Te Whau:

Connecting the people, the places, the taonga

Angela J Thomson PhD

This book was commissioned by the Whau Coastal Walkway Environmental Trust and philanthropic trusts such as the Trusts Community Foundation. It gives an historical account of the Whau River, from the time of Tamaki's earliest inhabitants to the hustle and bustle of modern day Auckland.

The book celebrates the conception and construction of Te Whau Pathway, a work in progress, which aims to link the Manukau Harbour at Green Bay Beach to the Waitemata Harbour at Te Atatu Peninsula along the western edge of the historic Whau River. Te Whau Pathway is a partnership between the Whau Coastal Walkway Environmental Trust, the Whau and Henderson-Massey Local Boards, Te Kawerau a Maki, Ngāti Whātua o Ōrākei, Auckland Transport and Auckland Council.

Front cover: Ron Augustin's Boat Shed, Whau River, April 1981.
(Ron is standing on left of concrete yacht with friend George. Phil and Loretta Augustin are standing on the jetty next to their 'trailer sailer' and the Radical Jandy II is in the boatshed.)
Photo courtesy of Nancy Augustin, 2016.

Te Whau:

Connecting the people, the places, the taonga

Angela J Thomson PhD

Angela J Thomson, PhD.
First published in 2017 by the Whau Coastal Walkway Environmental Trust

IBSN 978-0-473-36985-9

Table of Contents

Acknowledgements

This book is dedicated to the many groups, organisations, charities, and individuals who put in so much effort undertaking the rehabilitation and restoration of the Whau River and its catchment area. Because of their immense hard work, the river will continue to flourish as a healthy, living legacy to be treasured by future generations.

Special thanks go to Iris M. Donoghue MNZM JP for her initial vision of a written resource dedicated to the Whau River and to the Te Whau Pathway project. A huge thank you to Nancy Augustin, Joan Gasparich, Gloria Jean Ritchie, Deana Platt, Lin Gow, Craig Daw and Christina Mulvey. This book would not be complete without your wonderful and insightful stories and treasured memories.

Foreword

Te Whau: Connecting the people, the places, the taonga is a welcome and timely book. It is neither only a history, nor a natural history, nor a guide book, nor a geography although it contains all those elements. It is more than any of these things, individually. It is the story of what has been, what is and what always will be, deeply important to that part of Auckland, the river and the land around it, that we call the Whau.

Angela Thomson lights a journey through people and events over almost a thousand years. She opens the door to a history that is every bit as fascinating, enthralling, breath-taking and at times bloody and horrifying, as the histories of any other land. In so doing she casts light on topics as important as how Europeans captured Te Reo in a written form; how Maori came here and how the place names are a form of shorthand that tell of people and events back to the earliest days of the great Waka.

The book goes on to chronicle a post-colonial history in which so many people made a difference in a variety of ways. And every story from every age is a strand in the weave of the doings of the people great and small, who together wrote the story of this place. The people of the Whau.

To our eternal shame, this part of Aotearoa, which is abundant in so many things and not least its natural beauty, was despoiled and polluted by the industries that grew and prospered precisely because the Whau is benign and rich in resources. To our credit, the Whau – the river and the place - is now being reclaimed and restored to what it once was and must now again, forever be; a place of beauty, a place for people and for nature to live in harmony and a playground. This extensive book then places these people in the context of the nature, the plants, the birds, and the marine life that was once so abundant before bringing us to the present and the selfless work of so many local organisations and people who are now committed to restoring the Whau to its former glory. People and organisations like the Friends of the Whau, The Whau River Catchment Trust, the Te Whau Coastal Walkway Environment Trust, funding agencies – and yes, government and local Government. It is a shared journey just as it has always been. A story of people and the place they live in. A story full of drama, and these days, a story of hope for future generations.

Ross Clow and Iris Donoghue

Introduction

New Zealanders are great travelers. We are also great lovers of history. We are great at making plans to travel to far off lands to discover facts of the ancient ruins of Greece or of the long-lost cities of the Incas. But by stepping aboard that flight or that ship, we are stepping away from our own unique history – much of it still untold. Perhaps it is the belief that New Zealand is such a young nation that we imagine there is no history yet to discover. But that would be an incorrect assumption. History is not only the study of a long past event of a particular period, country, or subject. History can also be found at a more familiar and contemporary level. For history is the discovery of stories about people and their relationships with each other and with their environment. Stories can be gathered from yesteryear to yesterday, stimulating discussion, memories, and imaginations. Most of all, stories form a comprehensive timeline of cultural knowledge for current and future generations to enjoy and pass on. The aim of this book therefore is to rediscover, reimagine and rejuvenate the Whau River. There are many stories of its life and times and of the people who have lived, played or worked alongside it – and they are eagerly waiting to be told. This book hopes to capture (and in some instances – recapture) some of those stories and allow them to take their rightful place in the annals of New Zealand history.

Te Whau is the Maori name given to the estuarial arm of the southwestern Waitemata Harbour. It flows north for 5.7 kilometres from its source at the joining of the Avondale Stream and Whau Stream to its mouth between Te Atatu Peninsula and Rosedale Peninsula in Avondale.[1] It is 400 metres wide at its mouth and it stretches to 800 metres at its widest. Much of the inner estuary consists of a single channel, flanked by mud flats and mangrove forest. The estuary extends past the suburbs of Glendene and Kelston, between Auckland City to the east and the (former) Waitakere City to the west.[2] It has three relatively large tributaries - Rewarewa, Wairau and Glendene, and four minor tributaries which drain into the western shore of the Whau Estuary. The tide flows up the Wairau Creek as far as Sabulite Road in Kelston, and up the Rewarewa Creek to Clark Street and Wolverton Road in New Lynn.[3] The area at the mouth of the estuary is legally protected as the Motu Manawa (Pollen Island) Marine Reserve.[4] The reserve contains mangroves, saltmarsh, shellbanks, intertidal mud flats and sandflats that are utilised by a variety of New Zealand and migratory

[1] Jo Mackey, *The Whau: Our Streams, Our River, Our Backyards* (Waitakere City Council and Auckland City Council booklet, 2002).

[2] Until 2010, the Auckland Region had seven "City/District" authorities, (Auckland City Council, Manukau City Council, Waitakere City Council, North Shore City Council, Papakura District Council, Rodney District Council and most of Franklin District Council). In the late 2000s, New Zealand's central government and parts of Auckland's society felt that this large number of Councils, and the lack of strong regional government (with the Auckland Regional Council only having limited powers) were hindering Auckland's progress, and that a form of stronger regional government, or an amalgamation under one local council, would be beneficial – hence Auckland becoming a "Super City."

[3] Jo Mackey, *The Whau: Our Streams, Our River, Our Backyards* (Waitakere City Council and Auckland City Council booklet, 2002).

[4] Ibid.

wading and non-wading bird species. Te Whau is also part of the wider area known as “Te Wao nui o Tiriwa”, (the great forest of Tiriwa) – the ancient Maori name for West Auckland and surrounding districts.

This book hopes to offer more than merely tracing the outline of the Whau River’s rich past, present and future. The intention is to ‘colour between the lines’ and ultimately bring it fully back to life. Many devoted people are currently working toward achieving that vibrancy in reality. The Te Whau Pathway project is an exceptional example of this dedication. This often neglected taonga has not lost its beauty but it has been veiled behind years of disregard, pollution and misuse. It is time now for that veil to be lifted and for the Whau River to be celebrated as a picturesque place of choice to walk, row, cycle, swim, fish and to meet new friends and neighbours – all the way from Green Bay to Te Atatu Peninsula!

The Whau River Catchment

Source: The Whau River Catchment Trust at http://www.whauriver.org.nz/.

Chapter One

The Pronunciation and Naming of Te Whau

The waterway has been known by several names over the past several hundred years, often leaving visitors and residents alike scratching their heads in confusion - initiating drawn-out debates over the 'correct' name and pronunciation! Even today the river suffers from an involuntary schizophrenic disposition. Is it the Wao, the Wahu, the Whao or the Whau? Perhaps some clarity can be found by offering a summary on the evolution of Maori language.

The problems with "wh" in Maori written language

With an absence of written language, early European colonists found it immensely difficult to reduce Maori speech to alphabetic form.[5] For example, the village of *Kerikeri* was heard and translated as *Kiddeekiddee* and *Hokianga* was written as *Showkianga, Sukyanna, Jokeeangar* and *Chokahanga.*[6] Thomas Kendall, the first resident missionary was the first to attempt the difficult task of establishing Maori orthography.[7] His first rough list was revised in 1815 and sent off to Samuel Lee, Professor of Arabic at Cambridge. In 1820, Kendall and two Maori chiefs, Hongi and Waikato, joined Professor Lee, and together they produced *A grammar and vocabulary of the language of New Zealand.*[8] At that time, although the letters *c, q* and *x* were dropped, the *Grammar* still included letters for non-Maori sounds thought necessary for foreign words – *f,* hard *g, j, v,* and *z.* Kendall twice tried to have a revised edition of the Grammar published in order to adopt the "wh" digraph, in addition to "ng".[9] However, Samuel Marsden, another early missionary, was not so keen and blocked him at every turn.[10] By 1830, the alphabet was reduced to five vowels and nine consonants, with only two forms remaining unsettled, *h* and *w.*[11] Attempts were made to indicate a palatal *h* by adding an apostrophe (as in H'ongi) and the voiced *w* (pronounced rather like *f*), again by an apostrophe or by the combination *wh.*[12] William Colenso, as printer, argued for the doubling of long vowels (to avoid special sorts), the simple *h* (to avoid the Greek-style

[5] David Finkelstein and Alistair McCleery (eds), *The Book History Reader,* (Routledge, London, 2002), p 192.
[6] Ibid.
[7] Ibid.
[8] Ibid.
[9] *Story: Kendall, Thomas,* Te Ara, The Encyclopedia of New Zealand at http://www.teara.govt.nz/en/biographies/1k9/kendall-thomas.
[10] Ibid.
[11] I David Finkelstein and Alistair McCleery (eds), *The Book History Reader,* (Routledge, London, 2002), p 192.
[12] Ibid.

apostrophe), and a digammic *v* for *wh* (to avoid setting two letters where one would do). However, by 1842, *wh* had won over and was confirmed.[13]

It is interesting to note that a 1923 issue of *The New Zealand Herald* affirmed the adoption of *wh* in Whau– although the article did not yield an actual date. The article stated: *"The spelling "Whau" was not adopted until a conference of missionary linguists agreed to use "wh" instead of "w" to represent the aspirated "w" in Maori. There is no "wh" in the Treaty of Waitangi and other early documents and books."*[14]

Notwithstanding the confirmation of the use of the "*wh"* spelling in 1842, there was still wide use of 'Wao' and 'Wahu' up until the mid-1860's - as excerpts from newspaper clippings below indicate.

1847 – "… and an aqueduct from the **Wahu river** to the top of Mount Eden is already spoken of."[15]
1848 – "… six hundred acres of land situated at the **Wahu Creek…**[16]
1851 – "… the Town and Suburbs to Hobson's Bridge and **Whau**…"[17]
1851 – "The evidence was limited to that of the Native who found the body at the **Wahu Creek**…"[18]
1851 – "The northern boundary runs from the eastern head of the **Wao Creek**…"*. The Western boundary runs along the middle of the **Wao portage** road …"*[19]
1853 – "… respective tidal levels of the Waitemata and the Manukau, at the **Whau**, have been accurately determined."[20]
1853 - "… road to the **Wao** be taken by way of the Cemetery and Cabbage Tree road, … and there to join the Karangahape Road to **Wao portage** … ."[21]
1854 – "…to the Road on the next range leading to the **Whau Portage**…"[22]
1855 – "An Excellent Farm, containing 110 acres, fronting the **Wahu Creek**, and adjoining the proposed Canal…"[23]
1859 – "… on the West by the **Wahu Portage** and **Wahu Creek."**[24]
1860 – "…and on to the **Whau Bridge**…"[25]
1863 – "… on the West by the **Wahu Portage** and **Wahu Creek**."[26]
1863 – "…a gradual fall can be followed all the way to the **Whau Bridge**…"[27]
1865 – "… for trespass in Mr. Crispe's oat paddock, at the **Wahu** flat…"[28]

After 1865, 'Whau' was the most widely written and accepted variant.

[13] Ibid.
[14] *The New Zealand Herald,* Tuesday, November 13, 1923, p 17.
[15] *Daily Southern Cross,* 21 August, 1847.
[16] *The New-Zealander,* 29 March, 1848.
[17] *The New-Zealander,* 8 March, 1851.
[18] *The New-Zealander,* 25 October, 1851.
[19] *The New Zealander,* September 6, 1951.
[20] *Daily Southern Cross,* 22 March, 1853.
[21] *The New-Zealander,* Saturday, November 12, 1853.
[22] *The New-Zealander,* January 14, 1854.
[23] *The Daily Southern Cross,* June 22, 1855.
[24] *The New-Zealander,* December 7, 1859.
[25] *The New-Zealander,* January 7, 1860.
[26] *Daily Southern Cross,* November 23, 1863.
[27] *The New-Zealander,* June 19, 1863.
[28] *Daily Southern Cross,* June 14, 1865.

Pronunciation of "Whau"

"Letters to the Editor" in early New Zealand newspapers illustrate the publics overall confusion over the correct way to pronounce "wh" for Maori words in general. Two such letters from the early 1900s highlight this difficulty.

THE SPELLING AND MEANING OF MAORI NAMES[29]

> We have received several questions as to the spelling and meaning of Maori names. ... We have consulted Mr T. H. Smith, whose supreme authority on the subject no Maori scholar will question. … A correspondent asks: Do the letters "wh" as in Kawhia invariably sound "f?" And do these letters have the same sound when commencing a word as when in the middle; for instance, take the words Whangamomona and Puniwhakau? In answer to these questions Mr Smith wrote: The letters "wh" in the name Kawhia are not properly sounded as "f," such pronunciation is either careless or affected; the "wh" sounds the same wherever it occurs.

(TO THE EDITOR)[30]

> Sir. – Last night's letter from "Tenarakakoe Pakeha" somewhat upsets my idea of the pronunciation of "wh." It is most noticeable that the natives of this district sound it as "f." For instance, "wha," as in "four;" thus "He whare kowhatu," a stone house. Bishop Williams explains that "wh" is not, as it is written, a compound of "w" and "h," but a simple consonant, the effect of breath emitted smartly between the lips. The same sound, in short, as is made in blowing from the mouth. In Tregear's dictionary, introductory, page 23, "wh" is given as an interchange with "f" in the Samoan, Tahitian, and Tongan languages. – I am, etc.,
>
> **NGAHAU**

According to author Reweti T Kohere, who wrote *The Story of a Maori Chief* in 1949*,* the sound 'wh' should be sounded as in 'when', never as 'f'.[31] He stated that to sound 'wh' like 'f' is certainly degenerate Maori."[32] As if this is not confusing enough*, An Encyclopaedia of New Zealand,* written in 1966[33] stated:

> *There is some difference of opinion in respect to the correct pronunciation of the 'wh' sound. It is not a compound of 'w' and 'h', but represents the single voiceless consonant corresponding with 'w' and is pronounced by emitting the breath sharply between the lips. Most tribes in New Zealand today assimilate the sound to that of 'f' in English. From the phonetic spelling that was adopted by the early missionaries and settlers it would appear, however, that the use of the sound 'f' for 'wh' is a comparatively recent innovation. This is the view supported by Buck who contends that the use of the English 'f' sound for 'wh', such as fafai for whawhai (to fight), is a post-European development adopted by some tribes. The student should practice the sound by pronouncing the 'wh' as in the English word "when", it is pronounced without letting the teeth touch the lower lip.*

---

[29] *The New Zealand Herald,* December 30, 1901, p 5.
[30] *The Manawatu Evening Standard,* Friday, September 6, 1912.
[31] Reweti T Kohere, *The Story of a Maori Chief* (Reed Publishing (NZ) Ltd, Wellington, 1949).
[32] Ibid.
[33] Maori Language: Vowels and Digraphs, *An Encyclopaedia of New Zealand,* A H McLintock (ed) 1966. http://www.teara.govt.nz/en/1966.

Final words on the matter might be procured from a Marsden Research Funded project from 2005, in which the authors of *"The pronunciation of Maori: What have we done to it in the last 100 years?* wrote:[34]

> *In the words of the proverb: 'The land remains, but humankind vanishes.' One should perhaps extend this to read: 'The land remains, humankind vanishes, and language changes.' For languages are old, handed down from one generation to another, but no matter what, they change. Present-day English is not Shakespeare's or Chaucer's language. The pronunciation has changed, new words have entered the language, some words have been lost, the grammar is now different. Maori is like that as well.*

The Naming of the Whau

With some clarification (although not definitive) now proffered on the spelling and pronunciation of the river, the next question must surely be - why was the river named the Whau? The most accepted notion is that the river was named after the Whau tree (*Entelea arborescens*). It has also been widely understood that Mount Eden also got its name from the Whau tree – *Maunga Whau* (meaning mountain of the Whau tree).[35]

When the East Polynesian discoverers reached New Zealand there was such a cornucopia of floral diversity, much of which had never been seen before.[36] These new peoples of New Zealand, well used to giving names to all plants and trees they came across, now found new species that were without names.[37] It is supposed that new plants were assigned the name of a plant already in existence that had a particular similarity or commonality to the new plant, therefore giving new meaning.[38] The *Whau* tree may be explained in this way.[39] Throughout Polynesia the Beach Hibiscus (*Hibiscus tiliaceus)* is known by a reflex of Proto-Polynesian *fau.*[40] The soft and very light wood is often used for canoe outriggers and the bark is used everywhere for tying and binding. In New Zealand, species of several genera have names which are reflexes of *fau*, the names having been chosen seemingly because of an attribute shared with the Polynesian tree.[41] The *Whau "Entelea arborescens"* is a prime example of this commonality as it is known to have the lightest wood of any New Zealand tree. A dialectal variant *whau-ama* means "outrigger *whau*".[42] In some dialects, the vowel *a*

---

[34] Ray Harlow, Peter Keegan, Jeanette King, Margaret Maclagan, Catherine Watson. *Te whakahuatanga I te reo Maori: Kua ahatia e tatou I roto I nga tau 100 kua hipa nei? (The pronunciation of Maori: What have we done to it in the last 100 years?)* in He Puna Korero: Journal of Maori and Pacific Development, Volume 6, Issue 1, February 2005.

[35] *Supplement to the New Zealand Herald,* Saturday, October 1, 1892; *The New Zealand Herald,* Saturday, February 19, 1921; *The New Zealand Herald,* Monday, March 31, 1924; *The New Zealand Herald,* Friday, October 7, 1927.

[36] Bruce Biggs, "A Linguist Revisits the New Zealand Bush" in Andrew Pawley (ed) *Man and a Half. Essays in Pacific Anthropology and Ethnobiology in Honour of Ralph Bulmer.* Auckland: Polynesian Society, 1991, p 67-72.

[37] Ibid.

[38] Ibid.

[39] Ibid.

[40] Ibid.

[41] Ibid.

[42] Ibid.

has become *o* by assimilation to the following *u*, *and as wh* may not precede a round vowel it has become *h.* So, we get *hou-ama* and *hou-here* "Lacebark" (*Hoheria* spp). The latter means "the tying *fau"* as the bark is suitable for that purpose.[43] The *whau-paku "Panax arboretum",* or little *whau,* does not resemble the Beach Hibiscus in general form, but shares with it soft wood and a central core of pith.[44]

In 1912, H. W. Williams, M.A., Archdeacon of Waiapu, in his *A Plea for the Scientific Study of Maori Names,* wrote:[45]


Native Wild Flowers

SPRING--V.

WHAU (Entelea arborescens).

A NEW ZEALAND ARISTOCRAT

(By L. M. CRANWELL.)

Few native plants are more ornamental or more interesting botanically than the whau. It is typically a coastal plant, commonest in frost-free areas north of Raglan and East Cape, and it was at Anaura, in the East Cape district, that Captain Cook's party first collected it and recorded its Maori uses.

The names applied to the local flora and fauna afford illustrations of the methods adopted by the Maori in fixing his nomenclature. It is not surprising to find many instances of words generic in their scope which the Maori uses in common with other Polynesian dialects. But numerous examples might be given where specific names with a range over a large part of Polynesia are still current in New Zealand. It will be found that the Maori colonist acted very much as later European ones have done, and applied names generally to similar or allied plants or birds, but was not tied by any strict rules, and so occasionally transferred the name to something widely different from that to which it had been applied in the past. … The hibiscus (*fau* or *hau* in the Pacific) supplied the name *whau* for the *Entelea arborescens.*

The Whau tree, as illustrated above[46], would once have grown in abundance on the banks and flat areas of land next to the Whau River – hence the assumed origin of the river's name.

Mr L M Cranwell, wrote in his 1933 article that *"few native plants are more ornamental or more interesting than the Whau."*[47] It is typically a coastal plant, commonest in frost-free areas north of Raglan and East Cape district. Captain Cook's party, in 1769 were the first to collect samples from the East Cape area and recorded its Maori uses.[48] Cook's botanists realised that it belonged to the lime or linden family, but it was not until 30 years later that

[43] Ibid.
[44] Ibid.
[45] Transactions and Proceedings of the Royal Society of New Zealand 1868-1961, Volume 45, 1912, ART. XLVII. – *A Plea for the Scientific Study of Maori Names,* by H. W. Williams, M.A., Archdeacon of Waiapu.
[46] *The Auckland Star,* Saturday, October 7, 1933.
[47] Ibid.
[48] Ibid.

