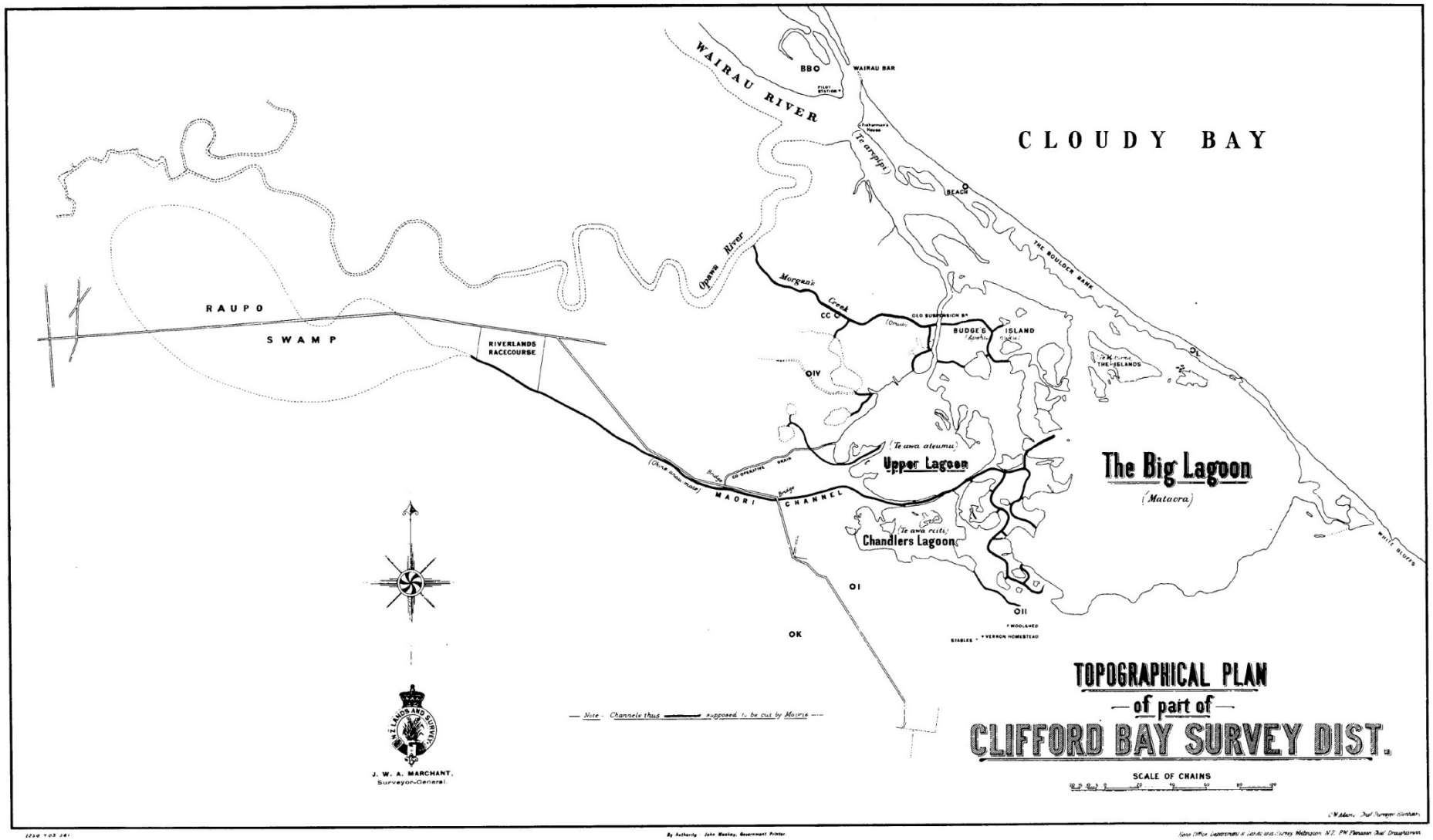
In the 1820s and 1830s this tribal landscape was overturned by an invading force from the Kawhia and Taranaki regions that included hapu of Ngāti Toa, Ngāti Rārua, Ngāti Tama, Te Ātiawa (Ngāti Awa), and Ngāti Koata. The established Kurahaupo iwi were outnumbered and overwhelmed by this wave of northern invaders armed with European weaponry (muskets and cannons; Mitchell and Mitchell: 101). By the mid-1830s, the Kawhia/Taranaki iwi had begun to put down roots across Te Tau Ihu, with Ngāti Toa and Ngāti Rārua establishing themselves in the Wairau area alongside continuing communities of Rangitāne (Mitchell and Mitchell 2004: 139).

Rangitāne o Wairau are credited with what is widely considered to be one of the great engineering feats of the pre-European contact period – the digging of a network of canals and channels to link the natural waterways of the Wairau Lagoons for the husbandry and harvesting of fish and birdlife (Mitchell and Mitchell 2004: 91). According to traditions reported by the surveyor, historian and ethnographer W. H. (William Henry) Skinner (1912), the work was carried out in the eighteenth century, beginning under the direction of the Rangitāne chiefs Patiti and Te Whatakoiro and finishing under Te Whatakoiro's son, Nganga (Mitchell and Mitchell 2004: 91; Skinner 1912: 106). A short account of this network of canals and waterways by Chief Surveyor C. W. (Charles William) Adams appears as Appendix VIII to a 1903 Department of Lands and Survey Report (Adams 1903) and forms the basis of a more detailed later report on the canals by Skinner (1912). Figure 3 is a reproduction of a plan from Adams (1903) highlighting the course of the dug canals. The network is described as having an aggregate length exceeding 12 miles [19.3 km], up to 12 feet [3.6 m] wide and typically two to three feet [0.6-0.9 m] deep, although a more than four mile [6.4 km] long channel connecting the lagoons to the Raupo Swamp is reported as having an average depth of cut of eight feet [2.4 m] (Skinner 1912). Overall, it is estimated that over 60,000 cubic yards [45,873 m^3] of soil were excavated with the use of the kō, a traditional wooden digging implement and probably toki (stone adzes) in the harder clays (Skinner 1912).

In the Te Tau Ihu Statutory Acknowledgements Document (2014) Rangitāne o Wairau and Ngāti Rārua refer to a number of traditional pā, kainga and cultivation areas in and around the Wairau Lagoons. Two major kainga were located within the lagoons' complex - one on Budge's Island, before major earthquakes in 1848 and 1855 that caused the ground level of the whole lagoon area to drop by 1-2 metres (McFadgen and Adds 2018), and the other in the 'frying pan' area between Te Awa-a-roiti (Chandler's Lagoon) and Mataora (the Big Lagoon). A series of pā were located on Te Pokohiwi Wairau Bar which encloses the lagoons on their seaward side. From north to south along Te Pokohiwi Wairau Bar are Moua, Te Aropipi, and Te Pokohiwi. A fourth pā and associated urupā, known as Motueka, was on an island in the lagoons. The Rangitāne tupuna Purama was buried at this place. Two further pā, Utawai and Mokinui, were

located at the southern end of the lagoons. Mokinui was a residence of Te Huataki, one of the chiefs who led the migration of Rangitāne into Te Tau Ihu in the seventeenth century. Morepo, an island in the lagoon to the north of Budge's Island, contains an urupā which is the burial place of the Rangitāne tupuna from whom the island takes its name.