Robert Brown gave it its present name of *Entelea arborescens*. This genus contains only one species – the Whau, which is only found in New Zealand.[49]

Cranwell described the wood as extremely light, and though slightly heavier than balsa, (which is held to be the lightest wood in the world) it is, when dry, only half the weight of cork.[50] The tree's light wood was soon discovered by Maori fishermen, who shaped rough floats from cross sections of the stem. The spongy pith could be pierced very easily, and the whole, very much like a large doughnut in appearance, was then attached to the fishing net. As some of these nets were wide and built to stand great strains, efficient buoys were necessary.[51] Additionally, whole branches were stripped of their mulberry-like leaves and lashed together to form light rafts suitable for short voyages - although the wood very quickly became waterlogged.[52]

Although the Whau grows readily from both seeds and from cuttings, sightings of the once common plant began to diminish in the earlier half of the twentieth century. In a *Supplement to the New Zealand Herald* of November 1925, Mr K Wilson wrote: *If you need an excuse for a good ramble, go search for the Whau, growing scarcer each year because the cattle eat it. I have found it flowering in September near the source of the Whau River below Titirangi Hill. It is fairly plentiful at Muriwai. Clusters of pretty creamy blossoms grow at the end of the branches. It has broad green leaves.*[53] Cranwell also noted in 1933 that it was becoming scarce in its native haunts due to animals such as cows, who found it very tasty. Cranwell suggests this is because of its clear mucilage that streams through its tender wood.[54] *"Wherever cattle roam, the Whau is doomed. Seedlings are trampled down and the old trees are torn to pieces,"* he declared.[55] *"Where they cannot reach, the plants begin to bloom in all their beauty in October."*[56]Cranwell described the Whau flower as: "consisting of four or five pale green sepals, each tipped with black and covered with soft hairs on their undersides. The larger white petals have delicately crinkled margins and are flushed with yellow at the base. Next comes a bright ring of yellow stamens, producing a halo effect around the pistil. This has a tinged stigma at the top and a hairy ovary which later develops into a large brown, shiny seed capsule." He expressed that though the Whau could grow in dry places, it thrives best on river silt, and it does like to have its feet in the water sometimes![57]

[49] Ibid.
[50] Ibid.
[51] Ibid.
[52] Ibid.
[53] *Supplement to the New Zealand Herald,* Saturday, November 28, 1925.
[54] *The Auckland Star,* Saturday, October 7, 1933.
[55] Ibid.
[56] Ibid.
[57] Ibid.

The People

Chapter Two

Iwi of Te Whau

Painting the Historic Scene

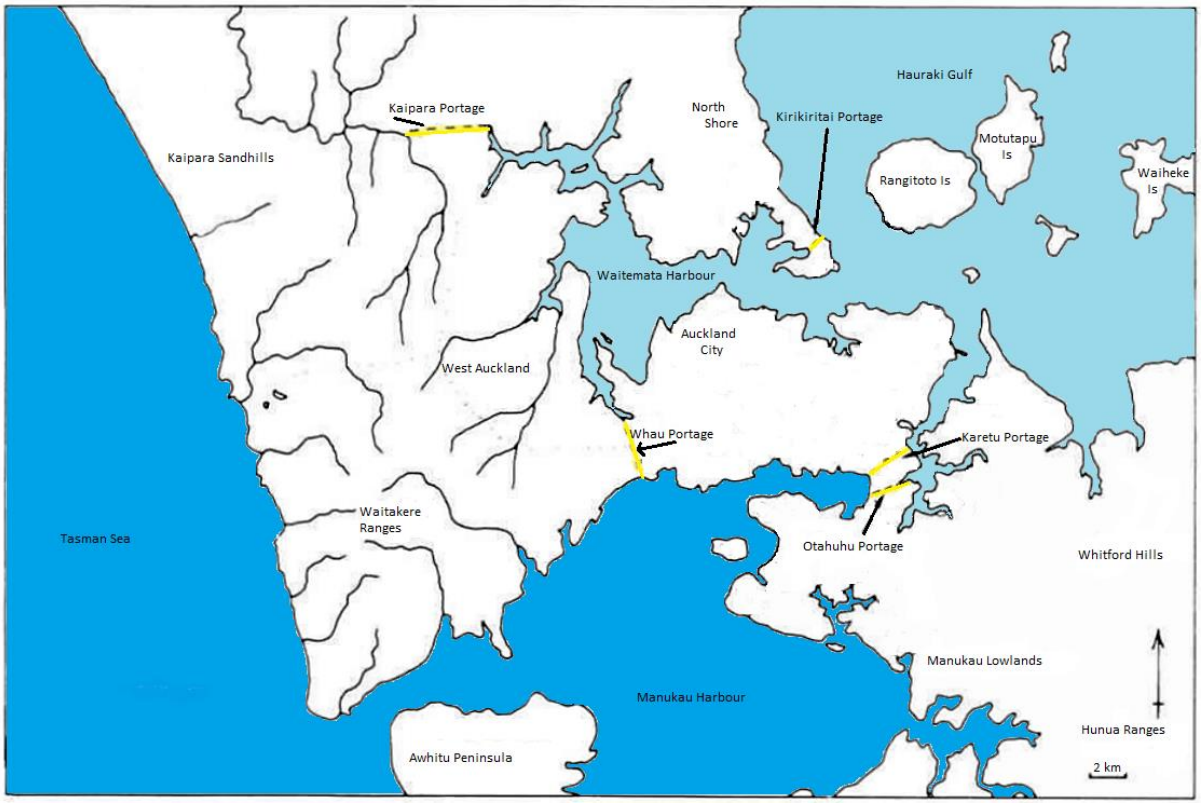
It is difficult to imagine the Whau River and its catchment area in a time before its current encrustation of residential, commercial and industrial development. And yet, in earlier times, the Whau area, along with the rest of the Tamaki isthmus was covered in mature, mixed, subtropical forest bordered by harbours rich in marine life. Both the Waitemata and the Manukau harbours were abundant in seafood (moana kai) with their good fishing grounds and well-stocked beds of shellfish. The Manukau Harbour had plentiful supplies of snapper, stingray, flounder and shark, with varied shellfish at the fluctuating tide levels. The Waitemata Harbour had an equally abundant supply of seafood, with an even more diverse array of fish.[58] As well as Tamaki's magnificent sheltered harbours, it possessed rich volcanic soils, easy waka (canoe) access, and portage routes. These glowing attributes made the area a highly desirable location for settlement – hence the name Tamaki-makau-rau, often translated as 'the land desired by many' or 'the land of a hundred lovers.'

Early settlements were established near shorelines and major rivers and were occupied either long-term, seasonally, or temporarily, according to the availability of food resources.[59] Satellite fishing and gardening camps were usually set up away from permanent settlements during the summer months and food would be preserved and then taken back to the kaianga (village) for use during the winter.[60] The diet of the earliest inhabitants would have consisted of berries (like hinau, tawa, karaka, taraire, miro and patangatanga), fern-roots and other tree foods, along with a variety of birdlife.[61] However, with an increasing populace being drawn to the highly prized Tamaki isthmus, the lush forests were soon cleared of larger trees, leaving only remnants of bush in steep gullies. These larger trees did not regenerate, leaving bracken fern, tupakihi (tutu) and manuka (tea-tree) to grow brazenly in their place. Fires, intentional and unintentional, along with the timber and fuel requirements of Tamaki's inhabitants, meant that mature bush, once felled, was rarely able

[58] C J Stone *from Tamaki-Makau-Rau to Auckland* (Auckland University Press, Auckland, 2001) p 3.
[59] Jennifer Lowe, Sarah McCready and Rod Clough "Te Whau Coastal Pathway, Olympic Park (New Lynn) to Orangihina (Te Atatu): Preliminary Archaeological Assessment, Report prepared for Auckland Council, November, 15, 2015, p4.
[60] Ibid.
[61] C J Stone *from Tamaki-Makau-Rau to Auckland* (Auckland University Press, Auckland, 2001) p 3.

to re-establish itself.[62] As early as AD1400 bird species were severely depleted and sea food thus became the bulk provider of protein in the local diet.[63]

The Tamaki isthmus not only provided early inhabitants with a variety of foods – it also provided an invaluable transport system to cross from the east to the west coasts. The Whau River was a primary communication route, leading to an important portage route between the Waitemata and Manukau harbours. Midden sites located along the river's edges suggest transient Maori occupation along its banks.[64] A series of midden sites found along the banks of the Whau are filled with cockle and pipi shells, and some also contain mud snails, cat's eyes, mud oysters and scallops.[65] Lowe, McCready and Clough note that further midden sites may have existed along the Whau River; however, later reclamation along the eastern banks in the 1960s may have disturbed, covered, or destroyed them.[66]



Map: Auckland metropolitan area showing several prehistoric canoe portages. Map supplied by author.

Seasonal camps were set up near the Whau to hunt for the kuaka or godwit. Flocks of kuaka would move from the Waitemata to the Manukau harbour on the changing tides to feed,

[62] Ibid.
[63] Ibid.
[64] Jennifer Lowe, Sarah McCready and Rod Clough "Te Whau Coastal Pathway, Olympic Park (New Lynn) to Orangihina (Te Atatu): Preliminary Archaeological Assessment, Report prepared for Auckland Council, November, 15, 2015, p4.
[65] B. W. Hayward and J. T. Diamond, Prehistoric Archaeological Sites of the Waitakere Ranges and West Auckland, New Zealand, Auckland Regional Authority, 1978.
[66] Jennifer Lowe, Sarah McCready and Rod Clough "Te Whau Coastal Pathway, Olympic Park (New Lynn) to Orangihina (Te Atatu): Preliminary Archaeological Assessment, Report prepared for Auckland Council, November, 15, 2015, p4.

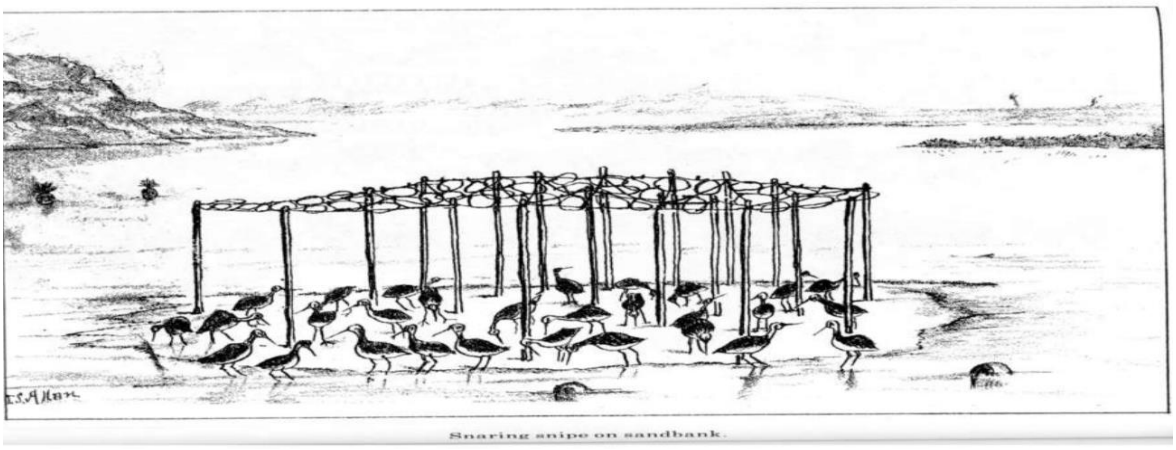
falling prey to Maori who knocked them out of the sky with long poles as they passed overhead.

> *"The narrow neck between the head of the Whau creek on the north, and the Manukau Harbour on the south was where the Nga-ti-whatua killed the bird kuaka (a seashore bird not unlike the snipe). These were killed in the foggy mornings of the autumn. The people sat on the ridge of the hill with sticks in their hands, these sticks were about twelve feet long with the strong branches topped off and left about a foot long on the stick, and as the kuaka flew up from the sea of Manuka (sorrow) and were going over to the tide of Wai-te-mata, but as the bird got to the ridge of the hill, the people struck them with the sticks, and as the birds could not see the people*

> *through the fog, thousands of birds were killed in those days."*[67]

Figure 1 ***Killing godwits or kuaka as they flew over the saddle at the Green Bay end of the Whau portage.***
from *J. White, The Ancient History of the Maori, 6 Volumes (Government Printer: Wellington), 1887-1891.*

> *"Coastal birds that came in large flocks to feed on the intertidal harbour flats were also hunted. The chief among these was the kuaka (godwit), which was caught during March and April. Nooses made of cabbage tree leaves were strung across the feeding grounds at the mouth of the Whau, and at night the birds were frightened by torch-bearing Maoris that made them take off and get caught in the nooses above. At other times, Maoris would wait on the Whau saddle above Green Bay and club the low-flying kuaka to death as they flew in a flock between the Manukau and Waitemata Harbours with the changing tides.*[68]



[67] John White, *The Ancient History of the Maori, His Mythology and Traditions. Nga-Puhi [Vol. XI],* Chapter IV, "History of the Wars in the Auckland District by Nga-Ti-Whatua Tribe" (manuscripts from 1887-1890.). New Zealand Electronic Text Collection (Te Puhikotuhi o Aotearoa). Sourced online at http://nzetc.victoria.ac.nz//tm/scholarly/tei-Whi11Anci-t1-body-d4.html.
[68] B. W. Hayward and J. T. Diamond, Prehistoric Archaeological Sites of the Waitakere Ranges and West Auckland, New Zealand, Auckland Regional Authority, 1978.

A novel, "Revenge: A Love Tale of the Mount Eden Tribe" written by John White in the late 1880's, (but not published until well after his death) describes the way in which the birds would have been caught. An excerpt is printed below:[69]

> *At sunset all the ropes and nooses were ready, and Koma and Popo went with the men to the place where the poles had been erected. They did not take long to get to the Whau creek. The tide was about half in, and at once they began to tie the ropes from pole to pole with the nooses dangling from them, till the whole area was one roof of nooses. When they were all in place, Koma went to inspect them, and in some places he got the men to put in still more of the nooses. These nooses were about the height of a man from the ground.*
>
> *Along the south side of this area and about two hundred fathoms away was a long line of rushes. Koma ordered each man to take a torch and hide amongst the rushes. On the bank of the creek a house had been built, in which a fire was kept going, so that they could light their torches when the time came.*
>
> *It was now very dark, and the chattering of the kuaka could be heard as they were driven up by the tide to the bank where the nooses were placed. Nearer and nearer they came. When the water touched the rushes where the men were concealed, Tipa, who had caught the kaka kura for Popo, rose from where he had been concealed and went into the house. Koma told him to get the men to light their torches. The men, who were nude save for an apron of brushwood tied round their waists, came and lit their torches from the fire. Then, at a signal from Tipa, they all rushed out, and with a loud noise ran to the place where the kuaka were, right under the nooses. The men waved their torches as they ran, and the startled birds rose straight up from where they were sitting and became entangled in the nooses. The men stuck the torches in the sand, and began at once to take the birds out of the nooses and kill them and put them in baskets. This did not take long, as fifty men were busily employed. When all the birds had been taken, they were carried to the house where the torches had been kindled, and there the first bird that had been taken was given to Koma. He split a stick and put the neck of the bird into the cleft. Then he put the end of the stick in the ground and left the bird in front of the house as an offering to the gods."*

The Whau portage is still a favourite feeding ground of the kuaka, who take advantage of the three-hour tidal difference between the two harbours to maximize their feeding opportunities on the exposed mudflats.[70] Throughout the month of February the birds gorge themselves as they build their fat reserves before their long journey to Alaska to breed.[71] In March the birds set off first to the Yellow Sea and then onwards to their destination. The Whau catchment is one of the best places in NZ to watch these birds' movements particularly as they fly over in their V shaped skeins.[72]

[69] White, John "Revenge: A Love Tale of the Mount Eden Tribe" (Wellington, Reed Publishing (NZ), 1940).
[70] *Friends of the Whau,* ENews, March 2016. Sourced online at www.whauriver.org.nz.
[71] Ibid.
[72] Ibid.

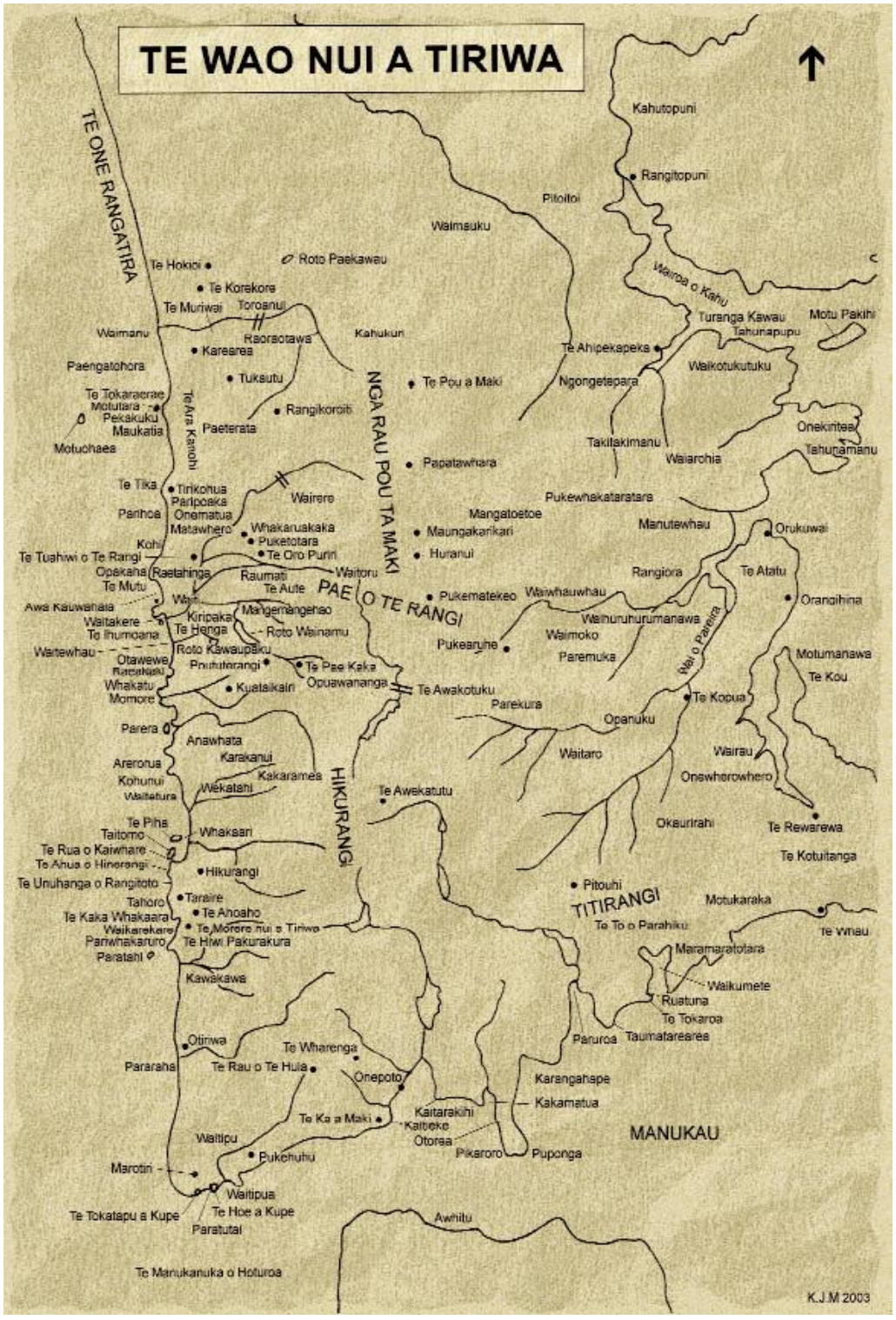
Iwi Narratives

Each tribal entity of Aotearoa treasures and nurtures its own historic account of the intimate relationship between its people and the land. But no one account prevails over another. The Whau River is celebrated by many tribal entities, although Te Kawerau a Maki and Ngāti Whātua o Ōrākei provide considerable input into contemporary Whau environmental issues. Although their narratives may not be the same, both iwi share strong links with the Whau and as such their chronicles are fundamentally important when recounting the river's history. The 2009 book *West: The History of Waitakere*[73] gives excellent accounts from authoritative representatives of both iwi. Therefore, to preserve consistency and authenticity of the respective histories, this chapter does not deviate from the above-mentioned resource. Te Warena Taua contributed a Whakapapa (genealogy) account for Te Kawerau a Maki and Malcolm Paterson presented an account for Ngāti Whātua o Ōrākei. These accounts are summarised below.

Te Kawerau a Maki

Taua states that in the traditions of Te Kawerau a Maki, the first inhabitants of the land were the Turehu people. However, they are not seen as ancestors who arrived here by waka, as they literally 'arose from the earth'. They were already in occupation of the land when later ancestors arrived centuries after. Some traditions go even further back to Te Ao Kohatu, the age of stone. Taua states this was a time when inanimate objects possessed human qualities, when rocks and mountains moved around the landscape.[74] It was after the emergence of Te Ao Marama, or the age of light, that the landscape was occupied and changed by the Turehu, and by the more secretive forest-dwelling Patupaiarehe (also known as Tahurangi, Tutumaiao and Ngaurukehu by Te Kawerau a Maki). They are remembered in the naming of the Waitahurangi stream which flows from the Titirangi ridge to the head of the Whau River at New Lynn.[75] The Turehu chieftain, Tiriwa, is the most famous of the early ancestors and it is from him that Te Kawerau a Maki's traditional collective name for the Waitakere area derives– Te Wao nui a Tiriwa. Tiriwa was credited with incredible exploits such as walking across the land in great strides and being able to change the landscape. Taua affirms that in one Te Kawerau a Maki tradition known as Te Unuhanga o Rangitoto, Tiriwa shifted Rangitoto Island from Mercer Bay at Karekare to its present position at the entrance to the Waitemata Harbour. Tiriwa continues to be remembered by Te Kawerau a Maki in tradition, carving and song.[76]

[73] F MacDonald and R Kerr (eds) *West: The History of Waitakere* (Random House, Auckland, 2009) pp23-62.
[74] Te Warena Taua, 'He kohikohinga korero mo Hikurangi,' in F MacDonald and R Kerr (eds), *West: The History of Waitakere* (Random House, Auckland, 2009) p26.
[75] Ibid.
[76] Ibid.



Maori place names of the Waitakere Ranges (Te Wao Nui a Tiriwa, the great forest of Tiriwa), 2003. Map supplied with kind permission by Graeme and Kate Murdoch.

Te Kawerau a Maki also descend from the many early tribal groups who migrated into the area such as the Tini o Maruiwi. They migrated from Taranaki into the Auckland region and some settled in the Waitakere Ranges. There they conquered and absorbed the Turehu. This

early tradition is known as Te Awe ka tutu, and place names such as Nihotupu, Rourouhue, Waiopare, Parekura and Opanuku (Henderson Valley) relate back to these early ancestors.[77]

The famous Maori ancestor and navigator Kupe mai tawhiti also visited the Waitakere coastline, according to Te Kawerau tradition. Taua states Kupe's visit to Whatipu is remembered in the place-names Te Hoe a Kupe and Te Toka tapu a Kupe (the Ninepin).[78] Whakatu (the bay just south of Te Henga) derived its name from Kupe, as did the name for the ocean off the Waitakere coastline (Nga tai whakatu a Kupe), meaning the upraised seas of Kupe. Another famous ancestor who visited the Waitakere district from this early time was Toitehuatahi. He ventured into the Upper Waitemata Harbour in his waka Paepae ki Rarotonga. Some of his people settled there, including his niece Pareira. Henderson Creek (Wai o pareira) and Upper Henderson Valley (Opareira) obtained their names from Pareira.[79]

As do all iwi of Aotearoa, Te Kawerau a Maki claim descent from a number of ancestral waka that voyaged here from Hawaiki (the Pacific homeland). The Moekakara canoe, commanded by Tahuhunui is one example.[80] It originally landed at Wakatuwhenua (Goat Island Marine Reserve, Leigh) but some of its crew and their descendants migrated overland to the Waitakere River catchment area where they settled. Their occupation of the land is remembered in place-names north of Te Henga (Bethell's Beach) like Tuwhenua and Pu o Tahinga.[81]

Descent can also be claimed from five other ancestral waka; predominantly from the famous Tainui canoe which arrived in the Auckland region in the mid-fourteenth century. The Tainui paddled through the Hauraki Gulf and then portaged over the narrow isthmus at Otahuhu to the Manukau Harbour. Puketutu Island (Te Motu o Hiaroa became the Tainui people's initial home and they spent much time exploring the surrounding area.[82] Taua states the famous tohunga or spiritual leader Rakataura (also known as Hape) named many places on the Tamaki isthmus, including Titirangi, Hikurangi, Waiokahu (Piha Stream), Tirikohua and Te One Rangatira (Muriwai Beach). Manukau Harbour also became known as Nga Tai a Rakataura – the tidal currents of Rakataura.[83]

Some of the crew of the Tainui settled permanently in the district, including in the Waitakere area, and were linked by marriage to the earlier local people. Over time, their descendants acquired their own tribal names like Ngati Taihaua, Ngati Poutukeka and Ngai Riukiuta, while retaining the original collective tribal name of the Tainui people – Ngaoho.[84] Within West Auckland they were also known as Nga oho mata kamokamo, named after Oho

[77] Ibid, p27.
[78] Ibid, p29.
[79] Ibid.
[80] Ibid.
[81] Ibid.
[82] Ibid.
[83] Ibid, p30.
[84] Ibid.

Matakamokamo, a great grandson of Rakataura.[85] These ancestors were often referred to as Ngaoho moko koha because of their distinctive method of tattooing.[86]

Te Kawerau a Maki's Ngaoho ancestors occupied the wider Auckland region (including West Auckland) in peace for several centuries.[87] Taua writes that due to the pressure on resources and arguments over cultivations, another Ngati Awa group migrated to the Auckland region from Kawhia in the mid-1600s.[88] This migration was led by Maki, also known as Makinui, and his younger brother Matahu. Maki was accompanied by two of his wives, Rotu and Paretutanganui, their three children Manuhiri, Ngawhetu and Maraeariki, and 300 followers. They settled temporarily near the Waikato River mouth, and then at Manurewa.[89] Although Maki and his people were related to the wider Ngati Awa iwi, they also belonged to the sub-tribe Ngaiwi (the great grandfather of Maki). Some of the Ngaiwi people led by Haumia and Pohatu, the grandfather and great uncle of Maki respectively, had settled earlier in the Tamaki district.[90]

Maki, being a prominent rangatira and warrior soon became involved in Ngaoho disputes. The evolution of Te Kawerau a Maki and the wider Te Kawerau tribal grouping in the Auckland region occurred at this time. In one significant tradition Maki was asked to avenge the death of a chiefly child from Takapuna by attacking Te Whauwhau who lived at Rarotonga (Mt Smart). Te Whauwhau and his people were defeated in a battle known as Te Waewaekotuku. After the battle, Maki took the land and called it Tamaki (also known as Te Ipu kura a Maki).[91]

Maki also visited places that were associated with his ancestors Titahi and Ruarangi in the southern Kaipara area between Muriwai and Kopironui (Woodhill). He was hosted by Ngaoho rangatira Hauparoa and Tukaiuru at Maramatawhana (just north of Waimauku).[92] Maki fought alongside Hauparoa in a battle at Te Awaroa (Helensville). When the fighting was over Maki returned to Maramatawhana and there he constructed his own pa, Tineke. As Maki and his people had not had time to prepare cultivations at their new settlement, they remained heavily reliant on their hosts for food.[93]

> When Maki became short of food he went to look for some and found the kumara pits of Hauparoa . . . On having found the kumara pits the people of Maki set to and stole the kumaras, leaving the pits empty. Maki took some nikau leaves that were inside the pit and plaited them as a carrying strap (kawe-rau) for himself . . . was observed by a

[85] Ibid.
[86] Ibid.
[87] Ibid.
[88] Ibid, p31.
[89] Ibid.
[90] Ibid.
[91] Ibid.
[92] Ibid, p32.
[93] Ibid.

> woman of the local people. This was mentioned to Hauparoa . . . When all of both the tribes were gathered together the woman was questioned as to who she had seen. The woman then went about looking, and having recognised Maki she pointed to him; then Maki was ashamed . . . Then threats were indulged in by Maki and his people that they would kill that people because of their meanness in respect of food.[94]

After this incident, Maki and his family moved to Mimihanui near present day Parakai. He and his Ngati Awa (Ngaiwi) followers slowly took control of the area through conquest and marriage with Ngaoho.[95] During this period control was also taken of Hikurangi after battles at Waitetura (North Piha), Waihuna (Pararaha Valley) and Te Rauotehuia (Huia Bay). Maki then stamped his mana on the area by naming a hill inland of Taupaki 'Te Pou a Maki' and a hill in the south Te Ka a Maki (Jackie's Peak, Huia).[96] The peaks extending down the Waitakere Ranges from Muriwai to the Manukau Harbour entrance became known as Nga Rau Pou a Maki (the many posts of Maki).[97]

Tawhiakiterangi, the only child born to Maki and his wife Rotu after migration from Kawhia, was born near Mimihanui, at a place known as Pokopoko o Rotu. The child became known as Te Kawerau a Maki as a reminder of the deed that led to his father taking control of the district.[98] Although Maki and his people knew themselves as the Ngaiwi hapu of Ngati Awa, others referred to them collectively from that time, as Te Kawerau, and to Tawhiakiterangi's descendants as Te Kawerau a Maki.[99]

The eldest son of Maki, Manuhiri, lived at Otakamiro (Muriwai), then Koritoti near Araparera and Mangakura near the Hoteo River where he died. His descendants moved to the area between Matakana and Te Arai where they settled. Today they identify themselves as part of Ngati Wai. They are still known as Ngati Manuhuri and they maintain land at Pakiri and a marae at Omaha on the basis of their descent from their Kawerau ancestor Manuhiri.[100]

The second son of Maki, Ngawhetu, ultimately settled at Tomorata and Mangawhai. His daughter Moerangaranga married Rongo, one of the sons of the Ngāti Whātua o Ōrākei leader Haumoewharangi.[101] From Moerangaranga and Rongo came Ngati Rongo who maintain marae at Araparera and Kakanui. They identify as part of the wider Ngāti Whātua o Ōrākei iwi. Te Kawerau a Maki are also of this descent group, in particular through the marriage of Moenoho and Rangimatoru of Te Waiohua.[102]

---

[94] Ibid, p32. Cited from Wi Aoterangi, Ruarangi and Ohomata in *Fragments of Ancient Maori History,* collected by J McGregor and translated by G Graham, 1923, p11.
[95] Ibid, p32.
[96] Ibid.
[97] Ibid, p33.
[98] Ibid.
[99] Ibid.
[100] Ibid, p34.
[101] Ibid.
[102] Ibid.

The third son of Maki, Maraeariki, settled in the Whangaparaoa district and settled at Te Rua Taniwha at the head of the Orewa River.[103] Kahu, one of his children, became the eponymous ancestor of Ngati Kahu who occupied the North Shore-Mahurangi area until the mid-nineteenth century.[104] The North Shore -Whangaparaoa area's traditional name, Te Whenua roa o Kahu, derives from Kahu. Most importantly, Taua states, a daughter of Kahu – Marukiterangi, married Tawhiakiterangi (Te Kawerau a Maki).[105] Te Kawerau a Maki's descent from Maraeariki and Kahu provides an important basis of their mana whenua in the North Shore-Mahurangi area, and in the north-eastern part of the former Waitakere city. In 1866, rangatira Te Watarauhi Tawhia was awarded title by the Native Land Court to Maungatauhoro (Wenderholm Regional Park) on the basis of his descent from Maraeariki and Kahu.[106]

The youngest son of Maki, Tawhiakiterangi (Te Kawerau a Maki) generally lived at Kaikai, near Helensville and Te Pua a Te Marama near Parakai. Sometimes, however, he would stay at his wife's home at Karepiro Bay, Okura, and visit his lands at Waitakere. In old age, he moved to Ruarangihaerere near Woodhill. It was here that he was murdered by a visiting group from the Northern Wairoa. This kohuru or unacceptable killing, states Taua, was one of the final outcomes of a time of hostility between Te Kawerau and Ngāti Whātua o Ōrākei.[107]

In the early 1700s several hapu of the iwi grouping Ngāti Whātua o Ōrākei migrated southward into the area around the Kaipara Harbour entrance.[108] Relations between Ngati Awa (Te Kawerau) and Ngati Whatua were friendly at first with important marriages being made between the two groups. However, animosity soon grew between them. During one particular visit to Te Kawau (South Head, Kaipara), a young Ngāti Whātua o Ōrākei woman Rongoteipu interrupted a ceremony being conducted by Te Kawerau tohunga in a kumara cultivation. She was humiliated and sent home to the Northern Wairoa. Her grandfather, Haumoewharangi (the paramount chief of Ngati Whatua) decided to plunder the kumara gardens (muru) at Te Kawau for the insult to his mokopuna. The chief and his followers achieved this at night. As the canoes were so heavily laden with kumara, the chief and his granddaughter were left on the beach to be safely transported later. However, they were discovered by Te Kawerau and killed at Manunutetai. Their deaths were naturally of major significance to Ngati Whatua and it led to fighting between the two iwi.[109]

[103] Ibid.
[104] Ibid.
[105] Ibid.
[106] Ibid.
[107] Ibid.
[108] Ibid, p35.
[109] Ibid. Read the full chapter of Te Warena Taua, 'He kohikohinga korero mo Hikurangi,' in F MacDonald and R Kerr (eds), *West: The History of Waitakere* (Random House, Auckland, 2009) for more information.

Ngati Whatua defeated Te Kawerau in several major battles and ultimately, they settled the area on the western side of the Kaipara River extending from South Head Kaipara to Woodhill.[110] Te Kawerau continued to occupy their ancestral land throughout the rest of the wider district north of Tamaki, including Hikurangi.[111]

Manu, the eldest son of Tawhiakiterangi led Te Kawerau people through the next generation. He was awarded the name Taimaro in adulthood due to his ability as a warrior and leader and his mana stretched from the west to the east coast.[112] His eldest son, Te Hawiti concluded a major and lasting peace with Ngati Whatua (known as Te Taupaki – the place where one of four peace-making meetings was held) and because of his decisiveness in the process, he was given the name Te Auotewhenua 'the current of the land.'[113] Taua states that he did not wander the land like his father Taimaro had done. Instead he focused his life on Te Korekore and to the land to the south and east (Waitakere and North Shore). He lived at Puketotara near Te Henga and various other pa around Hikurangi.[114] Te Auotewhenua was well-known for taking preserved toheroa from Muriwai in exchange for delicacies such as dried eel, from his Ngati Kahu-Ngati Poataniwha relatives who lived around the shores of the upper Waitemata Harbour area between Tahingamanu (Hobsonville) and Orangihina (Te Atatu).[115] It was on one of his visits to Te Atatu that he married a local woman of high birth. It is from her occupation of Te Atatu that the name Oringihina – the dwelling place of Rangihina derives. A sculpture commemorating Te Auotewhenua now stands at the base of the carved pou at the Arataki Visitor Centre in Titirangi.[116] It was from this famous ancestor that Te Kawerau a Maki have successfully laid claim to their remaining 'Native Reserve' land in West Auckland (after the devastation of the Crown purchases of the 1850s).[117]

In the mid-1700s conflict broke out between Ngati Whatua and the Waiohua people of Tamaki. Taua speaks of one particular event where Te Raraku, a chief of Te Kawerau (Ngati Rongo) descent, encouraged Waiohua relatives who were attending a funeral (hahunga) in south Kaipara to kill some of the local Ngati Whatua (Te Taou) people who had recently attacked Ngati Rongo.[118] This led to further fighting and the Ngati Whatua force eventually attacked the Tamaki isthmus. They were victorious in battles at Paruroa (Big Muddy Creek) and Paturoa (Titirangi Bay), killing many Te Waiohua people.[119] Three Waiohua hapu were driven from the Tamaki isthmus and the Ngati Whatua invaders concluded peace-making

[110] Ibid.
[111] Ibid, p36.
[112] Ibid.
[113] Ibid.
[114] Ibid.
[115] Ibid.
[116] Ibid.
[117] Ibid.
[118] Ibid, p37.
[119] Ibid.

with marriages to Te Waiohua. Some of them settled in the Tamaki area. The present day Ngati Whatua o Orakei people descend from these marriages.[120]
Te Kawerau a Maki remained untouched on their ancestral lands. Although fighting had taken place on the southern edge of the Waitakere Ranges, the episode was not an invasion of the area as there was no attempt by the invading forces to occupy Hikurangi. The fighting, Taua states, involved two iwi who did not hold mana whenua over the land but who had pursued each other to the northern shores of the Manukau.[121] As Te Kawerau a Maki were intimately related to both sides, they remained neutral in this period of conflict while providing shelter for some of the refugees from the fighting.[122]

During the late eighteenth and early nineteenth centuries, Te Kawerau a Maki lived peacefully in West Auckland. However, they were becoming influenced by the European world. New food sources, such as the pig, potato and even cats, were introduced by neighbouring iwi who had made contact with Captain James Cook, and early whaling and timber gathering ships. Like all the iwi of Aotearoa, Te Kawerau people were also introduced to European epidemic diseases such as influenza (rewhareha).[123]

The first recorded European to visit Te Kawerau a Maki was the missionary Te Matenga (Reverend Samuel Marsden) who met some of their people at Muriwai and Whatipu in 1820. Marsden roused European interest in the district's large kauri forests and navigable harbours, thus impacting hugely on the lives of the tribal group.[124]

By the early nineteenth century Te Kawerau a Maki had ancestral relationships with Hikurangi for over six centuries and remained secure on the land even after a century of conflict. However, that all changed due to the devastating impact of the introduction of muskets. This period in history is known as Nga Pakanga a Te Pu – the musket wars.[125]

In 1821, several Te Kawerau a Maki warriors, including Te Ngerengere and his son Tawhiakiterangi (Te Watarauhi), were involved in a fighting expedition around the north Island (known as Te Amio Whenua). A Ngapuhi force, armed with muskets attacked the Tamaki isthmus where they devastated the Te Urikaraka (Ngati Paoa) settlement of Mauinaina.[126] Te Kawerau gave shelter for Ngati Whatua and Ngati Paoa refugees at Te Rua o Te Moko near Te Henga and at Muriwai. Te Kawerau relatives on the eastern coastline also faced musket raids by northern iwi in the early 1820s. Although Te Kawerau a Maki had committed no wrongs against Ngapuhi, they were, like all of the iwi of the region, to be devastated because they were related to those who had offended Ngapuhi.[127]

[120] Ibid.
[121] Ibid, p38.
[122] Ibid.
[123] Ibid, p39.
[124] Ibid.
[125] Ibid.
[126] Ibid.
[127] Ibid.

In 1825, Ngapuhi again won a major battle against the combined iwi of the Kaipara and Mahurangi areas at Kaiwaka. Honga Hika, led the main Ngapuhi force south down the eastern coastline of the region. Another group, led by Te Kahakaha of Ngati Tautahi attacked the Ngati Whatua settlements of south-western Kaipara before attacking Te Kawerau a Maki at Muriwai, Te Henga and Karekare. The Te Kawerau people suffered great loss, facing muskets while being armed only with traditional wooden and stone weapons.[128]

Following the devastating attacks, relays Taua, the majority of Te Kawerau people sought exile in the Waikato along with all of the iwi in the Auckland region. Only a few young men remained to 'keep the fires burning' on their ancestral land.[129] In 1836, after a decade in exile, Te Kawerau a Maki and the other iwi of the district were escorted back to Tamaki under the protection of the Tainui ariki Potatau Te Wherowhero (who later became the first Maori king).[130] While Te Wherowhero settled at Awhitu, Te Kawerau a Maki settled opposite him on their ancestral land at Kakamatua on the northern shores of the Manukau as they still feared Ngapuhi attacks. After six months, they shifted north and built a musket pa at Parawai near Te Henga.[131]

Between 1836 and 1839 Te Kawerau a Maki were visited by Church Missionaries from Orua Bay, Awhitu, and Wesleyan missionaries from the northern Wairoa. In December 1845, the Wesleyan Missionary Reverend James Buller visited the settlement at Wekatahi at Piha and baptised the rangatira Te Tuiau who took the Christian name Hoani (John). He later baptised Tawhiakiterangi who took the name Hone Watarauhi (John Waterhouse) after a leading Wesleyan minister. Te Kawerau people followed their rangatira and took up Christianity.[132]
Between 1836 and 1846 Europeans sought land and timber-cutting rights at the Ngati Whatua village of Okahu near Auckland.[133] As early as 1936, Te Kawerau a Maki were affected by private land purchases, through the loss of the Karangahape (Cornwallis) area which was sold by Ngati Whatua of Okahu to timber merchant Thomas Mitchell.[134] Te Kawerau were again severely impacted in 1844 when Ngati Whatua sold nearly 18,000 acres covering the Te Atatu-Henderson area to timber merchants Thomas Henderson and John MacFarlane.[135] As a result of this purchase Te Kawerau a Maki lost their kainga of Orangihina, Te Kopua. Opanuku, Te Huruhuru and Kopupaka, and significant wahi tapu in the Henderson Valley.[136] When the Crown right of pre-emption was removed from the sale of Maori land Te Kawerau lost all ancestral land on the north-eastern edge of Hikurangi and

[128] Ibid.
[129] Ibid, p40.
[130] Ibid.
[131] Ibid.
[132] Ibid.
[133] Ibid. These transactions have been the subject of a significant amount of study in evidence presented to the Waitangi Tribunal by Te Kawerau a Maki and the other iwi of the area.
[134] Ibid.
[135] Ibid.
[136] Ibid.

the North Shore.[137] These private land purchases could not be resolved through a Crown Commission so the Crown purchased the land. West Auckland land Crown purchases were transacted at the Ngati Whatua village of Okahu with those involved in earlier transactions.[138]

The land between the Whau Portage (Blockhouse Bay) and Titirangi was purchased by the Crown in 1848. But most importantly, on November 10, 1853, the Crown purchased the Hikurangi Block covering the majority of what is known today as Waitakere. The transaction did not involve the senior rangatira of Te Kawerau a Maki. The crown did not recognise this mistake until it was too late, with many Europeans already settling on the land. The Crown thus conducted a separate Hikurangi purchase agreement with Te Kawerau a Maki on 27 December 1856.[139] Te Kawerau a Maki were directly involved in the sale of land to the Crown in the north of the district in the Paeoterangi and Puatahinga purchases of 1854.[140]

Realising that most of their ancestral land was gone, Te Kawerau a Maki rangatira negotiated the retention of 'Native Reserves' extending between Muriwai and Piha. Later they were awarded title to land at the Maungatauhoro Block, Puhoi, and the Mangatawhiri Block near Omaha, although these titles were awarded as part of the process of alienation to European buyers. At the end of this burst of Crown land purchase, Te Kawerau a Maki retained the Piha and Wekatahi Native Reserve (725 ha), and the Waitakere and Puketotara Native Reserve (1180 ha), as well as land extending north to Muriwai and Kopironui (Woodhill).[141] Although the Native Reserves were to be 'inalienable' for the Te Kawerau a Maki people to live on in perpetuity, this provision was soon undermined by the individualisation of title to Maori land resulting from the provisions of the Native Land Act 1865.[142] Disillusionment followed as Te Kawerau a Maki's ancestral land was taken from their control, access to their traditional food gathering places was severely restricted and their forests were felled.