Te Tau Ihu was a prominent setting for early Māori-Pākehā interactions (Mitchell and Mitchell 2004). 'Cloudy Bay', the English name for Karauripe, just to the north of the lagoons, is attributed to James Cook, although he never actually landed there (Roberts 1903). The earliest significant Pākehā settlement in the area is associated with the start of shore whaling in the 1820s (Mitchell and Mitchell 2004: 234). These early whaling settlements were often caught in the middle of the conflict between the alliance of Kawhia/Taranaki iwi and the Kurahaupo iwi (Mitchell and Mitchell 2004: 241). In 1840 the Pākehā settler population in the area was still very much in the minority. The total Pākehā settler population of Cloudy Bay in 1840 is given as 150 by Roberts (1903). In the same year, in one of the earliest colonial records of Māori population, Michael Murphy, Police Magistrate of Wellington, recorded 300 Māori assembled at Otauira (Robin Hood Bay) for his investigations into the disappearance of six Pākehā settlers in the area (Mitchell and Mitchell 2007: 23). During the following two decades, as Pākehā settler numbers significantly increased, local Māori lost much of their land to the New Zealand Company and subsequently the Crown mainly through a mixture of deception, coercion and overt armed force (Mitchell and Mitchell 2004: Chapters 8 and 9). The assessment area falls within the area purportedly included in the infamous Wairau Purchase in 1847. In the 1840s a hotel was established near the mouth of the Wairau River, at the northern end of Te Pokohiwi Wairau Bar by John Francis MacDonald to accommodate the itinerant whalers, bullock drivers and boatmen who passed through (Andrews 1989; Mitchell and Mitchell 2007: 27, 187).


WAIRAU RIVER
BBO
WAIRAU BAR
PILOT STATION
CLOUDY BAY
(Te arapipi)
BEACH
THE BOULDER BANK
Opawa River
Morgan's Creek
CC
OLD SUBDIVISION BY
BUDGE'S ISLAND
(Kawhia)
THE ISLANDS
RAUPO
SWAMP
RIVERLANDS RACECOURSE
OIV
(Te awa ateumu)
Upper Lagoon
The Big Lagoon
(Mataora)
(Okiwa Stream mouth)
Bridge
CO OPERATIVE DRAIN
MAORI
CHANNEL
(Te awa reiti)
Chandlers Lagoon
OI
OII
OK
WOOLSHED
STABLES
VERNON HOMESTEAD
WHITE BLUFFS
— Note. Channels thus ——— supposed to be cut by Maoris ——
J. W. A. MARCHANT.
Surveyor-General
TOPOGRAPHICAL PLAN
— of part of —
CLIFFORD BAY SURVEY DIST.
SCALE OF CHAINS

3.2 Landscape change

The ecology of the assessment area underwent significant change in the middle of the nineteenth century. An estimated 7.1 magnitude earthquake in October 1848 and an estimated 8.1 magnitude earthquake in 1855 lowered the bed of the Wairau Lagoons by 1-2 metres depth and what had previously been characterized by freshwater swamps and mudflats were subjected to increasing tidal movements of water (McFadgen and Adds 2018; Rae 1987: Map 6.1)[2]. Aerial photos of the assessment area are available from 1947 and show the change that has taken place since then (Figure 4).

3.3 Previous archaeological work

The general area of the Wairau Lagoons and the Lower Wairau River is of great archaeological significance and contains many recorded archaeological sites, the best known of which is Te Pokohiwi (P28/21). The location and nature of recorded archaeological sites in ArchSite[3] within and surrounding the Wairau Lagoons is summarized in Figure 5 and Table 1. The local archaeological record is indicative of extensive Māori occupation in the past. There are numerous recorded Māori archaeological sites right along Te Pokohiwi Wairau Bar, at the southern end of the lagoons along the edge of Mataora (the Big Lagoon), in the 'frying pan' area between Te Awa-a-roiti (Chandler's Lagoon) and Mataora (the Big Lagoon), and on Budge's Island. Furthermore, the ArchSite record for the Te Pokohiwi site includes a copy of a 1976 map showing archaeological features recorded by J.R. (Jim) Eyles that suggests an even more extensive archaeological record than the one summarized in Figure 5 and Table 1 (Figure 6). The canal network discussed above has been recorded on ArchSite as two separate sites; P28/19 (which refers specifically to Morgan's Creek) and P28/47. Archaeological sites indicative of nineteenth century Pākehā settlement in the area, including the sites of MacDonald's Hotel (P28/84; which appears to have only lasted until the 1860s) and the roughly contemporaneous Parker's Hotel (P28/86) nearby, are located at the northern end of Te Pokohiwi/Wairau Bar.

[2] http://www.theprow.org.nz/events/life-on-the-fault-lines/#.XvqEkSgzabg

[3] ArchSite is the national database of archaeological sites in New Zealand, www.archsite.org.nz.