Yet more disruption was to follow when fighting broke out between the Waikato tribes and the Government in July 1863. Te Kawerau a Maki watched with tripdation when the conflict came to Hikurangi and Tainui warriors chopped down the navigational signal mast at Whatipu in late 1863.[143] However, they continued to live quietly at Waitakere, Muriwai and Kopironui, and remained loyal to the Crown. After the death of Heketarere, the Piha and Wekatahi Reserve was leased, then sold, and Te Kawerau a Maki's settlement became

[137] Ibid.
[138] Ibid, p41.
[139] Ibid.
[140] Ibid.
[141] Ibid.
[142] Ibid.
[143] Ibid.

focused on Waiti and Parawai at Te Henga. They also had settlements at Muriwai, Kopironui, and Orakei.[144]

In the early twentieth century Te Kawerau a Maki were under the leadership of Te Utika Te Aroha. He kept his people strong in difficult times and worked hard to help in the building of a new marae at Paremoremo in 1908.[145] He and his son-in-law, the Te Waiohua rangatira Te Rongonui Te Haupatahi Whareiti were dedicated adherents of the Pai Marire faith and maintained strong links with the Kingitanga. By the time of Te Utika Te Aroha 's death in 1912, states Taua, Te Kawerau a Maki people were living in cultural isolation at Waitakere. They did not have access to western education, spoke almost no English and lived a traditional way of life. Their land base was falling, their village was severely affected by flooding after the Waitakere Dam was built in 1910, and there was very little in the way of work available in the Waitakere area.[146]

Some Te Kawerau a Maki people remained at Te Henga until the 1950s, although most had moved elsewhere to find employment and the company of other Maori. Those who moved to Kopironui had their land taken under the Public Works Act for sand stabilisation purposes.[147] Others moved to Orakei only to slowly lose their land there also and to end up in State rental houses. Some families applied for Maori Affairs loans to build on land across the Waitakere River at Puketotara and at Parawai near Te Henga but without success. It was refused on grounds that the land was too isolated.[148] They were told, however, that if they sold their land at Te Henga and bought sections in the township of Waitakere they would be assured of loans. This was part of the then Government policy of 'pepper-potting' – scattering Maori families among Europeans to assimilate them into Pakeha culture.[149]

The last few decades have seen Te Kawerau a Maki without a permanent home in their ancestral homeland of Hikurangi. Now families are dispersed around the Auckland region and further afield. But they have, states Taua, retained and enhanced their identity.[150] Their ancestral footprints are firmly imprinted throughout the Waitakere and Tamaki isthmus and they will move proudly forward as mana whenua of Tamaki Makaurau.

---

[144] Ibid, p42.
[145] Ibid.
[146] Ibid.
[147] Ibid.
[148] Ibid.
[149] Ibid, p43.
[150] Ibid. In 1988, a Te Kawerau a Maki Tribal Trust was formed. Since then, the wider public has become more aware of their identity and long association with Hikurangi and the wider region through efforts and the writings of Graeme Murdoch. This identity can also be seen through the erection of carved pou throughout the Waitakere district, including inside the Waitakere City Council building at Henderson. The pou reflect positive relationships formed with local government. Under Mayor Bob Harvey's leadership, the relationship between Waitakere City (former) and Te Kawerau a Maki was formalised in a Memorandum of Partnership, and the iwi has also played an important role in the Maori Standing Committee of Council – Te Taumata Runanga.

Ngati Whatua

Ngati Whatua also claim close association with the lands of the Tamaki isthmus and Waitakere. The founding ancestor of Ngati Whatua is Tumutumuwhenua and this tupuna (ancestor) and his descendants initially occupied the Kaitaia area.[151] The primary waka that bought further Ngati Whatua tupuna to Te Ika a Maui, states Paterson, is acknowledged as Mahuhu-ki-ti-rangi – firstly to Takou (near North Cape) from 'Waerota', via 'Waeroti' and 'Mata-te-ra'.[152] Rongomai, a rangatira of the canoe, eventually settled with his people in the Kaipara. The settlement was named Taporapora for a place in Hawaiki. After his death, Rongomai's son Po and others returned to the far north, where the tribal identity continued to grow. Paterson affirms that over the centuries intermarriages with other groups saw the inclusion of bloodlines from most other iwi and ancestral waka into the Ngati Whatua whakapapa.[153] Over time, Ngati Whatua slowly migrated from their base in the far north back to the Kaipara. This took several centuries to achieve and was initiated by a 'vengeful pursuit of elements of the Ngati Awa' (then resident in the Hokianga) and later driven by the desire for fertile land.[154] Unfortunately, says Paterson, ancient ancestral ties and intermarriages between Ngati Whatua and other residents in south Kaipara, notably Kawerau, failed to prevent conflict developing. Consequently, around 1680, Ngati Whatua asked for the help of Kawharu, a famed relation and warrior living at that time at Aotea Harbour.[155] A Ngati Whatua war party, led by Kawharu, fought against Kawerau from the Kaipara down the Waitakere Coast. This was known as the 'Stripping Conquest' – Te Raupatu Tihore.[156] Paora Tuhaere, a leading Ngati Whatua rangatira of the late nineteenth century, described this conquest as follows:

> *In one day he took two pas. Next day three pas. The nightfall following two more pas.*[157]

The Waitakere pa seized during the period of warfare included Ihumoana (at Te Henga), Anawhata, Whakari (Lion Rock) and Paratutai (at Whatipu). Even during this turbulent time, says Paterson, the links that existed between the two tribes meant that 'not every division of [Ngati Whatua] was represented, many men considering themselves too closely bound by blood ties to fight Kawerau people.[158]

Kawharu became a prominent warrior on the Tamaki isthmus, thus the saying 'He taumata rau te toa o Kawharu' (the fame of Kawharu has many resting places). This quote gives

---

[151] Ibid, p50. Cited from IH Kawharu*, Orakei – a Ngati Whatua Community,* New Zealand Council for Educational Research, Wellington, 1975.
[152] Malcolm Paterson 'Ngati Whatua and West Auckland (Ko Nga Kuri Purepure o Tamaki, e kore e ngaro I te po)' in F MacDonald and R Kerr (eds) *West: The History of Waitakere* (Random House, Auckland, 2009) pp49-62. Cited from George Graham, 'Mahuhu – the Ancestral Canoe of Ngati-Whatua (Kaipara)', *Journal of the Polynesian Society, Vol. 48,* 1939.
[153] Ibid, p50.
[154] Ibid.
[155] Ibid.
[156] Ibid.
[157] Ibid. Cited from C Archie, *Ngati Whatua o Kaipara Ki Te Tonga – Traditional History,* Wai 312.
[158] Ibid. Cited from Graeme Murdoch, historian, personal comment, June 2008.

recognition to the many sites of his exploits, such as Te Toi o Kawharu, the highest point of the Waitakere Ranges.[159] Although known by an existing name to the Kawerau people, Nga Puketurua (one of the Twin Peaks inland of Huia), the summit is remembered by Ngati Whatua for Kawharu and his Waitakere exploits. The late Ngati Whatua rangatira, Sir Hugh Kawharu (born into the Paora whanau), was also given the name of this prestigious tupuna to carry and pass on, as was his great-grandfather Paora Kawharu before him.[160]

After further war successes, peace-makings and intermarriages with Kawerau, Ngati Whatua cemented their settlement of the lower Kaipara. The most well-known peace agreement between Ngati Whatua and Kawerau, Paterson states, occurred when the Ngati Whatua rangitira Poutapuaka, moving south and defining the boundaries of the land, was met at Taupaki by the Kawerau chief Te Au-o-te-whenua, who was carrying out a similar mission. This resulted in Te Au-o-te-whenua gifting taonga or precious heirlooms to Ngati Whatua at Te Korekore, Kahukuri and Rangitopuni (Riverhead) in order to confirm peace between the two groups.[161] The place names all allude to the nature of the meetings – Taupaki meaning 'firmly bound peace', and both Kahukuri and Rangitopuni referring to the gifting of dog skin cloaks.[162]

By circa 1740 a prominent Ngati Whatua rangatira, Tumupakihi, died. Chiefs from all around the area were invited to his hahunga ceremony at Waituoro in the Kaipara. Kiwi Tamaki, ariki of the Waiohua confederation of Tamaki was one of the invited chiefs. However, Kiwi had been concealing unrequited anger over Kawharu's successes against his ancestors some generations before and from the more recent domination of Kawerau relations in the Kaipara.[163] Consequently, he led his people in a surprise attack during the ceremony. Paterson imparts that many Ngati Whatua people were killed, including Tapuwae, a son of the deceased rangatira. Tahatahi, the sister of Tuperiri (a leading rangatira of the Te Taou hapu of Ngati Whatua) was also killed. The Ngati Whatua survivors reached the safety of Te Makiri Pa and there they repulsed the Waiohua. Before Kiwi returned to Tamaki, he took part in an exchange of threats with Waha-akiaki (another son of Tumupakihi) that would confirm continuation of the fighting.[164] Kiwi promised that before long Waha-akiaki's breastbone would be hung from a tree in Maungakiekie. Waha-akiaki replied that it would be Kiwi's breastbone that would hang from the puriri at Tauwhare (a hill near Reweti).[165]

It wasn't long before Te Taou o Ngati Whatua sought revenge by amassing a war party to fight Waiohua. Fighting occurred in many places around the isthmus, including what is now Titirangi. Retaliatory raids on Kaipara saw the fighting move back and forth.[166] Attacks were

[159] Ibid.
[160] Ibid, p51. Cited from Margaret Kawharu, descendant, personal comment, June 2008.
[161] Ibid, p51. Cited from C Archie, *Ngati Whatua o Kaipara Ki Te Tonga – Traditional History,* Wai 312.
[162] Ibid.
[163] Ibid.
[164] Ibid.
[165] Ibid.
[166] Ibid.

launched against pa on the Awhitu Peninsula by canoeing across from Puponga. The main Te Taou force was positioned at Paruroa (big Muddy Creek) at this time. Kiwi Tamaki called his army together from allied peoples of Maungakiekie, Te Tatau o Riukiuta (Three Kings), Owairaka, Onehunga and Mangere, and moved in on Te Taou (led by Waha-akiaki, Tuperiri and Waitaheke (Tuperiri's half-brother).[167]

To gain an advantage over the much larger group of Waiohua, the Te Taou taua planned a mock retreat. They withdrew slowly up the valley side towards today's Scenic Drive while Waha-akiaki declared: 'let the bird be drawn into the snare.'[168] Te Taou continued retreating until the waters of the Waitemata could be seen. The signal to turn and fight befell when Waha-akiaki placed the oil calabash he had been carrying on the ground. The Waiohua were surprised to find themselves under attack by the retreaters. The critical point of the fighting came when Kiwi and Waha-akiaki, the two key protagonists, closed in hand-to-hand combat. After a fierce skirmish Waha-akiaki slew Kiwi with his stone weapon. Although the Waiohua warriors were demoralised by Kiwi's demise, the fighting continued until they reached the sea. However, even those Waiohua that did make it to the shore and launched their waka were not safe; it being recalled that Waitaheke sunk a canoe with his whalebone spear, preventing one party from escaping. Paterson relays that enough Waiohua lay dead on the foreshore after the battle that the shellfish beds were contaminated and stank and the battle became known as 'Te Rangi-hinganga-tahi' (the day when all fell together).[169] Waha-akiaki 'took' the name of his defeated enemy for himself to symbolise Kiwi's death at his hands.[170]

Paterson states that Te Rangi-hinganga-tahi was a defining moment in the framework of Maori Auckland. Te Taou had taken a powerful step towards dominance with their killing of Kiwi and many of his chiefs and men. However, further battles were necessary to cement their conquest of the Waiohua of the isthmus (notably Te Ara-pueru at Mangere Mountain, where again the losses of Kiwi's people were great).[171] Other Waiohua pa to the east of the isthmus at Kohimarama, Orakei and Taurarua (Judge's Bay) were captured by a separate Ngati Whatua taua that raided from, and returned to, the Kaipara.[172] Te Taou people settled the former Waiohua lands around the isthmus – symbolically Tuperiri, who continued to maintain the Ngati Whatua presence in Tamaki until his death in the 1790's, at Kiwi's former base of Maungakiekie. His son, Tarahawaiki married a prominent Waiohua woman, Mokorua. This marriage, states Paterson, added ancient whakapapa to Te Taou's claims to Tamaki through conquest and ongoing occupancy (and use of resources throughout the

[167] Ibid, p52.
[168] Ibid. Cited from C Archie, *Ngati Whatua o Kaipara Ki Te Tonga – Traditional History,* Wai 312.

[169] Ibid, p53. Cited from RCJ Stone, *From Tamaki-Makau-Rau to Auckland,* (Auckland University Press, Auckland, 2008).
[170] Ibid, p54.
[171] Ibid.
[172] Ibid.

region).[173] The offspring of this union restored an ancestral name of their mother's people, Nga Oho, for themselves as a hapu of Ngati Whatua.[174]

After Tuperiri died his people left Maungakiekie to begin a new cycle of occupation and resource use around Tamaki that continued until the colonial era. Settlements and gardens based around the mountain ended. Ngati Whatua became a coastal people with base settlements at Onehunga and Ihumatao, with summer fishing and shellfish gathering villages, and gardens at Orakei, Onewa, and both ends of the Whau portage (today's Portage Road between New Lynn and Karaka/Green Bay). Ngati Whatua permanently left canoes at the portage ends for convenience.[175] Ngati Whatua also had villages on the northern shores of the Manukau. This harbour has always been known for its fish stocks, particularly shark and kanae (mullet). Waka were dragged a short distance between tributaries (although at Te Whau there was a rise at the Manukau end) allowing movement between the coasts without having to circumnavigate the island. As stated earlier in this chapter, numerous middens (collections of shell, bone, stone and charcoal associated with food preparation and consumption) are found along the length of the Whau River, testifying to its importance in the resource cycle of Tamaki's tangata whenua.

Paterson states that conflict between Ngati Whatua of Kaipara and their northern neighbours, Ngapuhi, began to intensify at this time.[176]

In approximately April 1821, many Ngati Whatua from Kaipara and most of their fighting men from Tamaki were away on a nine-month long marauding campaign to the south – 'Te Amio-whenua' (the encircling of the land). They were led by Apihai Te Kawau (grandson of Tuperiri and son of Tarahawaiki) who was now the primary rangatira of the Ngati Whatua of Tamaki.[177] When Apihai and his men returned to Tamaki, they found Ngapuhi had destroyed the extensive Ngati Paoa settlements of Mauinaina and Mokoia (Panmure) with the aid of muskets that Pakeha trade in the North had afforded them. The settlements destroyed had been established on land gifted by Ngati Whatua. Those of Apihai's people who had remained in Tamaki (mostly women and children) went into hiding in the Waitakere Ranges, fearful of more attacks.[178]

Apihai and his people led a nomadic existence for more than a decade after this time, living in the Waitakere ranges, Hauraki, the Waikato, Kaipara and Mahurangi. Paterson states their plight, and often their path, was shared with people of Kawerau, Tainui and Ngati Paoa. This era of 'Musket Wars' during which Tamaki Makaurau was invaded by raiders from the north ordained the isthmus a 'no go' area for permanent settlement. Ngati Whatua of

[173] Ibid.
[174] Ibid.
[175] Ibid. Cited from RCJ Stone, *From Tamaki-Makau-Rau to Auckland,* (Auckland University Press, Auckland, 2008).
[176] Ibid.
[177] Ibid, p56. The men came from three subsidiary hapu of Te Taou, Nga oho and Te Uringutu (a name given to those remnant Waiohua who were subsumed by the Ngati Whatua victors).
[178] Ibid.

both Tamaki and Kaipara experienced brutal defeats in battle through this time of upheaval.[179]

Ngati Whatua would return to their ancestral lands to fish, forage, garden and 'light fires' during respites in Ngapuhi activity. They would immediately flee upon hearing that a new taua was moving towards their land. Ngapuhi, however, were not the only enemy of Apihai and his people. Historically fraught relations with some elements of Hauraki and Tainui led to conflict with these people while they were displaced to the south of their usual area.[180]

By 1835 Apihai and his people had been based for some time at Te Horo in the Waikato and had established close ties with Ngati Mahuta and their ariki Potatau Te Wherowhero (who later became the first Maori King). Ngapuhi no longer enjoyed a military advantage as Ngati Mahuta had also acquired muskets by this time. Potatau agreed to protect the people of the isthmus and the Manukau and to return them to their rohe.[181] Later that year, Apihai and his followers moved to Karangahape/Cornwallis and built a fortified pa and cleared gardens.[182] Here they stayed for several years, while their powerful ally Potatau established Ngati Mahuta and returning Tainui groups at other areas around the Manukau. Paterson notes that Captain Wing reported encountering some of Apihai's people in a small pa on the Whau Portage (probably at Karaka) during this time.[183] By 1838 Apihai and his people left Karangahape in favour of settlements at Mangere, Onehunga and Okahumatamomoe (Okahu), but Ngati Whatua continued to make use of their traditional places and resources throughout the Auckland area.[184]

Apihai and other Ngati Whatua chiefs, including Reweti and Paora Tuhaere, were at the forefront in the gifting and sale of Auckland land to the British Crown and settlers. They were hoping to obtain the benefits of a trade and security relationship with the new inhabitants. Their signatures appear on many of the deeds pertaining to land now within the boundaries of (the former) Waitakere City.[185]

Apihai actively encouraged Governor Hobson to move to Tamaki even before the signing of the Treaty of Waitangi on the Manukau in March 1840. However, it wasn't long before any mutual benefit gave way to the negative aspects of colonisation. Promises relating to the sale of land and guarantees of possession and chieftainship under the Treaty of Waitangi

[179] Ibid.
[180] Ibid, p57.
[181] Ibid.
[182] Ibid. Karangahape Pa can be seen today as the small headland not far north of the Cornwallis wharf, covered in regenerating bush. A path leads from the shore just north of the headland back to the south behind it (linking up to the road at the rear of the beach). Midden, mostly tuangi/cockle) is eroding out of the banks backing the beach on both sides of the pa and can be seen in the side of the path leading to the wharf. Terracing that would have provided space for habitation and gardening can also be seen.
[183] Ibid.
[184] Ibid.
[185] Ibid.

were not honoured.[186] Rather than the traditional Maori concept of sharing land with preservation of the mana of tangata whenua, the new settler population held a concept of exclusive ownership, thus placing extreme limitations on Ngati Whatua's access to their ancestral places and resources. New tensions between Maori tribes over mana whenua also developed. For instance, the Taupaki Block, named for the historic peace-making between Ngati Whatua and Kawerau, became a source of conflict between the groups. At this time Kawerau and various Tainui relations from the Manukau formed an armed show of force and set up boundary markers staking their claim over the land.[187] Otene Kikokiko (the leading Te Taou o Kaipara rangatira of the day), was determined to stop Kawerau 'taking' the land, and raised his own force at Ongarahu in the Kaipara and, having proceeded south, stopped at the designated boundary and sent for the Kawerau leader, Te Watarauihi.[188] Donald McLean, the chief Land Commissioner, and Apihai Te Kawau maintained peace throughout the mediation process. Apihau was related to all the involved groups and was employed by them as a native assessor for situations such as this. Ultimately the land was entrusted to Apihai and the Governor. One decade later, when title was issued, the grantees were Paora Tuhaere and Te Wiremu Reweti (Apihai's nephews) and Te Kene Tangaroa and Te Watarauihi for Te Kawerau.[189]

In 1854, land in Tamaki in Ngati Whatua title was reduced to the 700-acre Orakei Block – the hapu had functionally become Ngati Whatua o Orakei (as they are known today). Paterson states the abolishment of the *'traditional system of tribal land control through the individualisation of title by the Native Land Court disinherited many members of the tribe who were not named on land titles, and encouraged the fractionation and piecemeal sale of the tribal estate.'*[190] This was worsened by Crown acquisition of land through legislation such as the Public Works Act. By 1951, states Paterson, and despite at least eight actions in the Maori Land Court, four in the Supreme Court, two in the Court of Appeal, two in the Compensation Court, six appearances before Commissions or Committees of Inquiry and 15 petitions to Parliament seeking the restoration of tribal ownership of their land, the quarter acre cemetery at Okahu Bay was all that remained in Ngati Whatua o Orakei's hands.[191]

In 1977-78 members of Ngati Whatua and their supporters occupied ancestral land on Bastion Point. Their aim was to halt the construction of high-income housing and parks from Crown land that had been taken in part under the Public Works Act 90 years before.[192] The

[186] Ibid, p60. Promises relating to the sale of land included the establishment of endowment funds from the proceeds, the exclusion of pa and wahi tapu from sales and the setting apart of portions of sold land for the tribe's use and benefit.
[187] Ibid. Cited from Graeme Murdoch, *Te Kawerau a Maki and the Crown in Kaipara,* Wai 470, 2000.
[188] Ibid. Cited from Native Land Court. Kaipara Minute Book 2. *Otene Kikokiko. (Transcription).*
[189] Ibid.
[190] Ibid.
[191] Ibid.
[192] Ibid, p61. Their actions were not supported by all within the Ngati Whatua community – as others preferred to support the utilisation of legal methods in order to seek justice (despite more than one hundred years of failure).

Crown subsequently made a settlement regarding a portion of the disputed land with some of Ngati Whatua. However, this was superseded by the lodging of a claim with the Waitangi Tribunal in 1984.[193] The claim was settled in 1991, and saw the return of a small portion of the Orakei Block to tribal ownership, along with the creation of the public-access Takaparawha Reserve and a payment to assist with tribal development.[194]

In November 2011, Ngati Whatua o Orakei and the Crown signed a Deed of Settlement vesting the Pourewa Creek Conservation Area (33.64 hectares) in Ngati Whatua Orakei, as a recreation reserve to be administered by the Ngati Whatua o Orakei Reserves Board (the joint Ngati Whatua Orakei-Auckland Council body that administers the Whenua Rangatira at Bastion Point).[195] Ngati Whatua Orakei also received redress over the maunga on the Tamaki isthmus through the Nga Mana Whenua o Tamaki Makaurau (Tamaki Collective) Deed of Settlement.[196]

Ngati Whatua continue to uphold their traditions and to share their rich history from in and around the Tamaki isthmus and the city of Auckland. The Whau River is an important part of that history.

[193] Ibid.
[194] Ibid.
[195] Ngati Whatua o Orakei Deed of Settlement 5 Nov 2011.
[196] Nga Mana Whenua o Tamaki Makaurau Collective Redress Act 2014 at www.legislation.govt.nz.

Chapter Three

European Settlement and the Rise of Industry

Although Europeans had ventured into the Manukau Harbour to cut timber from the late 1790s they did not settle in the area at that time. Much of the land that surrounded the harbour contained an abundance of valuable totara, and on both the northern shore and the Awhitu Peninsula there was said to be 'a great quantity of kauri.'[197] On 11 January, 1835, however, William White, a Wesleyan missionary, and his colleague Thomas Mitchell (a sawyer and lay preacher) travelled to Karangahape pa where White negotiated on Mitchell's behalf, the 'purchase' of an 'immense' block of land, of about 400 square miles.[198] White had been concerned that the Anglican Church Missionary Society (CMS) were about to establish a monopoly in the Manukau area so purchasing the land was, in his mind, a pre-emptive strike that would prevent this domination from occurring.[199] The deed of agreement, signed by Apihai Te Kawau, Kawae, Tinana Te Tamaki and other Ngati Whatua chiefs, appeared to transfer an area whose boundaries comprised of the following: *"the northern shoreline of the Manukau as far as the Otahuhu portage, thence along the western bank of the Tamaki river as far as the Waitemata harbour; the boundary then to follow the southern bank of the harbour as far as today's Hobsonville, almost to the head of the Waitemata; from the estuary there to the headwaters of Waitiputa (Brigham's Creek); thence across the North Island to the Tasman Sea; south-west down the west coast to the north Manukau heads."*[200] C J Stone summarises the block which White and Mitchell claimed to have purchased as including practically the whole of the Tamaki isthmus and the heavily bush-clad southern portion of the Waitakere Ranges (barring some very minor exclusions).[201] White's biographer, Murray Gittos, puts the consideration listed on the deed of conveyance as '1000lb of tobacco, 100 dozen pipes, and six muskets – a total of £160.[202] Stone asserts that this transaction is not to be considered a genuine 'sale' of the land, at

[197] R C J Stone *from Tamaki-Makau-Rau to Auckland* (Auckland University Press, Auckland, 2001) p155. Cited from Margaret Hargreaves 'Early Manukau 1820-65' MA Thesis, Auckland University College, 1943.
[198] Ibid. Cited from R A Sherrin and J H Wallace *Early History of New Zealand,* Auckland, 1890.
[199] Ibid.
[200] Ibid.
[201] Ibid.
[202] Ibid. Cited from Murray B Gittos *'Give Us a Pakeha': The 1830's Crusade of William White to supply eager Maori tribes on the west of the North Island with European Settlers* (Auckland, New Zealand, 1997) p14.

least not by any European sense of the word.[203] Apihai Te Kawau was not selling his birth right of his tribe – rather he was buying a pakeha to live at Karangahape. It was thought that a pakeha's presence would bring mana to the chief, help ward off hostile attacks, provide an interpreter and promote trade.[204] Te Kawau was merely modifying an age-old Maori tradition by provisionally gifting Mitchell the right to use the designated land for a particular purpose.[205]

In a written attestation made in October 1840 to the Protector of the Aborigines, George Clarke, Te Reweti (Davis Tamaki), (Te Kawau's nephew) attested to the fact that the designated land area was also in fact much, much smaller than White and Mitchell had extrapolated.[206] Te Reweti testified that:

> When we spoke to Mitchell and White, when we pointed out to them the extent of country belonging to us, they had said to us, 'Have you a large country in your possession?' We then said, 'Our boundary line is at Otahuhu, and runs along the district belonging to Ngati Paoa until it reaches the Waitemata.' This is what we said when we pointed out to them the extent of our territory. From thence their hearts avariciously conjectured that the whole was for them, we having only intended to point out the extent of our land.
> The exact spot that was pointed out to them was Karangahape. The boundary lines of that place are these: - The boundary on the outside, that is, looking towards Orua (south Manukau heads) is Kakamatua; proceed inwards along the coast to Puponga, on to Karangahape, till you arrive at Nihotupu.
> Our names, that were attached to that deed, were intended for that portion of the land only.[207]

After the land 'purchase' was agreed, Mitchell began constructing a house at Puponga, the first European house to be built on the northern shores of the Manukau. However, it is recorded that he left the area with White on the sailing vessel *Fanny* (on 30 January 1835) after only nineteen days to re-join his wife and young family living at Hokianga.[208] There is no record showing that Mitchell ever returned to Karangahape, either to cut timber or to finish and occupy his house.[209] Mitchell died on the 6 November 1836 and his widow and children then left the Hokianga, returning to Sydney.

By the early 1840s a few settlers had begun to cut timber and farm on the flatter parts of the coast and by 1842 the town of Auckland had a population of 2895.[210] Most were engaged in timber culling or transport. With the population mounting, and productive land limited – as Maori were withholding sales of land south of Auckland – areas in the west that could be serviced by water were valuable.[211] As timber was cut, grass was sown and rough

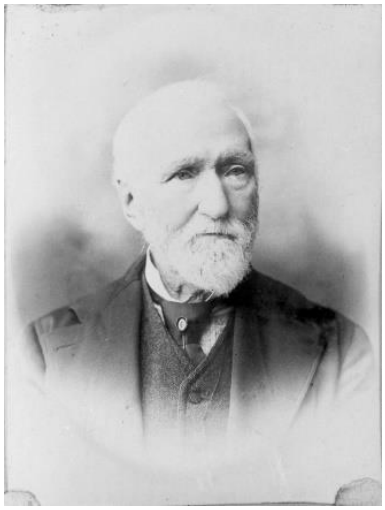
[203] Ibid.
[204] Ibid.
[205] Ibid.
[206] Ibid.
[207] Ibid. Cited from Turton, *Epitome of Official Documents,* Wellington, 1883, p148 (George Clarke to Colonial Secretary, 4 Nov, 1840).
[208] Ibid. Cited from Gittos, 1997.
[209] Ibid.
[210] F MacDonald and R Kerr (eds) *West: The History of Waitakere* (Random House, Auckland, 2009) p91.
[211] Ibid.

pastures established in any suitable area. By 1848 Auckland had a population of 7000 inhabitants and communities along the harbour were bustling.[212]

In 1853, the Hikurangi Purchase was completed and this opened up land to immigrants[213]. At this time, Auckland's population had risen to 9000.[214] The 1855 electoral roll shows over 70 men living in the coastal communities as sawyers, splitters, wood cutters, mill and timber workers, a few farmers, boat builders and other tradesmen. The roll excludes women, children, recent arrivals, transient workers and Maori.[215]

Although timber dominated Waitakere's economy in the mid nineteenth century, some settlers looked to the ground for inspiration. The grey and white Pleistocene clay became the start of a great clay and pottery industry arising from the Whau area from the 1850s onwards. The industry began with many small works scattered around the Whau River, which was used to transport bricks by boat to Auckland.

Pollen Brickworks and Potteries

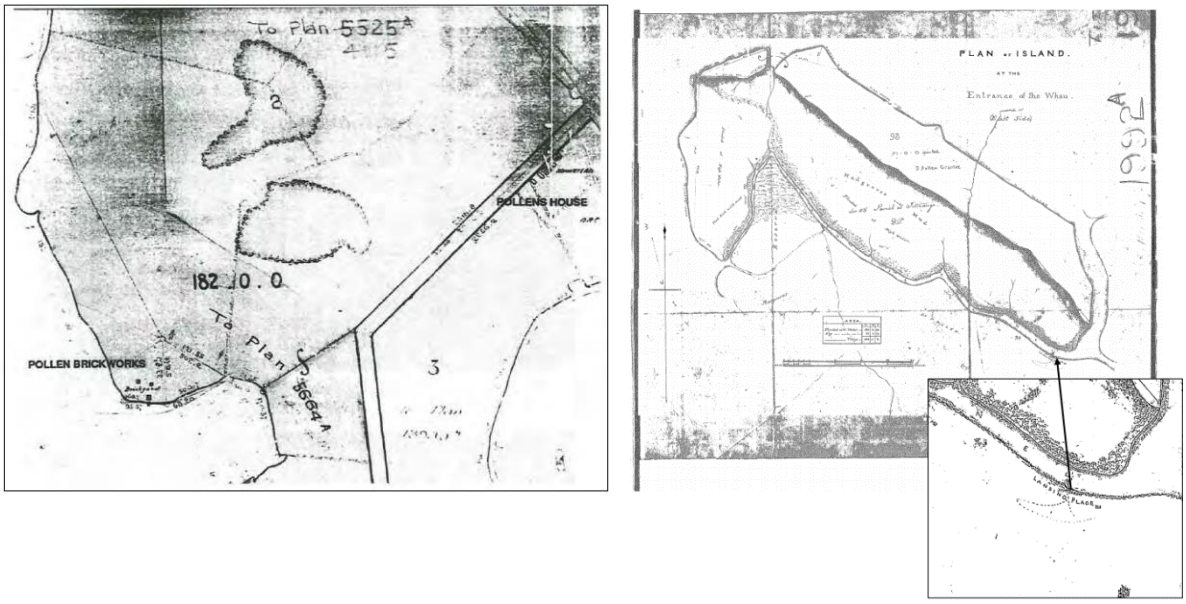


One early settler, Dr Daniel Pollen was quick to turn his interest to brickmaking.[216] Pollen was born in Dublin on 2 June 1813 and had spent time as the resident medical practitioner for the copper mining community on Kawau Island for several years from 1847. He arrived in the Bay of Islands on a whaling ship in January 1840, just in time to witness the signing of the Treaty of Waitangi.[217] Although he practised medicine in Auckland and had a lengthy career in politics, (including becoming Colonial Secretary and for a brief period Premier of New Zealand in 1875-1876) his entrepreneurial streak led him towards other financial opportunities such as property dealing and brickmaking.[218]

In 1855, Pollen purchased land on the Rosebank Peninsula.[219] He purchased Allotments 2 and 4 from John Kelly who had himself purchased the allotments in 1843 and 1844 respectively.[220] Pollen's third purchased allotment (Allotment 3) was purchased from Mr

[212] Ibid.
[213] Ibid.
[214] Ibid.
[215] Ibid.
[216] Photo of Dr Daniel Pollen sourced from Alexander Turnbull Library Reference: F-132-35mm-F.
[217] New Zealand History *Nga korero a ipurangi o Aotearoa* website 'Daniel Pollen.' Sourced online at http://www.nzhistory.net.nz/media/photo/daniel-pollen.
[218] New Zealand Transport Agency (NZTA) *Waka Kotahi* 'Western Ring Route – Waterview Connection, Assessment of Archaeological Effects' prepared by Rod Clough, Sarah Macready and Simon Bickler – Clough & Associates Ltd, July, 2010, p23-26.
[219] The year 1855 is suggested as a baby son was born to the wife of Dr Pollen at the Whau in April 1856. *Daily Southern Cross,* 1 April, 1856.
[220] John P Adam 'The Rosebank Peninsula: A landscape thematic study' (Avondale-Waterview Historical Society, Auckland, 2011) p33.

McKay who had acquired the land in 1844.[221] Pollen thus established one of the earliest brickworks and potteries in Auckland next to the Whau Creek with his homestead being built nearby on Rosebank Road (the location of his death in 1896.)[222] The rich Pleistocene clay was perfect for this kind of endeavour. Motu Manawa Island (island of mangroves) was also purchased by Pollen as it possessed a great source of lime.[223] Over time the island became known as Pollen Island. The cockle shells were shipped from the island to the peninsula and burned to make quicklime, an ingredient in both cement and bricks and therefore a vital mineral for a growing city.[224] The lime was also used during a typhoid outbreak at the Whau Lunatic Asylum in 1922. Sixty patients are believed to have fatally contracted the disease. The lime was used to decontaminate freshwater springs on the property.[225]



(Left) 1884 plan showing locations of Pollen Brickworks and House on the Rosebank Peninsula. Sourced from Best, S. 1993. The Whau Brickworks and Pottery: archaeological excavation of an early industrial ceramic site (R11/1509), on the Whau Peninsula, Auckland. Auckland: Department of Conservation.

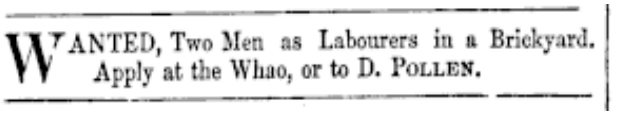
(Right) SO 1992A (dated 1857) showing Pollen Island ('Dr Pollen grantee') and landing area (inset).

In 1861, a newspaper article celebrating the re-opening of the Wharf Steam Flour Mills on Queen Street (which had earlier burnt down) stated the mills were 'built of the best New Zealand brick' manufactured by Dr Pollen.[226] At that time, the mills were the largest and most technologically advanced in the Auckland Province.

[221] Ibid.
[222] New Zealand Transport Agency (NZTA) *Waka Kotahi* 'Western Ring Route – Waterview Connection, Assessment of Archaeological Effects' prepared by Rod Clough, Sarah Macready and Simon Bickler – Clough & Associates Ltd, July, 2010, p23-26.
[223] Kennedy Warne 'The Wilderness Next Door' New Zealand Geographic, Issue 123, Sep-Oct 2013.
[224] Ibid.
[225] Ibid.
[226] *Daily Southern Cross,* 18 October, 1861, p3.

Although Dr Pollen's brickmaking enterprise was running well, he did not limit his business to merely burning good quality bricks. By 1863 he had sent for an experienced pottery manager, James Wright, from Staffordshire England to join him on the Whau. (Malam, Ringrose and Redfern had also worked for Pollen at different times before opening their own brickyards along the Whau.)[227] Lisa Truttman (historian) affirms Wright was initially employed by Pollen as his manager for the making of telegraph insulators.[228] The government at the time was in need of good lines of communication with troops heading to Ngaruawahia and further afield at the commencement of the Waikato Wars.[229] However, Truttman avers the endeavour was a failure as Wright was more predisposed to creating works of art rather than works of war and the arrangement between the two men ceased.[230] Wright's wares were accepted for display at the January 1865 Industrial Exhibition held at Dunedin. The items included *'coarse and fine pottery, including butter pots jugs, preserve jars, teapots, specimens of porcelain ornaments, encaustic tiles, &c.'*[231] Dr Pollen also exhibited a *'large terracotta vase, and selection of pottery.'*[232]

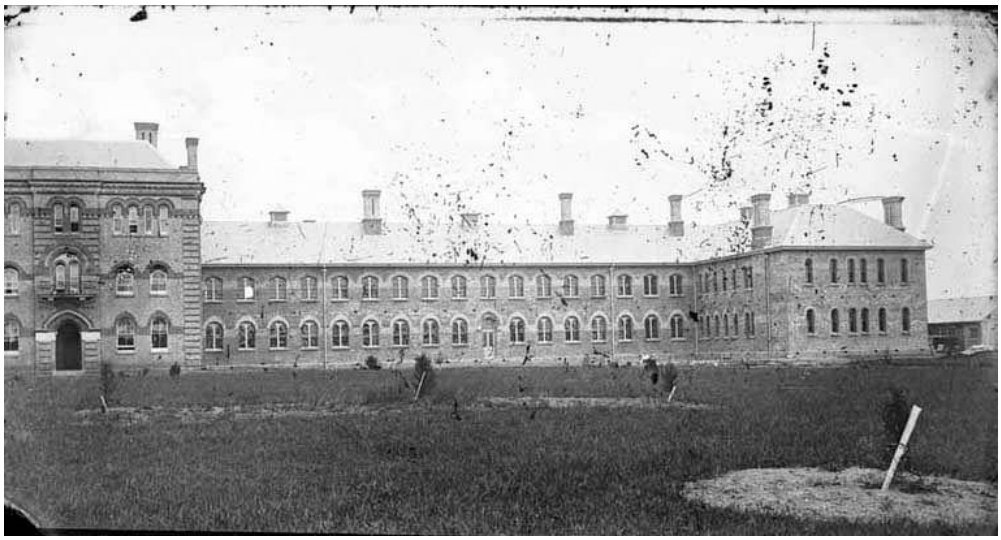
In 1864, Pollen and a Mr John Thomas (Star Mill owner on the North Road) jointly supplied bricks for the construction of the Whau Lunatic Asylum (later Oakley, then Carrington Hospital) which opened on March 8, 1867.[233] Mr Thomas had originally won the contract. However, he was under the impression that he and his men would be exempt from all militia service during the term of the contract.[234] Thomas and his men were, nevertheless, sent to the front during the build and consequently the contract was unable to be completed within the agreed timeframe.[235] The contract had thus fallen through by late 1864 and Pollen fulfilled it with his own bricks.[236] Thomas presented a petition to the Auckland Provincial Council the following year in regard to this matter.[237] Unfortunately, he died on 5 April, 1865 before learning of the final decision.[238]Although it appears the Provincial Council recommended a sum of money be invested in trust for the benefit of the widow and her children, it is uncertain as to whether this was ever undertaken.[239]


WANTED, Two Men as Labourers in a Brickyard.
Apply at the Whao, or to D. POLLEN.

[227] *New Lynn Reserves Management Plan 2004* (PDF) Waitakere City Council. Sourced online at http://www.waitakere.govt.nz/Cnlser/pbr/plans/pdf/newlynn/part1-newlynn.pdf.
[228] Timespanner: A journey through Avondale, Auckland and New Zealand. Sourced online at http://timespanner.blogspot.co.nz/2008/10/daniel-pollen-of-whau-flat.html.
[229] Ibid.
[230] Ibid.
[231] *Daily Southern Cross,* 21 November, 1864, p5.
[232] Ibid.
[233] *New Zealander,* 1 December, 1865, p3.
[234] *New Zealand Herald,* 22 March, 1865, p4.
[235] *New Zealand Herald,* 1 March, 1865.
[236] *Daily Southern Cross,* 28 October, 1864, p4.
[237] *Daily Southern Cross,* 1 March, 1865, p6;
[238] *Daily Southern Cross,* 6 April, 1865.
[239] *New Zealander,* 13 April, 1865.

New Zealander, 18 April 1864; 2 &3 February, 1865, p1

The *New Zealander* stated that *'at this present time it is the largest brick building in the colony, and so far as pretensions go, as a work of art, it is sui generis, second to none, either brick, stone or wood.'*[240] However, just over ten years later an extensive fire occurred at the asylum, which destroyed all of the left wing and a portion of the centre of the building.[241]



Showing the building of the Avondale Mental Asylum. Later to become Oakley Hospital, Carrington Hospital, Carrington Polytechnic and Unitec Institute of Technology. No known Copyright. 'Sir George Grey Special Collections, Auckland Libraries, 4 -RIC98'.

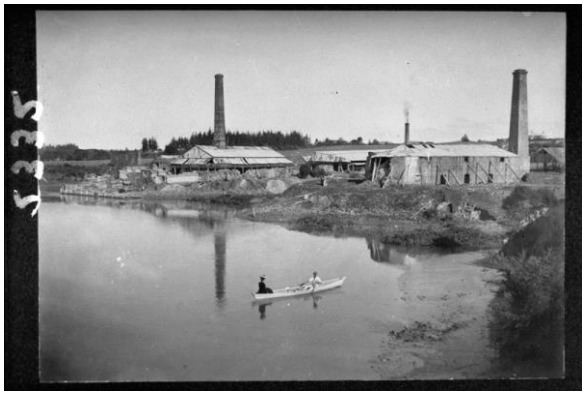
There is very little written about Pollen's Brickworks after this time, although it appears he continued producing bricks until at least 1871 as an advertisement announced the appointment of a Mr John Murray as sole agent for Dr Pollen's Bricks, Tiles and Drainpipes.[242] Daniel Pollen died at his residence on May 18, 1896, aged 82.[243]

'Brick path at Pollen's brickyard' January 1965
View of remains of a brick path on the foreshore of a channel off the Whau River at the site of an old brickyard.
Diamond, John Thomas, 1912-2001 (photographer), J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

[240] *New Zealand Herald,* 1 March, 1865.
[241] *Wanganui Herald,* 21 September, 1877.
[242] *Daily Southern Cross,* 18 August, 1871, p1.
[243] *Auckland Star,* 18 May, 1896, p4.