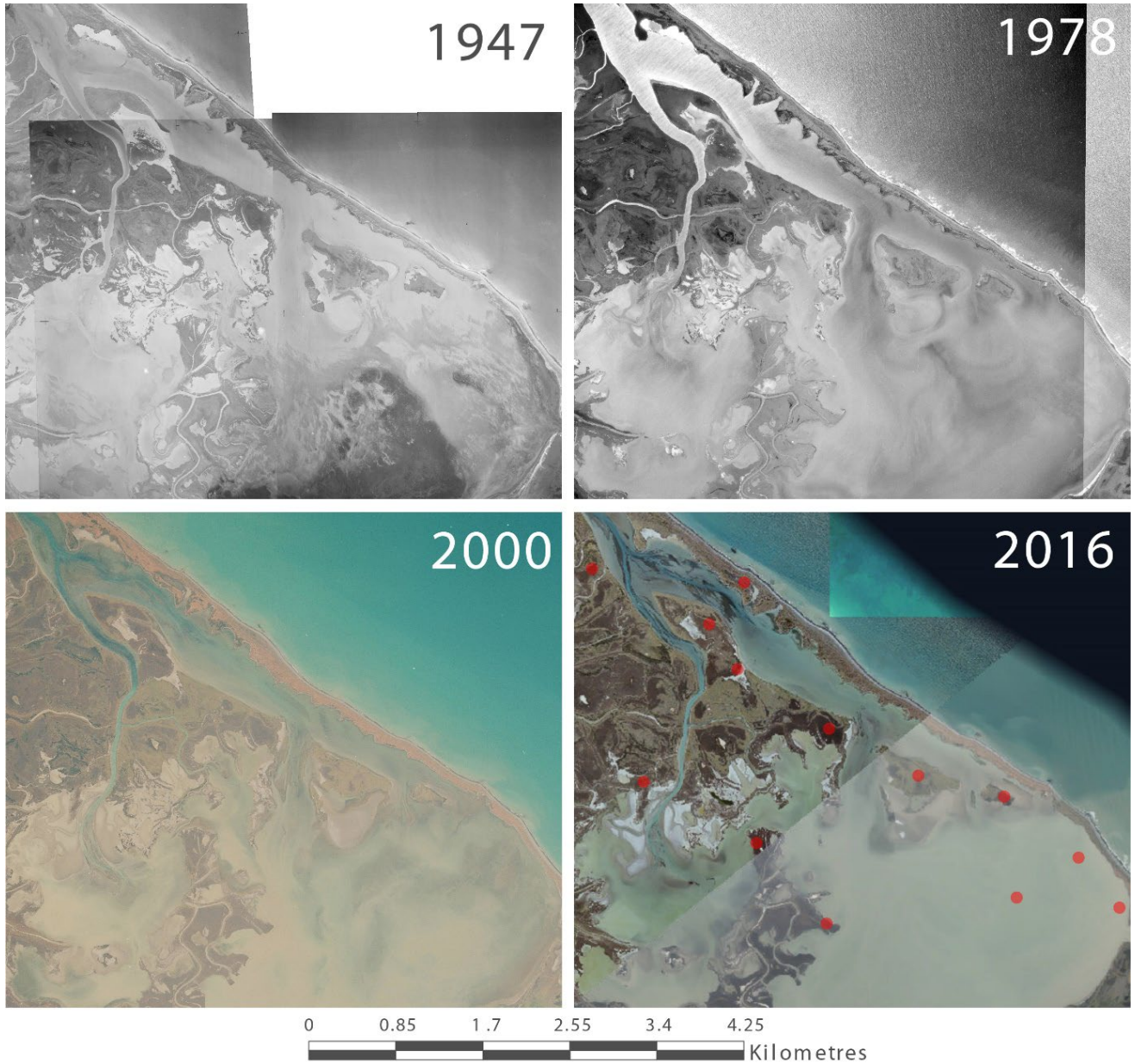


Figure 4. Aerial photographs showing change in the project area landscape over time

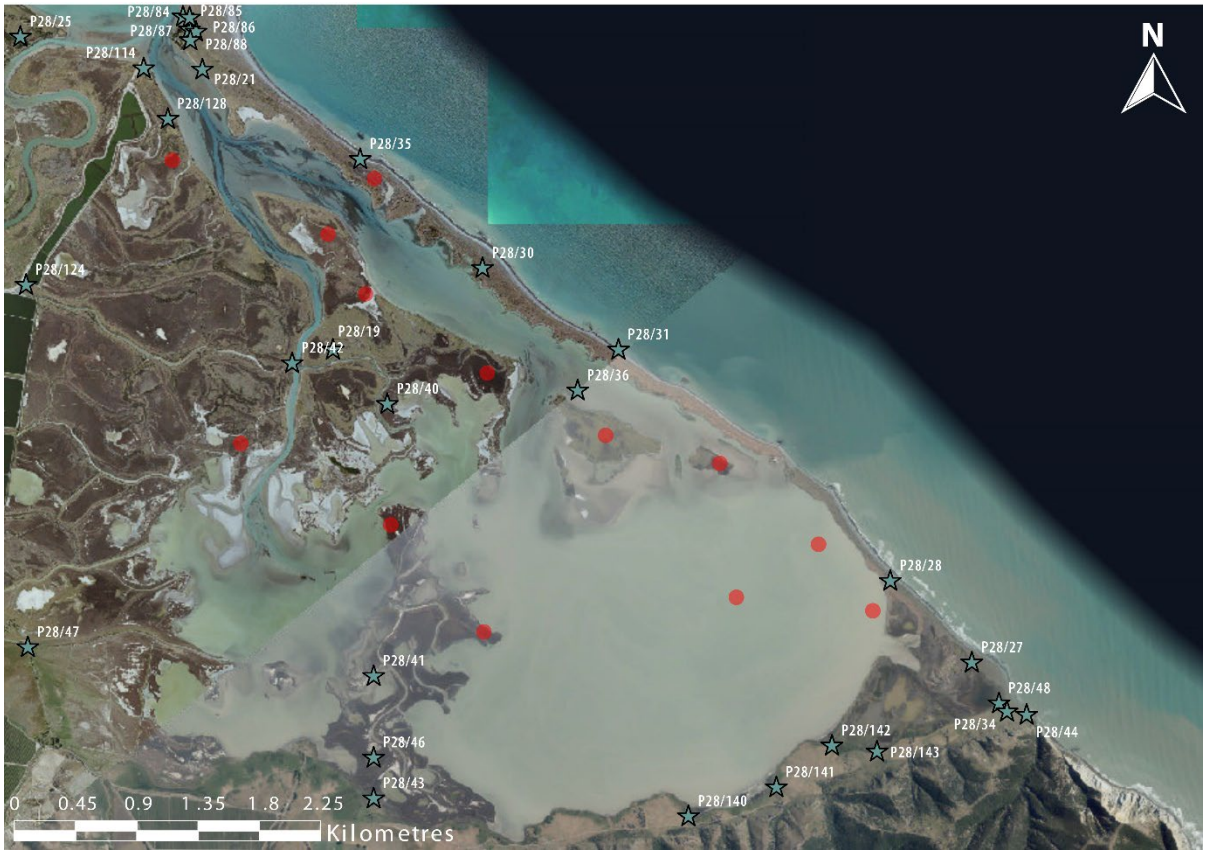


Figure 5. Archaeological sites recorded in ArchSite within and surrounding the Wairau Lagoons. Red circles represent 50 m buffer around proposed coring locations.

Site	Description	Recorder; date
P28/19	"Māori canal" and occupation layer.	O. Wilkes; 1964
P28/21	Wairau Bar archaeological site.	O. Wilkes; 1965
P28/25	Midden and ovenstones. Artefact findspot (fishing sinker).	J. Eyles & N. Matthews; 1973
P28/27	Findspot for moa eggshell and moa bones. Suspected moa hunter site.	J. Eyles & N. Matthews; 1973
P28/28	Midden and ovenstones.	J. Eyles & N. Matthews; 1973
P28/30	Midden.	N. Matthews; 1973
P28/31	Midden. Artefact findspot (tanged argillite blade).	J. Eyles & N. Matthews; 1973
P28/34	Findspot for many artefacts. Multiple patches of midden and ovenstones.	N. Matthews; 1973

Site	Description	Recorder; date
P28/35	Large oven and midden.	J. Eyles & N. Matthews; 1973
P28/36	Fishing weir, recorded as consisting of sticks pushed into the mud.	J. Eyles & N. Matthews; 1973
P28/40	Midden, including ovenstones and charcoal.	B. Brailsford; 1976
P28/41	Midden, including ovenstones and charcoal.	B. Brailsford; 1976
P28/42	Midden.	B. Brailsford; 1976
P28/43	Area of burnt ovenstones.	B. Brailsford; 1976
P28/44	Pit features.	B. Brailsford; 1976
P28/46	Stone crossing, recorded as many stones placed to width of one metre on channel mud to form a stable crossing point.	B. Brailsford; 1976
P28/47	A series of Māori canals in the Wairau Lagoons.	B. Brailsford; 1976
P28/48	Stone rows.	B. McFadgen; 1975
P28/84	MacDonald's Hotel site.	S. Bagley; 2009
P28/85	Midden.	S. Bagley; 2009
P28/86	Parker's Hotel site.	S. Bagley; 2009
P28/87	Historic bottle dump.	S. Bagley; 2009
P28/88	A substantial depression and old spoil mound. This is the general area in which Jim Eyles uncovered the first Wairau Bar burial in 1939.	S. Bagley; 2009
P28/114	Midden and ovenstones. Artefacts noted as present.	R. Walter; 2010
P28/124	Midden and shallow fire features ('scoops') containing ovenstones. Artefacts noted as present.	E. Brooks; 2011
P28/128	A series of depressions, interpreted as fish traps, and possibly an associated midden.	D. Foster; 2012
P28/140	Midden and ovenstones.	D. Foster; 2014
P28/141	Midden and ovenstones. Artefacts noted as present.	D. Foster; 2014
P28/142	Midden and ovenstones.	D. Foster; 2014
P28/143	Midden and ovenstones. Artefacts noted as present.	D. Foster; 2014

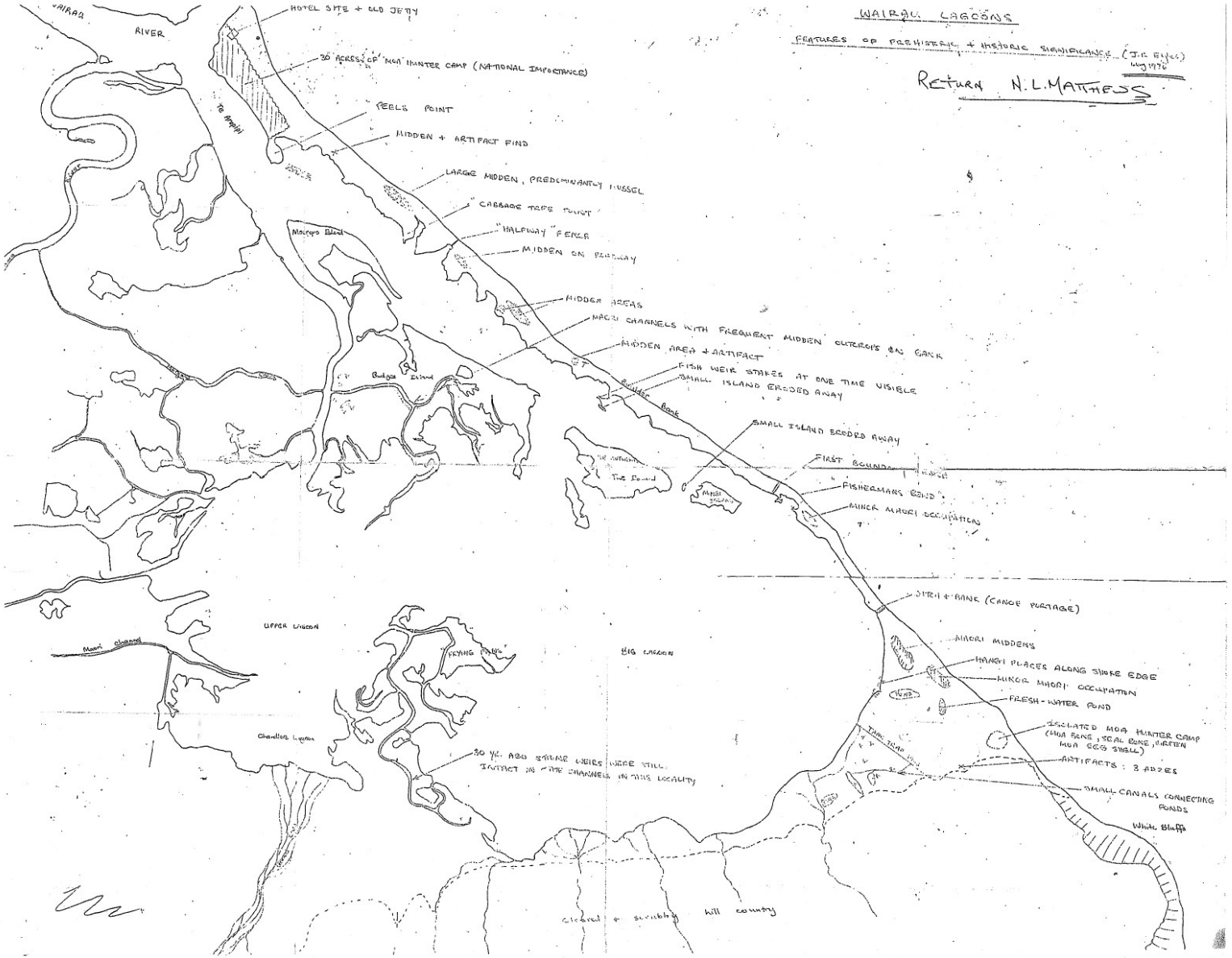


Figure 6. Reproduction of 1976 map showing archaeological features around the Wairau Lagoons recorded by J.R. Eyles (Source: ArchSite Record P28/21).

4. Archaeological, Māori and Other Values

The values of an archaeological site can be assessed in relation to the potential of the site to provide information about the history of Aotearoa New Zealand, its associations with past people, events or historical themes, and its connections with contemporary cultural groups (Gumbley 1995; Walton 1999, 2002). The condition of the site, its rarity or representativeness and the degree to which the site contributes to the wider context of an archaeological landscape may also contribute to its values. A single site may possess many different values, connections and interpretations. On its own or as part of a group, the site may be an important expression of cultural identity, local character or sense of place, and may play an important part in the ongoing production of socio-cultural identities for contemporary groups. Consequently, the values of an archaeological site are often fundamentally intertwined with contemporary socio-cultural perspectives of sites, places and landscapes. The Wairau Lagoons area has significant archaeological, historical and Māori cultural values, which are summarized in Table 2. HNZPT requires that Māori cultural values and associations are provided by mana whenua for authority applications.