Malam's Brickyard

John Malam was born on May 10th, 1817 at Market Rasen, Lincolnshire, England. He arrived in Auckland when he was approximately 37 years old aboard the ship Nabob in 1854.[244] Malam worked at Nash's Brickyard for a time on the site of the Ponsonby Reservoir[245] and by 1860-1861 he was listed on the Jury list as a brick maker at the Whau.[246] At that time, he was employed by Dr Pollen to assist Mr Dick Ringrose at Pollen's brickworks on the banks of the Whau River. On the 1st December 1861, Malam purchased 10 acres of land from Bull and Reading (within Lot 40 Parish of Waikumete) on the western bank of the Whau opposite Daniel Pollen and there he established his own brickworks.[247] The remaining 100 acres surrounding Malam's property was purchased by Laurie Brothers on 1 May 1862, who established a brickwork immediately to the south of Malam.[248] The photo below shows the two brickworks with Malam's old kiln (right) and Laurie's kiln (left).



'Malam's old kiln and Laurie's kiln, Whau River'
A man and woman are in a rowing boat just offshore from Laurie's brickyard on the Whau River. Miss Laurie is in the boat. View of brickworks' buildings including kilns and chimneys. Laurie's kiln is on the left with John Malam's kiln on the right.
Spearpoint, Charles Thomas, 1873-1953 (photographer), c 1900, J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

'Malam home in Hepburn Road, Glendene,' January 1964.
View across un-mown paddock to a house of plastered brick construction. The building has a ridged hip corrugated iron roof, two brick chimneys and four-light double-hung sash windows. There are several women standing in the garden beside the post and wire fence.

[244] Headstone inscription, Waikumete Cemetery, Auckland – New Zealand Anglican Block C, Section 7, Plot 1.
[245] Timespanner: A Journey through Avondale, Auckland and New Zealand. Sourced online at http://timespanner.blogspot.co.nz/2009/01/avondales-riverside-brickmakers.html.
[246] *Daily Southern Cross,* 7 February, 1860, p 4.
[247] Deeds Index 7a/54.
[248] Ibid.

Diamond, John Thomas, 1912-2001 (photographer), J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

Very little is known about Malam's brickworks during his first decade in business. However, in the *Daily Southern Cross* of Wednesday April 3, 1872, an article of complaint was lodged with the Auckland Borough Council by Messrs Brogden – who angrily portrayed the brickmakers of Auckland (including Malam) as extortionists and swindlers.

It not unfrequently happens that those who wish to drive hard bargains quite over-reach themselves. In trying to make a big haul, to "do the thing handsomely," they defeat the object they have in view. A case of this kind has lately occurred with the Auckland brickmakers. Several months ago bricks were being sold in Auckland at a price per thousand which left a handsome profit to the makers of them. But the works on the Auckland and Waikato railway were resumed; and it was considered that, as the Messrs. Brogden would require a very large number of bricks to build the walls and roof of the tunnel through the Domain, and that firm being strangers in the place, a fine chance was presented of getting a "big" price for the bricks required for that and other works along the railway line. On the representatives of this firm applying for a list of prices, &c, they were surprised to find the extraordinary increase of price which had taken place, although no extensive buildings in brick were being erected in Auckland or the neighbourhood. It has frequently been asserted that the firm are regardless of the expense incurred, so long as the works are conducted under the percentage agreement, but such is a mistake. When they saw the extraordinary manner in which they were to be "done" in regard to the bricks; they hesitated concluding a contract. The staff of engineers which the Messrs. Brogden employ are experienced men – men who have laboured at their profession under many foreign climes – and who are not likely to be readily deceived as to the cost of the production, under any circumstances, of any number of bricks. They knew that to construct and erect the necessary brick-making machinery, and thus produce their own bricks, they could be made a very much less cost than the price asked, and it was at first intended to pursue this course. On more mature reflection it was considered that such a step might be looked upon as too great an interference with local trade. They thereupon ascertained the cost of obtaining the requisite quantity of dressed scoria stones for the sides of the tunnel, and found that it would be less than the extraordinary price which was being asked for the bricks. This course was approved of by the Resident Engineer, and instead of the whole tunnel being built in brickwork, only the roof will be so built. The result will be that barely one-third of the number of bricks will be used in the construction of the tunnel that would have been moderated. It is such attempts at extortion that cause contracts for materials and plant to go elsewhere, and thus an injury is done to the trade and prosperity of the city through the greed of the few.

John Malam, James Archibald, James Hepburn, William Sloan, Duncan Hepburn, Boswell, Archibald Hepburn, Alexander Hepburn and Thomas J Murray responded to these accusations one week later.

What are the facts? – the rise in the price of bricks is solely caused by the rise in the price of coal: the Bay of Islands, or Kawa Kawa mine being flooded out, and Newcastle coal (being 8s, per ton extra) having to be now consumed by brickmakers instead. The comparative small order for bricks which would be required for the tunnel could not, in the least, affect the price of them, bricks never having been dead stock in Auckland. We deny that we were ever asked by the agents of Brogden & Co, at what rate we would be prepared to sell or deliver bricks. We have been waiting for tenders to be invited; but, instead of a tender, we find a libellous and untruthful article in the Southern Cross of the 3rd inst. As Messrs. Brogden & Co. are paid ten per cent. By the Government on all expenditure, their agents are not likely to have been so nice about the price of bricks. But it is possible that there is more to be had from scoria. We, the undersigned brickmakers of the Whau, are prepared to deliver, at the boat in Mechanics' Bay, from one million to one and a half at fifty shillings per thousand. – We are, sir, your obedient servants.

John Malam was very committed to community affairs in the Whau district. For instance, in early October 1872, he was elected to the committee of the New Zealand Agricultural

Society.[249] He was also one of four stewards at the Henderson's Mill Boxing Day Races in late 1873.[250] In January 1882, he was elected to the Henderson's Mill District Committee.[251]

In February 1878, the *New Zealand Herald* advertised for sale: 'At Mr Malam's, Whau, 300,000 Bricks – first class – at 30s per thousand, and Lime at 8d per bushel. All guaranteed first-class at the Kiln.'[252] In several 1881-1882 *New Zealand Herald* advertisements, J Wilson & Co (Wilson's hydraulic lime), while advertising their lime cement, noted that they were sole agents for Malam's Bricks.[253] By 1896 Malam's, Laurie's and Melbourne Red bricks were advertised for sale by J. J. Craig, Arcade, Fort Street.[254] Later that same year, Malam with two other brickmakers jointly advertised '*We, the undersigned BRICKMAKERS beg to notify our customers that the price of Bricks at our yards will be £1 12s 6d, after MONDAY, June 15, 1896. LAURIE BROS, JOHN MALAM, ALEX W HEPBURN.*'[255]

John Malam died at his home at Waikumete on 9 July 1899 in his 83rd year.[256] The brickworks were advertised for sale or lease in 1902: *'For sale or lease the well-known brickyard of the late Mr John Malam, situated on the Whau Creek. Good steam brickmaking machinery, equal to new; Hoffmann's kiln; sheds, etc.; all in working order. John Bollard. Trustee*.'[257] In 1906, Malam's Brickyard, comprising 10 acres of land, Lot 40, Parish of Waikumete was advertised for sale by auction.[258] *"The well-known brickyard is situated on a water creek, up which vessels come to take the bricks on board. The quality of bricks manufactured here is unequalled on the market."*[259] The land was eventually sold to the Laurie Brothers who operated the neighbouring brickworks.

Laurie Brothers Brickworks

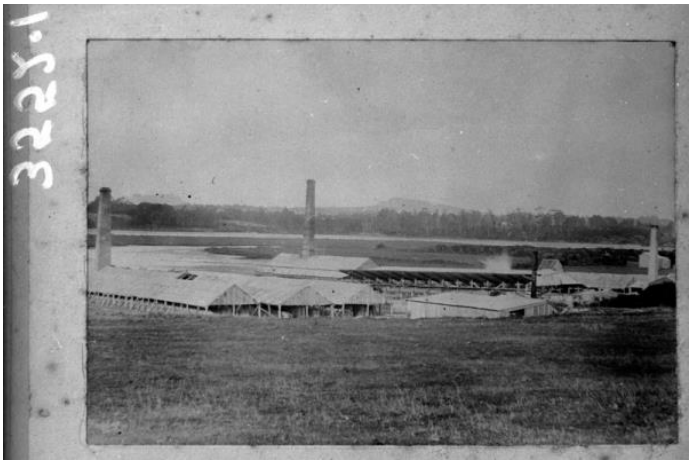
The Laurie family were originally from Paisley, Scotland. In 1842, Mary Laurie (1799-1878), a widow, and her five children boarded the ship *Duchess of Argyle* travelling to New Zealand for a new life. The five children were Matthew (1816-1868), Janet (1818-1902), William (1820-1880), James (1825-1867) and Robert (1829-1899)[260] The ship left Greenock, Scotland on 9 June 1842 and arrived in Auckland on 9 October 1842.[261] (For an unknown reason, James Laurie does not appear on the passenger list).

---

[249] *Daily Southern Cross,* 5 October, 1872, p3.
[250] *New Zealand Herald,* 22 December, 1873, p1.
[251] *Auckland Star,* 28 January, 1882, p2.
[252] *New Zealand Herald,* 12 February, 1878, p3.
[253] *New Zealand Herald,* 6 October 1881, p8; *New Zealand Herald,* 23 March, 1882, p3; *New Zealand Herald,* 3 June, 1882, p 2.
[254] *New Zealand Herald,* 7 February, 1896, p7.
[255] *Auckland Star,* 13 June 1896, p8.
[256] *New Zealand Herald,* 11 July 1899, p1.
[257] *New Zealand Herald,* 9 January, 1902, p1.
[258] *New Zealand Herald,* 14 April, 1906, p10.
[259] Ibid.
[260] *Thames Advertiser,* 30 August, 1899, p4; and Genealogy website: http://freepages.genealogy.rootsweb.ancestry.com/~ourstuff/DuchessofArgyle.htm.
[261] Ibid.

One year after arrival in Auckland, the oldest son Matthew announced his entry into the world of brickmaking.[262] He was 'ready to supply persons desirous of securing a substantial building on the following cheap terms' by landing superior bricks in any bay, from Freeman's to Judge's Bay, by the quantity at 25s per thousand, and 30s per single thousand.'[263]

In 1846 the family purchased land on the south side of Karangahape Road between the cemetery and France Street and it was here the Laurie Brothers set up their first brickmaking business.[264] The jury list for 1854 lists Matthew, William, James and Robert as brickmakers on Karangahape Road (although their surname is spelt as 'Lawrie.'[265] The Laurie brickmaking factory was established where George Courts department store was later built.[266] In 1857, the Laurie Brothers advertised the sale of a horse power pug mill and brickmaking machine under the name *Auckland Steam Brick and Tile Works.*[267] By 1858, they were advertising the sale of 'good lime, at one shilling and sixpence per bushel but the name had changed to *Auckland Steam Brick Works*.'[268] In May, 1859, the Laurie Brothers advertised for carpenter, bricklayer and plasterer tenders for the erection of a brick building.[269] In September of the same year, they were advertising for two brick 'bearer offs.'[270] (Bearer offs carried the newly-moulded bricks away from the brickmaking machine or moulding table). However, by 1861, the brothers were selling the six-horse-power steam engine, brick machine and the brick buildings they stood in.[271] The 100 valuable building allotments they owned on Karangahape Road were also put up for sale on Tuesday 13th May, 1862.[272]



The brothers then set about to purchase 100 acres of land on the Whau River (surrounding John Malam's brickyard on three sides – the present-day Hepburn Road site).[273] In November 1862, they advertised tenders for the construction of three cottages at the Whau: *Tenders for building three cottages at the Whau, will be received*

[262] *Daily Southern Cross,* 23 December, 1843, p1. Note: the newspaper stated a Matthew 'Lawrie' – not Laurie.
[263] Ibid.
[264] Genealogy website: http://freepages.genealogy.rootsweb.ancestry.com/~ourstuff/DuchessofArgyle.htm.
[265] *New Zealander,* 4 February, 1854, p4.
[266] Matthew Gray, 'Maori Unrest Sees Family Head West' Western Leader, 2 July 2013, p6.
[267] *Daily Southern Cross,* 10 November, 1857, p1.
[268] *Daily Southern Cross*, 14 September, 1858, p4.
[269] *Daily Southern Cross,* 3 May, 1859, p2.
[270] *Daily Southern Cross,* 27 September, 1859, p3.
[271] *Daily Southern Cross,* 10 September, 1861, p3.
[272] Record ID NZ Map 4495-2, 1862. Sir George Grey Special Collections, Auckland Libraries.
[273] *Timespanner: A Journey Through Avondale, Auckland and New Zealand history*. Sourced online at http://timespanner.blogspot.co.nz/2011/02/laurie-brothers-of-newton-and-west.html.

until 4 o'clock this day, by Messrs. Laurie Brothers, Karangahape Road.[274]

'View of Laurie's brickyard, Whau River' – showing buildings and chimneys, with the river in the background.

This photograph shows the machine shop and drying sheds for Laurie's brickworks. The smokestacks from left to right are for Malam's kiln, for Laurie's kiln, for the boiler for the engine driving the machinery in the brickmaking plant and for an oblong kiln. The centre drying sheds were built mainly from teak and timber from the vessel 'Wolverine' beached at Devonport. These sheds were designed and patented by R. O. Clark, senior, and if necessary the roof shutters were hinged to open right up as they were centrally fastened on a rod.

Source: Dick Malam in Diamond Photographic Collection notes, J. T. Diamond Collection, Research Papers, No. 226, p 69; and from notes in original negative envelope.) West Auckland Research Centre, Waitakere Central Library.

Laurie Brothers later purchased the Malam works and production continued until 1927 when the brickworks, along with 27.5 acres were advertised for tender.[275]

> *LAURIE BROS BRICKWORKS. Comprising 27 ½ acres of land, freehold, containing the finest clay in the Dominion; 1 plastic machine, winding gear, 30 h.p. multitubular boiler, 15 h.p. engine, patent kiln, capacity 120,000 bricks; Up-draught Scotch Kiln, capacity 40,000 bricks; Chimney stack, for kiln, 122ft high; Chimney for boiler 40ft; 6-roomed brick house, plastered in and outside; 4-roomed wooden house and 2 shacks on the property; brickyard situated on Whau River, at the end of Hepburn Rd, Glen Eden. EASY TERMS.*

With no tenders coming forward, the brickyard and brickmaking plant was offered as 'a home for the unemployed of Auckland' in April 1928.[276] The brickworks directors asked the Auckland City Council Works Committee for a royalty of 2s 6d a thousand for all bricks turned out from the yard in return.[277] However, the Council declined to negotiate the purchase.[278] In 1932 the 112-foot-high chimney stack was destroyed.[279] This was effected by removing a portion of the base and blocking the gap with wood. The wood was then saturated with oil and set alight. The stack fell in the direction desired twenty minutes later.[280]

'Laurie's brickworks on the Whau River'
View of Laurie's brickyard showing chimney and buildings, including kilns and drying sheds. There are two scows at the landing on the Whau River. Spearpoint, Charles Thomas, 1873-1953 (photographer) J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

[274] *Daily Southern Cross,* 5 November, 1862, p1.
[275] *New Zealand Herald,* 27 October, 1927, p3.
[276] *New Zealand Herald,* 13 April, 1928, p12.
[277] Ibid.
[278] *New Zealand Herald,* 16 May, 1928, p10.
[279] *New Zealand Herald,* 21 September, 1932, p10.
[280] Ibid.

J. Archibald Brickworks

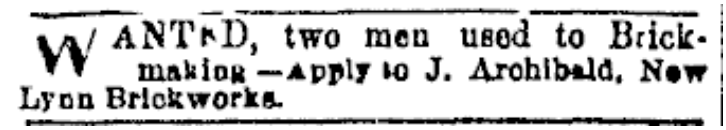
David Alexander Archibald was born in Derry, Ireland in 1816. He travelled to Sydney in 1838 and by 1841 had made the move to New Zealand with his wife Margaret and son James (1837-1910) aboard the *Chelydra*.[281] David set himself up as a sawyer, first in West Queen Street by 1847, then Freeman's Bay by 1850.[282] In the Jury List for 1860-61, David was listed as a timber merchant on Franklin Road.[283] In that same year, he was also listed among the 'hundred of Onehunga' who took out for the following year a depasturing licence.[284]

David Archibald died in 1860 and that same year his son James married Agnes Hepburn.[285] After their marriage the couple took up residence in a house in Glendene which was owned by Agnes' father. James and Agnes had at least eight children – David (1861-1926), Catherine (1863 -?), James Alexander (1864 -1943), John (1866-1948), Alexander Ernest (1869-1955), Mary Ethel (1871-1934), Annie Agnes (1874-1910) and Frank Herbert (1878-1951).[286]

By 1865, James Archibald and his father-in-law Alexander Hepburn had established Hepburn's Brickworks on the Whau River, at the end of Hepburn Road. But by 1871, James had set up his own brickworks at the end of Archibald Road. Archibald and Hepburn worked together on roading contracts and other work for Waitemata County up until Hepburn's death in 1883.[287]

From 1872, James joined the Hepburn's and other Whau River brickmakers in meetings to set a standard price for their bricks, in the wake of the expected rise in demand for their product by the Brogden Company who were working on the main trunk railway. (See the full story under 'Malam's Brickyard.')

In 1883, James Archibald set up another small brickyard on railway reserve land in New Lynn. However, this upset many New Lynn residents who unsuccessfully set up a petition protesting against the lease of Government land for a brick kiln.[288] Archibald advertised


WANTED, two men used to Brick-making—Apply to J. Archibald, New Lynn Brickworks.

[281] Lisa Truttman, 'From Derry to the Whau – the Archibald family of brick and pipe makers' in *The Avondale Historical Journal,* Official Publication of the Avondale-Waterview Historical Society Incorporated, Volume 15, Issue 89, May-June 2016, pp4-8; *New Zealand Herald,* 10 and 11 October, 1892.
[282] Ibid.
[283] *Daily Southern Cross,* 7 February 1860, p4.
[284] *New Zealander,* 21 January, 1860, p6. Depasturing is to put an animal to graze on pasture. A depasturing license was granted to every such owner or occupier who applied for the same to the Board on or before the first day of December in each year, provided that he furnished to the Board a return showing the description and area of land owned or occupied by him, and the number of acres (if any) unenclosed or available for pasture, and the number, description, and brands of all cattle depastured or intended to be depastured by him within the hundred: and any person depasturing cattle upon a hundred who failed to make such a return as aforesaid, or making a false return, was liable to a penalty not exceeding twenty pounds.
[285] Lisa Truttman, "From Derry to the Whau."
[286] Saint Ninians of Avondale, James and Agnes Archibald Historical Information. Sourced online at https://sites.google.com/site/stniniansofavondale/james-and-agnes-archibald.
[287] Ibid.
[288] *The Auckland Evening Star,* 20 July, 1882, p2.

immediately for two men to commence work there.[289] In 1886, Archibald was again advertising for two competent brick setters and burners.[290]

In 1889, however, all was not rosy for the brickmakers of the Whau River area as the following 'Brickmakers Complaint' letter to the editor portrays:

> *Sir: - As an old subscriber and on behalf of the brickmakers on the Whau River, I ask for space in your paper to enter a protest against this jobbery of getting Hunt's bricks specified for all public buildings that are erected in Auckland. There is no doubt that an inference, unfavourable to the architects, will be drawn from this system of specifying. It is well known that there are four brickyards on the south side of the Whau River, in the Waikomiti district – Messrs Malam, Laurie, Hepburn, and Archibald. They having been making bricks in the district nearly thirty years ago. Their bricks were used in public and private buildings many years before Hunt's came into existence. Take the asylum, for instance. When it was built, and the addition that was put up by Mr Jenkinson, large quantities of bricks were used. The late Mr Hepburn delivered to the contractor half-a-million to face the building with, and they are a monument to their sterling quality. They don't need to be plastered over to hide their defects. The architects and builders admit that the bricks are equally as good as Hunt's, or any others that are made. The specifying of the bricks should be left open, and let all that are in the brick trade get a chance to sell. It would be more satisfactory to the builders if they could get both quality and quantity and at cheaper rates. The brickmakers in the district are heavy ratepayers. Some of their rates go to relieve the destitute. They also pay the property tax, and when public buildings are going to be erected they have a perfect right to a share of the expenditure if they can get an opening to supply the material. – I am, &c., SUBSCRIBER.*[291]

Perhaps this struggle for work was one of the reasons James Archibald advertised his brickworks for sale by tender by the end of that year.

> *All that the residue of the term of lease for ten years from 20th July, 1882, of Allotments A and B, situated within the new Lynn Station Reserve, containing 3 acres 1 rood and 3 perches, more or less, and known as the New Lynn Brickyard; together with the machinery and appurtenances now on the said land, comprising Cornish boiler, 66lbs pressure, with centre fine, steam dome, horizontal engine, brick machine by Ralston, hauling-up gear, with two trucks, double line of tramway, cold water pump, with six overhead tanks, brick kiln, sheds, engine house, chimney.* [292]

From that point on, James mostly retired from brickmaking, leaving it up to his sons to carry on the business on the Kelston site (Archibald Road).