Table 2: Archaeological, Māori and other values of assessment area.

Criterion	Assessment
Condition	The extent and condition of subsurface archaeological evidence in the area is not fully known, but from the evidence considered in this assessment appears to be extensive. The canal network is still clearly visible and well defined on modern aerial photos.
Historical Associations	Assessment area is located within a landscape of great significance in the traditional histories of mana whenua (Mitchell & Mitchell 2004).
Rarity/Uniqueness	Intact archaeological evidence relating to the earliest phase of the Māori settlement of Aotearoa New Zealand (known from the nearby Te Pokohiwi archaeological site) is rare.
Contextual Value	Any encountered archaeological evidence will have contextual value as a component of a highly significant wider archaeological, historic and cultural landscape.
Information Potential	The discovery of intact archaeological material from the earliest phase of the Māori occupation of Aotearoa New Zealand (known from the nearby Te Pokohiwi archaeological site) would have particularly high archaeological information potential.
Amenity Value	High. There are public access walks in the area.

Criterion	Assessment
Cultural Associations	Any encountered archaeological evidence is most likely to have Māori cultural associations. The Wairau Lagoons are a taonga, an area of great importance for Māori.

Sites in the lower Wairau River and Wairau lagoons areas investigated by Richard Walter and SPAR indicate a landscape subjected to intensive use throughout the Polynesian settlement phase of Aotearoa New Zealand in the fourteenth century. Te Pokohiwi, although an internationally significant moa hunting village that has provided extensive information on the earliest phase of Polynesian settlement, is only one component of a wider associated landscape. It can be expected that sites associated with the Te Pokohiwi village site are present throughout the Wairau Valley and within the vicinity of the assessment area, the Wairau Lagoons Wetland Management Reserve. Sites in the area have yielded cultural features and material typical of that earliest phase, including midden, ovens, stone flakes, moa bone and several stone adzes, which were discovered nearby during work carried out by SPAR for the Blenheim Sewerage Treatment Plant (Brooks 2010; Walter 2009; Walter 2012).

4.1 Statutory Acknowledgments

As part of their respective Treaty of Waitangi settlements with the Crown the cultural, spiritual and historical associations of Rangitāne o Wairau and Ngāti Rārua iwi with the Wairau Lagoons have been recognised through Statutory Acknowledgments (Te Tau Ihu Statutory Acknowledgements 2014). The full Statements of Association from both of these iwi are provided in Appendix B.

5. Assessment of Effects

The planned works will involve the extraction of cores of about 80 mm diameter at several locations around the Wairau Lagoons using either a piston corer or a vibrocorer. Figure 7 gives an indication of the extent of the subsurface disturbance. Thirteen proposed coring locations are shown in relation to recorded archaeological site locations in Figure 8. Even allowing for a 50 m radius buffer, these locations avoid the known extent of recorded archaeological sites.

Figure 7. LEFT: Piston corer in use. RIGHT: Vibrocorer in use. Photographs provided by Dr. Kate Clark (GNS Science).

The landscape around Te Pokohiwi is significant in its potential for archaeological evidence related to the earliest phase of Aotearoa New Zealand's history. However, given the extent of the subsurface disturbance inferred from Figure 7 the potential impact on any yet unrecorded archaeological evidence will be less than minor. The maximum potential archaeological information lost is considered here to be small in comparison to the potential information to be gained about the palaeoenvironmental and tectonic history of the area. Such data could inform future archaeological interpretations of this landscape.

The only additional factor that we note here is the planned location of Core 3 in Figure 8 on Te Motueka (Skinner 1912), recognized as the location of an urupā in Rangitāne o Wairau's Statement of Association (Te Tau Ihu Statutory Acknowledgements 2014 and Appendix B).