In 1903, the brothers purchased just over 5 acres of land at the end of Avondale Road, fronting the Whau River.[293] By 1910, the year their father died, this land had become known as the Archibald Pottery and Pipe Works.[294] Although the Archibald family retained the Kelston land until 1950, it appears it was no longer used for the family business. In Avondale, however, the Archibald Brothers began advertising for men to work in the new

[289] *Auckland Star,* 2 April, 1883, p3.
[290] *Auckland Star*, 23 December, 1886, p2.
[291] *New Zealand Herald,* 30 May, 1889, p3.
[292] *New Zealand Herald*, 19 December, 1889, p8.
[293] Lisa J Truttman, 'From Derry to the Whau – the Archibald family of brick and pipe makers' in *The Avondale Historical Journal,* Official Publication of the Avondale-Waterview Historical Society Incorporated, Volume 15, Issue 89, May-June 2016, pp4-8.
[294] Ibid. James Archibald died on 13 July, 1910 (gravestone inscription, St Ninians Cemetery, St Georges Road, Avondale).

brickworks, as these clippings from newspapers from 1910 onwards portray: *'Man for moulding and sticking for pipe works, also man for barrow work;'*[295] *'Strong lad wanted, for the brick works;'*[296] *'Junction sticker wanted for pipe works; permanent work.'*[297]

In November 1913, the Archibald Brothers wrote to the Auckland Harbour Board, requesting a licence to occupy two pieces of reclamation in front of their pipe and brick works on the Whau Creek.[298] This licence application was like those that had been issued to Carder Brothers and R. O. Clark Ltd.[299]

In 1915, James Alexander Archibald gave notice that he was leaving the partnership of 'Archibald Bros' and although the partnership was dissolved the remaining members of the firm continued under the 'Archibald Bros' name.[300] However, there is very little in the way of newspaper advertising after this time. The last newspaper article found relating to the Archibald Bros was dated 20 June 1930, in which it was stated that the caretaker of Archibald Bros pottery works, Avondale, died in Auckland Hospital several days after being hit by a car.[301] Mr James Murray, aged 78, had lived in a hut at the brickyard at the time of his death.[302]

'Archibald's Landing, Beaubank Road, Kelston'
View across water to reserve off Beaubank Road showing site of landing for old brickworks on Whau Creek, 1959.
Diamond, John Thomas, 1912-2001 (photographer), J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library

[295] *New Zealand Herald,* 1 October, 1910, p1.
[296] *Auckland Star,* 22 July, 1911, p1.
[297] *New Zealand Herald,* 22 April, 1912, p1.
[298] *Auckland Star,* 18 November, 1913, p7.
[299] Ibid.
[300] *New Zealand Herald,* 24 December, 1915, p4.
[301] *Auckland Star,* 20 June, 1930, p5.
[302] Ibid.

Hepburn's Brickworks

Alexander Hepburn was born in Inverness in 1803. He left Scotland for New Zealand in 1839, accompanied by his wife Catherine, his brother Duncan and Duncan's wife Isabella.[303] Both couples arrived in the Bay of Islands, New Zealand in May 1841, having spent some time in Sydney first. Alexander and Duncan were not lucky with early land claims dating back to 1844, but from the late 1840s were involved in the timber trade as sawyers.[304] Unfortunately, Duncan died in 1853, at the relatively young age of 43.[305] Alexander carried on the business, working from Freeman's Bay.[306] In 1854, Alexander gained a Crown grant of 88 acres of land beside the Whau River (the future site of Span Farm at the end of Hepburn Road, Glendene.)[307] Unfortunately, there is not much known about Hepburn's Brickworks. The little that is known is intertwined with the lives of other brickmakers of the Whau. However, it is known that two sons of Alexander and Catherine also became brickmakers – James (1841-1883) taking over his father's land at Waikumete and Duncan (1844-1917), who moved to Gisborne in 1870 and opened a brick works in Aberdeen Road in 1874. A daughter, Agnes (1839-1903), married James Archibald of the 'Archibald Brothers' brickmaking family.[308]

Alexander died at his residence at Waikumete on April 2, 1883, aged 80 years.[309] His son James, died several months later, at the age of 42.[310] After James' death, his widow, Elizabeth (nee Cantwell) set about to sell some of her late husband's bricks to the contractor of the new Costley Refuge at Epsom.[311] Although the contract had already specified the use of Hunt's Bricks only, Mrs Hepburn sent a portion of her own bricks to the building site. This caused a stir amongst contractors and others involved in the project. A meeting of the Hospital and Charitable Aid Committee was held on 20 May 1889 to discuss the issue.[312]

> *The Chairman said it had been reported that bricks other than those specified had already been used at the Refuge. He had at once sent Mr Strathern out, and he reported that such was the case, some thousands of bricks having been supplied by a Mrs Hepburn somewhere out Avondale way.*[313]

Mr Holland, the contractor, was surprised as he had distinctly told Mrs Hepburn not to send the bricks until he could get consent of the architect to use them. As soon as the contract was let however, Mrs Hepburn sent 6000 to the ground, and 50,000 more to Mechanic's

[303] Lisa Truttman, 'From Derry to the Whau – the Archibald family of brick and pipe makers' in *The Avondale Historical Journal,* Official Publication of the Avondale-Waterview Historical Society Incorporated, Volume 15, Issue 89, May-June 2016, pp4-8.
[304] Ibid.
[305] *New Zealander,* 30 July, 1853.
[306] Lisa Truttman, 'From Derry to the Whau,' 2016.
[307] Ibid.
[308] Ibid,
[309] *Auckland Star,* 3 April, 1883, p2.
[310] *New Zealand Herald,* 16 July, 1883, p4.
[311] *Auckland Star,* 21 May, 1889, p2; *New Zealand Herald,* 21 May, 1889, p6; *New Zealand Herald,* 1 June, 1889, p3.
[312] Ibid.
[313] Ibid.

Bay.[314] She also sent him the bill, but Mr Holland swiftly told her to take them away again! Mr Dignan believed that although the bricks had been pushed upon Mr Holland, he should be compelled to use Hunt's bricks, and no other, according to the specifications. Mr Swales suggested that *'if the bricks were as good as the others, why not let Mr Holland use them, and thus assist the widow who had sent them.'*[315]

James Heron, the next lowest tenderer, while stating that Mrs Hepburn's bricks were 'fairly good, and a great deal better than others I have seen in the market' maintained that no bricks in Auckland compared with Hunt's, and he did not feel the architects would be doing justice to their clients if they did not specify the best procurable materials for all their bricks.[316]

When Mrs Hepburn was approached by Holland on Queen Street to discuss the matter, she replied: "I knew you were getting a lot of Hunt's bricks on the ground, and I was over-anxious to do a little business as soon as I could, not having done any for so long a time.'[317]

In March 1895, Elizabeth Hepburn advertised Allotment 177, containing 88 acres, with buildings and all improvements for absolute sale by auction.[318] However, by the end of that month, a Mrs Hale had made an application to the Civil Court (Elizabeth Hepburn v. Anne Hale) for an injunction, restraining Elizabeth from proceeding with the sale advertised of 'Mr Hepburn's farm, Waikomiti'. The injunction was granted, pending the trial and decision of the action.[319] No further information has been acquired regarding the reason for the injunction nor regarding the outcome. Somewhat more confusing was a second case brought forward in 1908 – Elizabeth Hepburn and James Hepburn v. Carlo Dujany – an action for possession of land, £3 5s rent, and £100 compensation.[320] Dujany had two years previously advertised in the *Auckland Star*:

> *Wanted to Let or Lease, Farm 120 acres, with good House, for 2 or 3 years, near Auckland, and near a school – Apply Carl Dujany, 78 John Street – Ponsonby.*[321]

It is highly possible that Dujany had, at some time, leased the land from Elizabeth Hepburn. Dr Bamford, who appeared for the defendant, decreed that 'negotiations were practically complete for a settlement, and it was therefore allowed to stand down'.[322]

---

[314] Ibid.
[315] Ibid.
[316] *New Zealand Herald,* 1 June, 1889, p3.
[317] *New Zealand Herald,* 3 June, 1889, p3.
[318] *New Zealand Herald,* 1 March, 1895, p8.
[319] *New Zealand Herald,* 30 March, 1895, p4.
[320] *New Zealand Herald,* 20 November, 1908, p7.
[321] *Auckland Star,* 3 July, 1906, p1.
[322] *New Zealand Herald,* 17 December, 1908, p4.

'Hepburn's Kiln, Wairau Inlet' 1960
'View of kiln and brick chimney at the site of an old brickworks on the Wairau Creek, Glendene. Just below the kiln is a later weatherboard home'.
Diamond, John Thomas, 1912-2001 (photographer), J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

Burke's Brickyard

From the mid-1860s to the early 1870s, Charles Burke (a farmer and later tailor) progressively purchased 19 acres of land adjoining the Avondale Racecourse - facing the Avondale river with deep river frontage (being Allotment 12, Parish of Titirangi, County of Eden.)[323] It is known that Burke carried out farming on a portion of the property (as an editorial regarding a fire at a house owned by Mr Burke at the Whau remarked that his children milked the cows there every day).[324] However, it is not known whether Burke had always intended to build a brickyard on his land. Perhaps knowing that good Pleistocene clay could be found along the river and armed with the knowledge that other brickmakers along the Whau were doing good business had enticed him to start his own brickyard or to lease the land out to others. Simon Bickler suggests a Hoffman kiln was probably built on the site in 1871-72 and was run over the next 4 years at least.[325]

[323] *New Zealand Herald,* 15 March, 1911, p14; Timespanner: A Journey through Avondale, Auckland and New Zealand. Sourced online at http://timespanner.blogspot.co.nz/2011/08/burkes-brickyard-on-whau.html.
[324] Refer footnote 331 below.
[325] Simon H Bickler, NZ Brick Database: A Research Resource for NZ Historical Archaeologists. Sourced online at http://bickler.co.nz/bricks/manufacturers.php?manu=19.

By 1874, Burke was in partnership with Neil Campbell, Saunders, and Hyland at 'Burke's Brickyard'.[326] However, an action had been taken out against the four men by a Mr Thomas Murray. Murray had alleged there was a management contract in place to make, burn, and deliver bricks at 16s per thousand on a piece of ground at Burke's Brickyard.[327] One half of the money was to be paid when the bricks were shaped and on the 'hacks' and the remainder when the bricks were burnt.[328] Delivery was to be made in boats or drays taken alongside the premises. The contention between the parties was entirely on matters of detail.[329] Judgment was for the plaintiff, Murray, for £26 12s 3d.[330] It appears that most of the defendants, including Burke, were tailors by trade, with the brickworks being leased out to brickmakers. A poem was attached to the end of the case judgment which is rather amusing and unusual:[331]

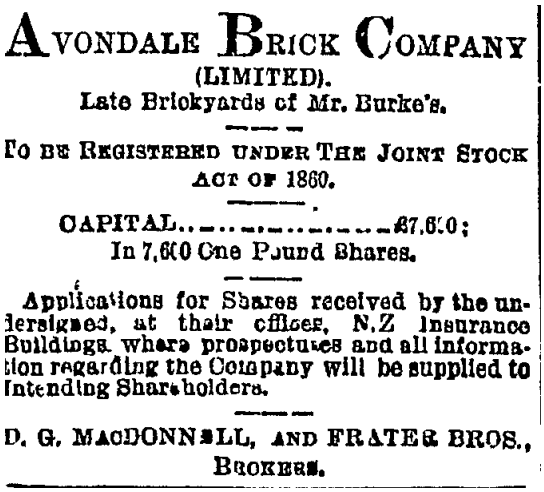
> These makers of breeks
> Became makers of bricks,
> And toiled day by day
> Between broadcloth and clay,
> Though the action they lost,
> They were not passion-crossed,
> But bore it like men –
> With amen, and amen.

Over the next five years, very little can be gleaned from the day -to-day toils at the brickyard. However, in 1879, Charles Burke advertised the sale *of '10,000 first-class hard-burnt bricks; price, 42s in the yard.'*[332]

March 1881, was an extremely bad month for Charles Burke. On March 14, Burke's four-roomed house on the Whau was destroyed by fire.[333] The newspaper editorial stated the house was unoccupied at the time of the occurrence. However, Mr Burke had been sending his son and daughter there every afternoon to milk the cows.[334] A report stated the siblings had lit a fire for cooking purposes and had forgotten to put it out when leaving. It was not ascertained if that was the reason for the fire, nor whether the house was insured.[335] On March 31, Margaret, second eldest daughter of Charles Burke, died at her parent's home on New North Road (late of the Whau), aged 20 years.[336]

---

[326] *Auckland Star, 11 May, 1874, p2.*
[327] Ibid.
[328] *New Zealand Herald,* 12 May, 1874, p3.
[329] Ibid.
[330] *Auckland Star,* 12 May, 1874, p2.
[331] Ibid.
[332] *Auckland Star,* 19 July, 1879, p3.
[333] *Auckland Star,* 15 March, 1881, p3; *New Zealand Herald,* 16 March, 1881, p4.
[334] Ibid.
[335] Ibid.
[336] *Auckland Star,* 1 April, 1881, p2.



AVONDALE BRICK COMPANY
(LIMITED).
Late Brickyards of Mr. Burke's.

TO BE REGISTERED UNDER THE JOINT STOCK ACT OF 1860.

CAPITAL.....£7,600;
In 7,600 One Pound Shares.

Applications for Shares received by the undersigned, at their offices, N.Z Insurance Buildings, where prospectuses and all information regarding the Company will be supplied to Intending Shareholders.

D. G. MACDONNELL, AND FRATER BROS.,
BROKERS.

The following year, 1882, the *Auckland Star* advertised applications for shares of the Avondale Brick Company Ltd (late Brickyards of Mr Burke's).[337] Things become sketchy at this point with the land presumably being leased to several brickmakers in a relatively short time span. For example, in February 1885, 'a brickyard, to lease at the Whau, and 5 acres of land, rent, £50 per annum' could possibly have referred to Burke's brickyard.[338] In February 1887, the *New Zealand Herald* announced 'the Messrs Kane had commenced working the brick-fields of Mr Burke.'[339] Ten years later, in 1897, Charles Burke was advertising the lease of paddocks for grazing in Avondale.[340]

Lisa Truttman gives reference to the text of a January 1902 lease between Burke and Walter W. Daw with reference to a kiln and buildings. This lease might have been given in earnest anticipation of Charles Burke's death as he died on 6 January 1902.[341]

> *"The Lessee may use the said demised property in the production of bricks, pottery and other ware … shall and will keep proper accounts of bricks, pottery and other ware made … or whether any earth part is used … shall not nor will in digging for or excavating brick earth or sand do any needless damage to the said demised lands or premises … shall not nor will sell or remove from the hearby demised premised any earth clay or sand in an unmanufactured state …"*

Truttman states that until 1904, Moss Davis (who held a lease over the eastern half of Burke's farm for the Jockey Club) was bound to allow "right-of-way and passage at all times during the currency of this lease by day or by night on foot or on horseback and with or without horses, carts and carriages laden or unladen and other animals and vehicles through over and along the piece of land…"[342] Access to this land was via today's Wingate Street.[343]

Charles' wife, Margaret, died on March 28, 1900, at her residence in Princes Street, Auckland.[344] Charles died at the same residence, Auckland (late of Avondale) on January 6, 1902.[345] His estate, certified by the Secretary for Stamps, Wellington, was worth £1150.[346] The well-known brickyard was put up for lease or purchase in May 1903;[347] 1909,[348] and

[337] *Auckland Star,* 4 November, 1882, p3.
[338] *Auckland Star,* 6 February, 1885, p3.
[339] *New Zealand Herald,* 26 February, 1887, p4.
[340] *Auckland Star,* 24 November, 1897, p8.
[341] Timespanner: A journey through Avondale, Auckland and New Zealand history. 'Burke's Brickyard on the Whau.' Sourced online at http://timespanner.blogspot.co.nz/2011/08/burkes-brickyard-on-whau.html; *New Zealand Herald,* 7 January, 1902, p1.
[342] Ibid.
[343] Ibid.
[344] *New Zealand Herald,* 29 March, 1900, p1.
[345] *New Zealand Herald,* 7 January, 1902, p1.
[346] *Hawera and Normanby Star,* 5 November, 1902, p2.
[347] *New Zealand Herald,* 30 May, 1903, p8.

again in 1911.[349] The land was advertised as the 'best brick clay' with a large Hoffman kiln and machine shed.[350]

Panorama of site of Burke's brickyard.
From the back of the racecourse at Avondale, view of old brickyard site on the Whau River.
Diamond, John Thomas, 1912-2001, September 1968, (photographer), J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

Auckland Brick & Tile Company

The Auckland Brick & Tile Company Ltd was formed on 5 September 1883, as a limited liability company.[351] The company's original intention was to build a pottery alongside the Whau River at Te Atatu as the notice below from the Companies Office shows:[352]

> The purchase for One Thousand Pounds from Mr Robert Charles Greenwood of Fifty Acres of land situated in the Parish of Waipareira and being part of Lot number Twenty … And all the machinery plant and utensils now owned by Mr Robert Charles Greenwood as follows namely: One Button's patent dry brick machine moulded spur wheel for driving cross-head duplicate one first motion pinion duplicate one second motion pinion duplicate one duplicate crank pin finished complete eighteen yards of four fly hose.

This land had been part of a larger block which was subdivided with the aforesaid 50 acres purchased from Mr Greenwood, Secretary of the Auckland Brick & Tile Company.[353] The

---

[348] *Auckland Star,* 1 November, 1909, p2.
[349] *New Zealand Herald,* 5 April, 1911, p14.
[350] *Auckland Star,* 15 March, 1911, p12.
[351] Companies Office file, Auckland Brick & Tile Company Limited, National Archives, Auckland, BADZ 5181 428 2445, Memorandum of Association and Articles of Association, p3. Cited from Best, S B Clough R E, 8 March 2000 The Auckland Brick & Tile Co. Site, Whau Creek, Te Atatu, Auckland (R11/1724): Section 18 Investigation, Unpublished report prepared for Waitakere Properties.
[352] Ibid.
[353] Land Information New Zealand, Auckland, R10, p940. Cited from Best, S B Clough R E, 8 March 2000.

purchased land was originally part of a Crown grant of 123 acres made to Samuel Elliot in 1854. It was subsequently sold to Thomas Henderson and Thomas McFarlane in 1882.[354] The land was well situated for a pottery works as the clay was accessible, wares could be easily transported to the Auckland market, and by the 1880s the banks of the Whau were a well-established area of pottery manufacturing.[355] The area was also well connected to Auckland via the newly completed Auckland-Kaipara railway as well as sea and road transport.

The purchase of the 50 acres did not occur for some months as it appears circumstances diverted the company's attention to Hobsonville first. Hobsonville potter Thomas Cater had been declared bankrupt on the 15 August 1883 and his well-established pottery was sold to the newly-formed company to pay off his debts. The pottery was bought for £1250 and included in this price were '40 acres of land, buildings thereon and machinery fittings and gear and tools … and all other the [sic] appliances.'[356]

Hobsonville, like Te Atatu, had ample supplies of clay and access to markets over water. Pottery had been produced at Hobsonville from the 1860s and the success of R O Clarke's pottery must have given the Auckland Brick & Tile Company cause for optimism.[357] The purchase of the Hobsonville pottery was financed by James Black, shareholder of the Brick & Tile Company.[358]

In May and June of 1884, Mr Greenwood advertised thrice in *the Auckland Star* - a call of ten shillings per share, payable at the Company's office at 129 Queen Street, on June 24.[359]

THE AUCKLAND BRICK AND TILE COMPANY (LIMITED).

A CALL (the third) of TEN SHILLINGS per Share has this day been made, payable at the Company's Office, 129, Queen-street, on 24TH JUNE.

R. C. GREENWOOD, Secretary.

Auckland, 14th May, 1884.

On 15 November 1884, the S.S. Rotomahana arrived at the Patent Double-Press Brick Works of the Auckland Brick & Tile Company, with a large party of nearly 100 gentlemen on board. Among them were shareholders of the company, and the leading engineers, architects, builders, and contractors of the city. The object of the visit was to witness a trial run of the engines and machinery of the works, and to inspect them.[360] (Although the pottery works at Te Atatu was at that time well-established, the company did not actually purchase the 50 acres until December 1884.)[361] The steamer started shortly

[354] Land Information New Zealand, Auckland, 9A, p373. Cited from Best, S B Clough R E, 8 March 2000.
[355] Donald Harry Goodall "Manufacturing in the Western Districts of Auckland," unpublished thesis, University of Auckland, 1965, p64. Cited from Best, S B Clough R E, 8 March 2000.
[356] Land Information New Zealand, Auckland, R5, p759. Cited from Best, S B Clough R E, 8 March 2000.
[357] Dick Scott, *Fire on the Clay: The Pakeha Comes to West Auckland*, (Southern Cross books, Auckland, 1979).
[358] Black owned several plots of land around Auckland and he later used these as security to raise loans for the company. Land Information New Zealand, Auckland, R5, p759 and R15, p748. Cited from Best, S B Clough R E, 8 March 2000.
[359] *The Auckland Star,* 23 June, 1884, p3.
[360] *New Zealand Herald,* 15 November, 1884, p6.
[361] Companies Office file, Auckland Brick & Tile Company Limited, National Archives, Auckland, BADZ 5181 428 2445, Letter to Registrar of Public Companies, 2 July 1884. Cited from Best, S B Clough R E, 8 March 2000.

after ten o'clock from the Queen Street wharf and detoured to pass the Hobsonville works of the company. At approximately 2:30 pm the Rotomahana ran up alongside the Company's wharf opposite the Brick and Tile Works, on the left bank of the Avondale River.