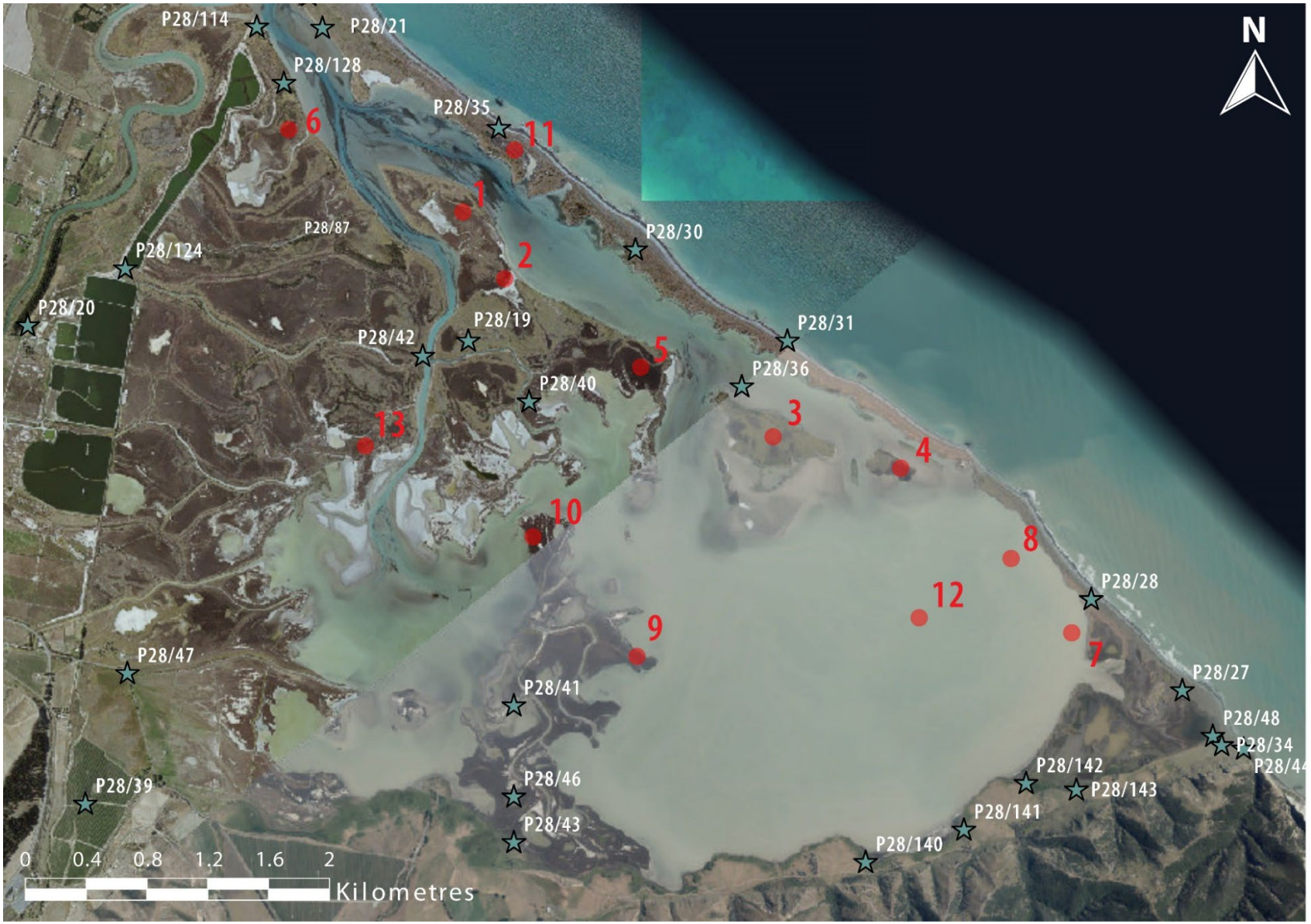


Figure 8. Numbered core locations showing proximity to recorded archaeological sites. Core numbers referred to in text. Red circles represent 50 m buffer around proposed coring locations.

6. Conclusion and Recommendations

The assessment area is located within a wider landscape of great archaeological, historical and cultural significance. However, given the inferred extent of the subsurface disturbance during planned coring and that the potential effects on any yet unrecorded archaeological evidence will be less than minor, we believe that an archaeological authority under section 44 of the HNZPT Act 2014 is not required from HNZPT prior to commencement of works. We do, however, make the following recommendations:

1. The HNZPT Central Region Archaeologist is consulted directly and kept informed of progress by GNS Science.
2. Tangata whenua are consulted and kept informed of progress by GNS Science. Of particular interest to Rangitāne o Wairau in particular may be the planned location of Core 3 in Figure 8, as Te Motueka is named as the location of an urupā in Rangitāne o Wairau's Statement of Association (Te Tau Ihu Statutory Acknowledgements 2014 and Appendix B).
3. If suspected archaeological evidence (e.g. stone artefacts or midden material) is noted as present in any of the extracted core samples, this be documented and photographed and reported to SPAR who will update ArchSite if required.

7. References

Adams, C. W. 1903. Maori canals in Marlborough. *Annual Report on Department of Lands and Survey* (C-01), pp. 161-162. *Appendix to the Journals of the House of Representatives*.

Andrews, J. 1989. Marlborough river transport of bygone days and some of the colourful operators. *Journal of the Nelson and Marlborough Historical Societies*, 2(3): 13-20. Available via http://nzetc.victoria.ac.nz/tm/scholarly/tei-NHSJ05_03-t1-body1-d3.html [Accessed 16 February 2022].

Brooks, E. 2010. Final Report on Archaeological Monitoring for New BSTP Pipeline. Unpublished report to the Marlborough District Council.

Brooks, E., C. Jacomb, and R. Walter. 2009. Archaeological Investigations at Wairau Bar. *Archaeology in New Zealand*, 52(4): 259-268.

Brooks, E., Walter, R., and Jacomb, C. 2011. History of Excavations at Wairau Bar. *Records of the Canterbury Museum.* 25: 13-58.

Duff, R. 1977. *The Moa-Hunter Period of Maori Culture* (3rd ed.). Wellington: E. C. Keating, Government Printer.

Gumbley, W. 1995. Guidelines for the provision of archaeological information and assessment for authority applications under section 11 or 12 of the Historic Places Act 1993. *Archaeology in New Zealand* 38(2): 100-105.

Jacomb, C. 2012a, Archaeological assessment of proposed walkway and irrigation network at the mouth of the Opawa River. Unpublished report to Marlborough District Council.

Jacomb, C. 2012b, Archaeological Assessment of Proposed Stop Bank Upgrade along Opawa River near Hardings Road, Marlborough. Unpublished report to Marlborough District Council.

Jacomb, C., R.N. Holdaway, M.E. Allentoft, M. Bunce, C.L. Oskam, R. Walter, and E. Brooks. 2014. High-precision dating and ancient DNA profiling of moa (Aves: Dinornithiformes) eggshell documents a complex feature at Wairau Bar and refines the chronology of New Zealand settlement by Polynesians. *Journal of Archaeological Science*, 50: 24-30.

Kinaston, R.L., Walter R.K., Jacomb, C., Brooks, E., Tayles, N., Halcrow, S.E., *et al.* 2013. The First New Zealanders: Patterns of Diet and Mobility Revealed through Isotope Analysis. PLoS ONE 8(5): e64580.

McFadgen, B. G. and Adds, P. 2019. Tectonic activity and the history of Wairau Bar, New Zealand's iconic site of early settlement. *Journal of the Royal Society of New Zealand*, 49(4): 459-473. DOI: 10.1080/03036758.2018.1431293.

Mitchell, H. and J. Mitchell. 2004. *Te Tau Ihu O Te Waka: A history of Maori of Nelson and Marlborough. Volume I. Te Tangata me te Whenua: The People and the Land.* Wellington: Huia Publishers in association with Wakatu Incorporation.

Mitchell, H. and J. Mitchell. 2007. *Te Tau Ihu O Te Waka: A history of Maori of Nelson and Marlborough. Volume II. Te Ara Hou: The New Society.* Wellington: Huia Publishers in association with Wakatu Incorporation.

Rae, S. N. (ed.) 1987. *Water and Soil Resources of the Wairau: Water Resources. Volume One.* Blenheim: Marlborough Catchment and Regional Water Board.

Roberts, W. H. S. 1903. Maori Nomenclature. Maori names of places in the provincial district of Marlborough. *Marlborough Express*, Volume XXXVII, Issue 216, 12 September. Available via https://paperspast.natlib.govt.nz/newspapers [Accessed 23 June 2020].

Skinner, W. H. 1912. Ancient Maori Canals. Marlborough, N.Z. *Journal of the Polynesian Society*, 21 (83): 105-108.

Sutton, N., Jennings, C., Greig, K., and Walter, R. 2020. Archaeological Assessment for Lower Wairau River Stopbank Upgrade Project: MacDonald Reach. Unpublished Report to the Marlborough District Council.

Te Tau Ihu Statutory Acknowledgements 2014. PDF Document available via https://www.marlborough.govt.nz/your-council/tangata-whenua/statutory-acknowledgements [Accessed 19 January 2022].

Trotter, M. 1982. Canterbury and Marlborough. In N. Prickett (ed.), *The First Thousand Years: Regional Perspectives in New Zealand Archaeology*, pp. 83-102. New Zealand Archaeological Association Monograph 13. Palmerston North: Dunmore Press.

Walter, R., 2009. Report on Archaeological Investigations at Blenheim Sewage Treatment Plant carried out under s18 Authority 2009/170. Unpublished report to the Marlborough District Council.

Walter, R., 2012. Interim report on archaeological investigations at the Blenheim Sewage Treatment Plant carried out under Authority 2011/349. Unpublished report to the Marlborough District Council.

Walter, R., and Brooks, E. 2009. Archaeological Assessment of Proposed Pipeline, Spring Creek to Blenheim Wastewater Treatment Plant. Unpublished report to Marlborough District Council.

Walter, R., and Brooks, E. 2014. Final report on archaeological monitoring at the Blenheim Sewage Treatment Plant carried out under Authority 2011/349. Unpublished report to Marlborough District Council.

Walter, R., Brooks, B., and Jacomb., C. 2008. Report on Archaeological Investigations at Wairau Bar (P28/21) Carried Out Under s18 Authority 2009/85. Unpublished report to the New Zealand Historic Places Trust.

Walter, R., H. Buckley, C. Jacomb, and E. Matisso-Smith. 2017. Mass Migration and the Polynesian Settlement of New Zealand. *Journal of World Prehistory*, 30: 351–376.

Walton, T. 1999. *Assessing the archaeological values of Historic Places: procedures, methods and field techniques.* Science and Research Internal Report No. 167. Wellington: Department of Conservation.

Walton, T. 2002. Assessing archaeological value. *Archaeology in New Zealand* 45(3): 220-236.

Appendix A: Legislation

There are two main pieces of legislation in New Zealand that regulate work that affects archaeological sites. These are the *Heritage New Zealand Pouhere Taonga Act 2014* (HNZPTA) and the *Resource Management Act* 1991 (RMA).

Heritage New Zealand Pouhere Taonga Act 2014

Heritage New Zealand Pouhere Taonga (HNZPT) administers the HNZPTA. The HNZPTA contains a consent (authority) process for any work where there is reasonable cause to suspect that an archaeological site or sites will be affected, where 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.

Any person who intends to carry out work that will damage or destroy an archaeological site, or to investigate a site using invasive archaeological techniques, must first obtain an authority from HNZPT. The process applies to sites on land of all tenure including public, private and designated land. The HNZPTA contains penalties for unauthorised site damage or destruction.

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

- The site is recorded in the New Zealand Archaeological Association Site Recording Scheme or listed by HNZPT,
- The site only becomes known about as a result of ground disturbance, and/ or,
- The activity is permitted under a district or regional plan, or a resource or building consent has been granted.

Resource Management Act 1991

The Resource Management Act 1991 identifies the protection of historic heritage from inappropriate subdivision, use and development as a matter of national importance (RMA Amendment Act 2003 s.6). In carrying out their functions under the RMA local authorities must, in relation to managing the use, development, and protection of natural and physical resources, recognise and provide for matters of 'national importance'.

Historic heritage is defined by the RMA (s.2) as follows:

Historic heritage:

(a) means those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, deriving from any of the following qualities:

(i) archaeological:
(ii) architectural:
(iii) cultural:
(iv) historic:
(v) scientific:
(vii) technological;

and

(b) includes -

(i) historic sites, structures, places, and areas; and
(ii) archaeological sites; and
(iii) sites of significance to Māori, including wahi tapu; and
(iv) surroundings associated with the natural and physical resources (RMA s.2).

Local authorities have a responsibility to protect historic heritage within their district or region. Protecting historic heritage involves identifying historic heritage places, managing adverse effects and promoting the protection of heritage values in accordance with conservation principles (NZHPT 2004).

Decisions made under the RMA must take account of any iwi planning documents that have been lodged with the relevant local or regional government body.

Appendix B: Statements of Association

The following are the full Statements of Association with the Wairau Lagoons area from Rangitāne o Wairau and Ngāti Rārua iwi as they appear in the 2014 Te Tau Ihu Statutory Acknowledgements Document.

Rangitāne o Wairau

The Wairau Lagoons and an associated extensive complex of pā, kainga, cultivations and urupā formed the cultural, spiritual and economic heart of the Rangitāne iwi in the Wairau. The area remains central to the identity and mauri of the iwi.

The lagoons were rich eeling and birding grounds of inestimable importance. According to Rangitāne tradition, Te Huataki, leader of the Rangitāne people who settled the Wairau in the seventeenth century, was drawn to the area because of the rich resources of the lagoons. The lagoons were known as Wahanga-a-Tangaroa and Mataora (the 'Long Lagoon' and the 'Big Lagoon' respectively).

Extensive modification of the natural waterways was subsequently carried out by Rangitāne from the mid-1700s. They created massive artificial channels (the total length of which are around 26km) and ponds for trapping birds, fish and eels. The canals average about 3 metres in width and up to a metre deep, though some on Budges Island are 15 metres wide. It is estimated that approximately 60,000 cubic yards of soil were excavated using the traditional ko, or wooden digging implement. This was one of the great engineering feats of the pre-contact period, and confirms that a large population inhabited the area. This work was begun under the direction of the Rangitāne rangatira Patiti and Te Whatakoiro, and completed by the succeeding generation under Tama Ngenge, Te Whatakoiro's son. Many of the canals and ponds were named for the tupuna particularly associated with them, including Morepo and Tukanae. The soil was removed and placed in a hand-cart or stretcher, which was lifted and carried away. At regular intervals the canal banks had buttresses projecting into the channel so as to narrow the waterway. At these narrowed gaps eel traps and nets were fixed. Close to the buttresses were sands pits, into which the catch was emptied.

Wildfowl (ducks and swans) were also captured in the lagoons during the moulting season (January to May), when the birds were unable to fly. Moulting ducks were known as maumi. The birds were potted in their own fat in calabashes or containers made from totara bark or kelp obtained from Te Pokohiwi ('Kupe's Elbow', also known as the Boulder Bank). Some preserved birds were kept for local consumption, and some were traded with other iwi. Strict rahui and conservation protocols were placed on the lagoons in order to preserve the various

marine and bird species. The lagoons have remained an important source of mahinga kai for Rangitāne up to recent times.

Two major Rangitāne occupation areas were located within the lagoons' complex - one on Budge's Island and the other in the 'frying pan' area between Chandler's Lagoon and the Big Lagoon. Morepo, an island in the lagoon, contains an urupā which is the burial place of the Rangitāne tupuna from whom the island takes its name. A number of other pā (with associated urupā) and kainga were built in and around the lagoons to protect the valuable resources of the area.

A series of pā were located on Te Pokohiwi (the Boulder Bank) which enclose the lagoons on their seaward side. The first of these, named Moua, was located at the northern end of Te Pokohiwi on what is known as the Wairau Bar. Another pā a little to the south was named Te Aropipi. The next was located a mile to the south, and was known as Te Pokohiwi. This was the main pā on the Boulder Bank. The fourth pā and urupā, known as Motueka, was on an island in the lagoons. The tupuna Purama was buried at this place. Two further pā, Utawai and Mokinui, were located at the southern end of the lagoons. Mokinui was a residence of Te Huataki, who led the first Rangitāne migrations to Te Tau Ihu. Another pā named Te Taumanu-o-Matahoura (named after the waka in which Kupe travelled to Aotearoa) was located at Te Parinui-o-Whiti (White Bluffs). This was a residence of Te Hau, a legendary Rangitāne tupuna. Near the pā is a rock formation resembling part of Kupe's waka, Te Taumanu-o-Matahoura.

The whole of Te Pokohiwi, especially its northern part (the Wairau Bar), was highly suitable for a fowling and fishing economy. It gave access to the sea and ample quantities of firewood. Whitebait was present, and kahawai ran seasonally into the river and lagoon. Eels, flounder, shellfish, swans and ducks (grey and paradise) also abounded. Rock formations running out to sea near Te Pokohiwi pā were a good source of mussels and were greatly valued by Rangitāne. These were used well into the twentieth century.

Large numbers of moa were also hunted by the very early inhabitants. One theory is that the birds were rounded up in the Wairau plain or driven down from the Vernon hills, herded round the base of the Mataora Lagoon, and then driven along the Bar to the cul-de-sac provided by its northern end where they were killed.

During the twentieth century Rangitāne continued to maintain their ancient associations with the lagoons and the resources of the area, and attempted to exercise their kaitiaki responsibilities.

Te Pokohiwi was not only a Rangitāne occupation area and important source of mahinga kai, but was also an urupā and wāhi tapu complex. Burials on the Bar date from around the thirteenth century, when the area was the home of Aotearoa's founding population. Rangitāne,

who continued to bury their own dead in this urupā, are connected through whakapapa with these very early inhabitants, and are kaitiaki of this deeply sacred place. Te Pokohiwi was an important noho huihui (gathering place) where significant events affecting the iwi were debated and agreed, including the manner of Rangitāne engagement with settlers in the mid-1850s.

Rangitāne attempted to exercise their kaitiaki responsibilities, and strongly opposed archaeological excavations of their urupā at Moua, on the northern extremity of Te Pokohiwi, between 1939 and 1954. After a protracted struggle Rangitāne kaitiaki responsibilities were finally recognised, and tupuna kōiwi (bones of the ancestors) taken from Moua have been re-interred.

Ngāti Rārua

For Ngāti Rārua, the Wairau Lagoon is of great historical cultural, spiritual significance. The first Ngāti Rārua settlement in the Wairau was established at the Wairau Bar, which adjoins the lagoon. Tūpuna cultivations were on the shores of Mataora, the traditional name for the largest water area in the Wairau Lagoon.

Located 7.5 kilometres south east of Blenheim, the Wairau Lagoon is situated at the mouth of the Wairau River. The lagoon covers about 200 hectares of saline marsh and mud flats between the Wairau River mouth and the Vernon Estate to the South. The lagoon was formed over the last 6,500 years behind an eight kilometre long boulder bank (Te Poko Hiwi). Along the boulder bank, which separates the lagoon from Cloudy Bay (Te Koko-a-Kupe) are a series of Māori archaeological sites that are of great national significance. These particular sites include middens, campsites and burial grounds.

The exploits of the famous explorer Kupe are entrenched within this region. These traditions describe the story of Te Kāinga-a-Haumia (the house of Haumia). The Kahui Tipua whose chief was Haumia were occupying the Wairau at the date of Kupe's visit, and tried to obstruct him by building a reef of rocks at Vernon Bluff and at Cape Campbell. Kupe sailed around the first obstruction and at the second caused an island called Titipu or Titipua to sink beneath the waves. As a punishment to these people he let in the sea on their plantations, this being the origin of the lagoons.

The period of the Moa Hunter, which was long before the arrival of Ngāti Rārua to the area, saw the large birds herded from the Wairau Plains and surrounding hills along this bank from which there was no possible escape. The lagoon was an ancestral mahinga kai for Ngāti Rārua, where it was utilised as a hunting ground for birds and for fishing, especially flounder, kahawai and whitebait. Channels dug in the lagoon prior to the arrival of Ngāti Rārua to help trap

moulting birds or eels were extensively used by Ngāti Rārua. These waterways were of great economic importance to Ngāti Rārua.

The channels ran for twenty kilometres. Many were up to twelve feet wide and up to eight feet deep. Te Aropipi (the place of the pipi) was one of the most prominent of the channels, running alongside the seaward boulder bank. Another important channel was named Orua and connected the Opawa River to the upper lagoon (Ohine-anau mate). At regular distances the banks had walls left projecting slightly into the channel and narrowing the waterway passage. These were used for eel traps and other fish nets, when the fishing season was underway. Close to these trapping spots were sand pits where the traps and nets would be emptied.

The traditional method of killing tuna was to sprinkle fine dry earth grit or sand on the eel, whereby it would quickly die and at the same time the bruising caused by knocking the fish on the head was avoided. This was important because in the large fish drives where food was taken and prepared to last throughout the winter, the bruised part of the fish would quickly putrefy and become useless for the winter stock. Immense quantities of eels were caught each season along the winding lengths of the various canals.

Another principal use of the channels was the capture of the wild fowl that bred and visited the lagoons. During the moulting season the birds were unable to fly (a state known as maumi or flappers) and were easily taken by hand in the narrow water lanes. The Pūtangitangi and Parera had their own respective moulting seasons and would be herded up the water catchments. A selection process would take place whereby only the birds in good condition were taken. Large numbers of the birds would be harvested each season and then stored in a traditional manner for future use.

In addition to the mahinga kai, there were two major occupation areas within the canal systems. A village was located on Budges Island, before the large earthquake in 1855, which dropped the whole lagoon area. Another larger village was located near the canals in the 'Frying Pan' and between Chandler's Lagoon (Te Awa-a-roiti) and Mataora.

Ngāti Rārua are kaitiaki with responsibilities to take care of places, natural resources and other taonga within their rohe. It is an obligation of Ngāti Rārua hapū and whānau to make decisions about how to look after and protect the physical and spiritual well being of the whenua, of taonga, of wāhi tapu and all places and sites of significance.

Although sourced in spiritual values, the kaitiaki responsibilities of Ngāti Rārua are expressed as a practical solution for the regulation and control of human activities on the natural environment. Central to those responsibilities is the maintenance of customary practices and the sustainable use of natural resources. This kaitiaki role is an all-encompassing one, providing for the protection of biodiversity, the utilisation of resources, the maintenance of resources for present and future generations and the restoration and enhancement of damaged ecosystems.

Decisions about how to look after taonga species and places within the rohe are based on mātauranga Māori and implemented through tikanga, traditions practised by Ngāti Rārua for many generations.

The continued recognition of Ngāti Rārua cultural identity, their customs, traditions and status as kaitiaki is therefore intertwined with the Lagoon and associated resources; and is paramount to the cultural wellbeing of Ngāti Rārua.