'Two of Haslam's patent dry or semi-dry brick-making machines were at work, each turning out about twenty bricks per minute. The bricks, as far as respects shape, appearance, and uniformity of texture, seemed all that could be desired, and the visitors were loud in their praise of the machines for the manner in which the bricks were turned out.'[362] The machinery was driven by condensing engines of forty horse-power, fitted with Scott's patent boilers, from the Phoenix Foundry (Fraser and Tinne), and erected by that firm.[363] The clay with which the machines were fed was shovelled in from the hill face at the back of the works. The water for the works was obtained by making a dam on the creek at the back of the company's property, and syphoning the water to the factory.[364]

However, the men were not so happy with the bricks that had already been fired in the kiln. These bricks were not satisfactory either in texture or appearance.[365] The reason for the disappointing appearance was explained to the party by the directors. First of all, there had been a delay in getting the machinery from England. Some twenty-two tons of machinery was found to be unsuitable for the work intended and only three weeks before the meeting, the proper machinery - with disintegrators, had been fully set up. Experience was also lacking at that time about the working of the various seams of clay.[366] The first bricks were made by the pan process which had since been dispensed with. In later works the disintegrator had been used, thus a much better article was produced.[367] The present bricks were not the best that could be turned out, as the material used was surface clay (mullock), and were not the bricks the company intended to send to the Auckland market.[368]

A Mr J. Holland, in responding as one of the oldest builders in Auckland, remarked that during the last five years he had need of more bricks than any man in Auckland. The bricks they had seen that day were very shapely, but they would have to be better fired and better worked.[369]

The party toured the whole fifty acres of property, showing nine feet at low water at the company's wharf before leaving at 6 pm.[370] The party of men were extremely pleased with their afternoon's outing.

At the Auckland Brick & Tile's annual meeting, held on 7 December 1885, Mr D Fallon, (Chairman of Directors) reported that 1500 shares had been taken up, leaving 2100 still in the possession of the Company.[371] The chairman was optimistic that all preliminary

[362] *New Zealand Herald,* 15 November, 1884, p6.
[363] Ibid.
[364] Ibid.
[365] Ibid.
[366] Ibid.
[367] Ibid.
[368] Ibid.
[369] Ibid.
[370] Ibid.
[371] *Auckland Star,* 8 December, 1885, p4.

difficulties had been overcome, and that success 'might now be looked for.' It was also announced that the building housing the new twelve-chamber Hoffman kiln had been completed.[372] The improvements were expected to enable the Company to create an immediate return of above 100,000 bricks per week, offering a good margin for profit. The Hobsonville plant had also been upgraded, with another kiln 'being obliged to be built, more machinery purchased, and the works further enlarged.'[373] The Company also began to explore the idea of ornamental bricks.[374] The directors were confident that the future of the company looked bright.[375] However, business must not have been as rosy as first appeared. According to Land Information New Zealand, the company was unable to honour the terms of the mortgage advanced by James Black on the Hobsonville property and the property at Te Atatu was also mortgaged.[376]

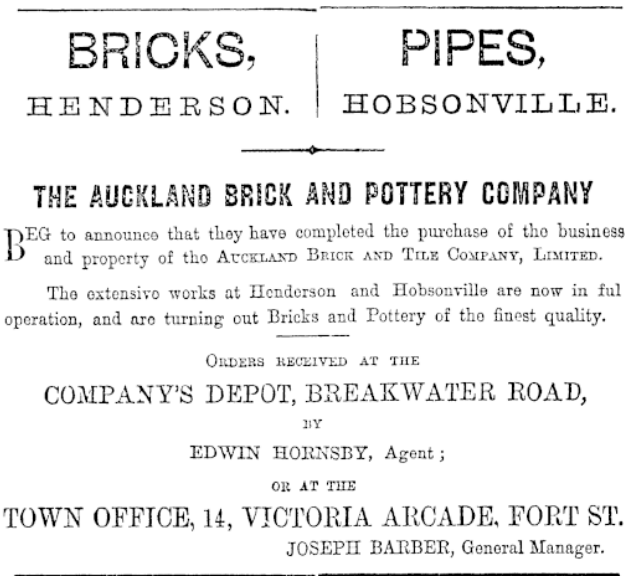
The same year, the Auckland Brick & Tile Company exhibited its wares at the New Zealand Industrial Exhibition in Wellington. On show were:

> "Bricks made by the patent double-press dry process, the clay being taken from the bank into press, then straight into kiln and burnt without any further drying. The company also show a collection of drain-pipes both glazed and plain largely manufactured from sea-beach clay."[377]

However, a review in the *Wanganui Herald* of the New Zealand Industrial Exhibition showed the company in poor light. *'The Auckland Brick & Tile Company show some similar goods, but they are not so presentable as those from the South, neither shape nor glaze being up to the mark.'*[378]

The company was failing. On 11 October 1886, an extraordinary General Meeting of the Auckland Brick & Tile Company was held. The shareholders resolved *'that the company cannot by reason of its liabilities continue its business and that it is advisable to wind up the same and accordingly that the company be wound up voluntarily.'*[379]

In May 1887, The Auckland Brick and Tile Company was purchased by Pierce Lanigan, James Black and Daniel Fallon,[380] all former directors of the Auckland Brick & Tile Company who decided to continue the pottery trade under the name


BRICKS, HENDERSON. | PIPES, HOBSONVILLE.

THE AUCKLAND BRICK AND POTTERY COMPANY

BEG to announce that they have completed the purchase of the business and property of the Auckland Brick and Tile Company, Limited.

The extensive works at Henderson and Hobsonville are now in ful operation, and are turning out Bricks and Pottery of the finest quality.

Orders received at the
COMPANY'S DEPOT, BREAKWATER ROAD,
by
EDWIN HORNSBY, Agent;
or at the
TOWN OFFICE, 14, VICTORIA ARCADE, FORT ST.
JOSEPH BARBER, General Manager.

[372] *Ibid.*
[373] Ibid.
[374] Ibid.
[375] Ibid.
[376] Land Information New Zealand, Auckland, R25, p2 8 March 2000.
[377] *New Zealand Industrial Exhibition* 1885, Wellingto 2000.
[378] *Wanganui Herald,* 2 September 1885, p2.
[379] Companies Office file, Auckland Brick & Tile Company Limited, National Archives, Auckland, BADZ 5181 428 2445, Letter to Registrar of Joint Stock Companies, 23 March 1887. Cited from Best, S B Clough R E, 8 March 2000.
[380] *The New Zealand Herald,* Wednesday, May 4, 1887; Land Information New Zealand, Auckland and Vol 37, Folio 266.

Auckland Brick & Pottery Company. However, this enterprise appears not to have been a limited liability company as the Auckland Brick & Tile Company had been.[381] The new company operated its brickworks at Te Atatu and pottery works at Hobsonville. Like the Auckland Brick & Tile Company, they had a depot at Breakwater Road and ran an office from the Victoria Arcade building in Queen Street. The general manager was Joseph Barber, former accountant and liquidator of the Auckland Brick & Tile Company.[382]

Unfortunately, the new business was no more successful than its predecessor. By 1887 the *New Zealand Herald* reported that the building trade was depressed.[383] By 1891 the financial situation had worsened. The original mortgage of £1200 raised by the Auckland Brick & Tile Company in 1883 to purchase the pottery at Hobsonville remained unpaid.

Gazette in Bankruptcy.

IN BANKRUPTCY.

IN THE SUPREME COURT OF BANKRUPTCY HOLDEN AT AUCKLAND.

In the matter of the Bankruptcy Act, 1883, and amendments thereof, and of the Bankruptcy of PATRICK LANIGAN, of Auckland, Contractor, a Bankrupt.

Gazette in Bankruptcy.

IN BANKRUPTCY.

IN THE SUPREME COURT OF BANKRUPTCY HOLDEN AT AUCKLAND.

atter of the Bankruptcy Act, 1883, and
ndments thereof, and of the Bankruptcy
RICK LANIGAN, of Auckland, Con-
or, a Bankrupt.

hereby given that the abovenamed
gan has this day filed a petition
ged a Bankrupt. The First General
Creditors will be held at my office,
e Buildings, Custom-street, Auckland,
DAY, the 19th day of September,
un.
debt must be furnished prior to the
roxy forms can be obtained at my office.
n be admitted except under order of
ter the expiration of four months from
the filing of the petition. Accounts
pported by proof of debt, as prescribed
ot be recognised.
12th day of September, 1891.
JOHN LAWSON,
Official Assignee in Bankruptcy.
. ALEXANDER, of Wyndham-street,
olicitor for the Bankrupt.

John Black, who had purchased the mortgage from the recently bankrupted James Black, was now demanding the sale of the Hobsonville property.[384] A public auction was held on 18 March 1891 and John Black purchased the property for £360 plus the unpaid mortgage.[385] Later that year Black sold the property to the nearby pottery company R O Clarke.[386] This chain of events was repeated in Te Atatu as Lanigan was also declared bankrupt in 1891.[387] As Lanigan, Fallon and Black were unable to pay the mortgage on their property, ownership was transferred in 1893 to Walter Buller, to whom it had been mortgaged.[388] In 1895 the pottery was up for sale and in 1902 the machinery was removed. The kilns were demolished in 1906.[389]

'Brickbats at site of Auckland Brick & Tile Co., Te Atatu, 1959'

View of brick scatter at the site of an old brickworks on the foreshore at the mouth of the Whau River. In the background is the motorway bridge at Te Atatu.

[381] There is no record of the Auckland Brick and Pottery Company being registered with the Companies Office, National Archives, Auckland, Index of New Zealand Companies. Cited from Best, S B Clough R E, 8 March 2000.
[382] Companies Office file, Auckland Brick & Tile Company Limited, National Archives, Auckland, BADZ 5181 428 2445, Correspondence dated 23 March 1887 and *Cleaves Auckland Directory*, 1891, p.458.
[383] *New Zealand Herald,* 7 July, 1887, p6.
[384] *New Zealand Herald,* 7 February 1891, p8 and Land Information New Zealand, Auckland, R38, p835. Cited from Best, S B Clough R E, 8 March 2000.
[385] Ibid, R38, p835. Cited from Best, S B Clough R E, 8 March 2000.
[386] Ibid, R38, p836. Cited from Best, S B Clough R E, 8 March 2000.
[387] *New Zealand Herald,* 14 September, 1891, p8.
[388] Land Information New Zealand, Auckland, Vol 37, Folio 266. Cited from Best, S B Clough R E, 8 March 2000
[389] Best, S B Clough R E, 8 March 2000.

Diamond, John Thomas, 1912-2001 (photographer), J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

Tanneries, Abattoirs and Varnish Factories

By the 1860s tanneries and other water-using industries were becoming established all around West Auckland. These industries used the water freely and without too much regard to the pollution they were causing. *'The opportunity to discharge noxious wastes, unhampered by legal proscription or public pressure, is what attracted them to the west.'*[390] Of these early industries Astley's Tanneries was the only one to endure for many years.

E Astley & Sons Tannery

In 1880 Elijah Astley, his wife Cicely and eight of their nine children arrived in New Zealand from Lancashire, United Kingdom.[391] Upon arrival Elijah and his eldest son John Edward worked at the Ireland Brothers tannery in Panmure before relocating to the Gittos Tannery at Avondale.[392] By September 1882, the family had saved enough money to purchase a 12-acre section along New Windsor Road and had built their family home there by 1883.[393] Elijah Astley became manager of the leather dressing department of the tannery of B Gittos and Sons, and held the position until 1888.[394] His son, John Edward, also completed his apprenticeship (which had commenced in England), and worked as a journeyman currier at the same tannery for a number of years, before moving to Melbourne, Australia where his wish to start his own tannery took hold.[395] John spent his life savings of £250 on rough-tanned hides and sent them back to his father in Avondale. Upon his return to Auckland, and after buying more rough-tanned leather, father and son decided to tan their own. A tanning pit was thus dug in an open paddock at Portage Road in New Lynn in 1888.[396] The land site, on the upper reaches of the Whau Creek at the critical meeting point between fresh water and high tide ensured that fresh water could be used in quantity throughout the tanning process and tidal water then disposed of effluent.[397] This was the beginning of E Astley and Sons.

The firms work was initially based around the production of saddles and harness equipment to meet the demand of horse owners in the region.[398] As cars replaced horses from the

---

[390] Dick Scott, *Fire on the Clay: The Pakeha Comes to West Auckland,* (Southern Cross Books, Auckland, 1979), p176. Ibid.

[391] The New Zealand Leather and Shoe Research Association (LASRA) website. Sourced online at https://www.lasra.co.nz/100-year-old-leather-chemists-pocket-book/. Another source, however, has stated that 'nine out of their ten children' arrived in New Zealand in 1879 – Dick Scott, *Fire on the Clay: The Pakeha Conmes to West Auckland* (Southern Cross Books, Auckland, 1979) p177.

[392] John E Astley 'The Astley Saga, A Post-Pioneer Auckland Family,' *Journal of the Auckland Historical Society, [Part One]* October 1966.

[393] Ibid.

[394] New Zealand Electronic Text Collection *Te Puhikotuhi o Aotearoa,* Victoria University of Wellington, *The Cyclopedia of New Zealand [Auckland Provincial District]* 'Leather Trade,' p380. Sourced online at http://nzetc.victoria.ac.nz/tm/scholarly/tei-Cyc02Cycl-t1-body1-d1-d49.html.

[395] The New Zealand Leather and Shoe Research Association (LASRA) website. Sourced online at https://www.lasra.co.nz/100-year-old-leather-chemists-pocket-book/.

[396] Ibid.

[397] Dick Scott, *Fire on the Clay: The Pakeha Comes to West Auckland* (Southern Cross Books, Auckland, 1979) p177.

[398] F MacDonald and R Kerr (eds) *West: The History of Waitakere* (Random House, Auckland, 2009).

beginning of the twentieth century, however, Astley Tanneries diversified into manufacturing shoes and even leather upholstery for cars and, with Crown Lynn, became one of the biggest businesses in New Lynn.[399] Unfortunately, the continued operation of the plant, together with Binsted's Abattoirs (which was situated on land that now makes up Ken Maunder Park) led to pollution of the Whau River.[400] As far back as the early 1900's, local residents were raising complaints with the local authorities about the pollution on the Whau. For example, at the monthly meeting of the Avondale Road Board, held in November 1906, residents of Avondale South petitioned the Board to take proceedings to stop the pollution of the creek running through their properties. It was resolved that representations be made to the Mount Roskill Road Board and the Health Department regarding the matter.[401]

Whether the petition was taken seriously is not clear. It can be noted, however, that the tanning business was booming by 1914, when the mobilisation of troops for the start of World War One led to a growth in the demand for army boots, leather belts and leggings and other military equipment.[402] But now, pollution along the Whau was again worsening and locals were becoming frustrated - as expressed in the following letter by a resident.

> *Dumping in the Whau*[403]
>
> *Sir, - I have been patiently waiting to see the results of the outcry against the dumping in Avondale and the rumours of same in New Lynn, but evidently the subject has been allowed to die out in the usual manner. While these people were crying out about this dumping, they entirely overlooked the manner in which trade refuse and rubbish of all kinds is deposited in the Whau River. If some of them were to make an inspection (preferably at low tide), or better still, get the Health Department to analyse some of the mud, I think the result would be very interesting. It is to be hoped that such a thing as typhoid never breaks out in that district, because if it does there will be a heavy reckoning, and then, of course, there will be another outcry.*
>
> A Resident.
>
> *The New Zealand Herald*, Friday June 12, 1914

The condition of the Whau deteriorated throughout the early years of the twentieth century, with little action taken to rectify the growing problem. In April 1920, at the monthly meeting of the New Lynn Town Board, it was decided that a letter be written to Messrs E Astley and Sons re complaints received regarding the alleged pollution of Whau Creek.[404] By 1926, several ratepayers residing in Portage Road had voiced their concerns with the Town Board over the worsening condition of the Whau.[405] The residents argued the continued pollution had become a nuisance and a menace to the district. During the previous ten years, this pollution had steadily worsened, and the smell arising from the creek, particularly

[399] Ibid.
[400] Ibid.
[401] *The New Zealand Herald,* Friday, November 9, 1906.
[402] *Western Leader,* June 25, 2008.
[403] *The New Zealand Herald*, Friday, June 12, 1914.
[404] *The Auckland Star,* Tuesday, April 13, 1920.
[405] *The Auckland Star,* Tuesday, April 27, 1926.

at low water, was such that windows had to be shut against it.[406] In addition, numbers of people bathed in the water between the railway bridge at New Lynn and Point Chevalier, and it was contended that the Board should erect notice boards warning the public against bathing in these waters.[407] Combined action was suggested by the interested local bodies, including the Auckland City Council, Avondale Borough Council and the New Lynn Board.[408]

A letter was also received from Dr Chesson, medical officer of Health, who stated*:*

> *"Complaint was made to me by a deputation from local residents in regard to the offensive condition of the Whau River due to discharge from the tannery. That nuisance exists in the Whau Creek is verified by a personal knowledge of officers of this Department. The whole of the contents of the various vats are discharging through an open trench into the headwaters of the Whau Creek. There are four water closets on the premises and these also discharge into the open trench direct. There is no purification process, and at present the fresh water creek is dry, therefore there is no dilution, and about 10,000 gallons of the fluid are discharged daily into the creek. I should be glad therefore if your board will serve an urgent notice upon Messrs. Astley, Ltd., to forthwith cease the discharge of any offensive material into Whau Creek, and to make immediate provision for the purification and disposal, in such manner as will not cause nuisance, of the waste material from the tannery. Also to disconnect the present water closets and to substitute therefore the pan system used in other parts of your district."*[409]

A local resident, Mr Hughes, stated that the smell was so offensive that it awakened him sometimes in the early hours of the morning. The Chairman of the Board affirmed that there was undoubtedly a nuisance. If the ratepayers approved of the sewerage proposals no doubt the trouble would be removed.[410]

[406] Ibid.
[407] Ibid.
[408] Ibid.
[409] Ibid.
[410] Ibid.

View of the Astley Tannery works on Portage Road (from the new road across the Whau Creek) September 1969.
JTD-11G-04032, J T Diamond Collection, Waitakere Library and Information Services, Auckland Libraries, West Auckland Research Centre.

The Board's sanitary inspector confirmed that Messrs. Astley and Sons were prepared to install septic tanks and would adopt any reasonable suggestion in dealing with the fluid from the works.[411] It was resolved to notify the owners in the terms of the letter from the Health Department.[412] In January 1927, the resolution "that the Health Department be asked to send out a representative to inspect and report to the board" was thus adopted.[413]

In December, 1931 – four years after this resolution was adopted, more letters of complaints from local residents were received by the Auckland City Council regarding the objectionable odour arising from the Whau Creek.[414] Inspections had been made of the creek from the Great North Road bridge to the dam just above Messrs Astley and Son's tannery, and invariably the water was found to be discoloured with trade wastes from the tannery, and on occasions the odour was decidedly objectionable.[415] In addition to the offensive smell, small particles of scrapings from hides had been discharged into the stream, and with incoming tides the polluted water was carried up the branch stream near the foot of Taylor Street, rendering the bathing place dangerous to use.[416] After negotiations with

[411] Ibid.
[412] Ibid.
[413] *The Auckland Star,* Wednesday, January 12, 1927.
[414] *The Auckland Star,* Tuesday, 15 December, 1931.
[415] Ibid.
[416] Ibid.

Messrs Astley and Son over the matter, all agreed that the most satisfactory solution to the problem would be to discharge all the drainage into the sewage system.[417]

Although the solution was agreed to by all parties it appears nothing more was done at that time. Another seven years passed before the issue was tackled once more. With a view to finding a satisfactory solution, the Minister of Health arranged for the Government analyst to take samples and test the various types of effluent discharging from Astley's Tanneries.[418] From the tests it was hoped to ascertain whether it would be possible to treat the effluent for discharge into the borough sewer.[419] By September of 1939 (some 3 months later) arrangements for the prevention of the pollution of the Whau Creek by effluents from the tannery were finalised.[420] On the advice of the medical officer of health, Dr T J Hughes, the tannery firm was requested to join its discharge system with the borough sewerage system, except in the disposal of more harmful effluents. These could be discharged in the same way after screening and sedimentation. The borough engineer was instructed to get in touch with the firm to have the scheme put into operation, the council considering it would be fully effective in freeing the stream from pollution.[421]

A satisfactory solution must have been reached as the business thrived under the family's ownership until 1984 when it merged with Christchurch wool and leather merchants Mair Group, thus becoming Mair Astley.[422] The newly created group was then bought out by construction company Mainzeal and renamed Richina Pacific. At that time Doug Astley was the last member of the family still working for the business until he retired from the Board in 1988 – the same year the company celebrated its 100th year at the Portage Road site.[423] In the mid-1990s Richina Pacific formed a joint venture with the Chinese-based Shanghai Leather Company and the company's chromium-based tanning technologies and equipment were transferred to China.[424] The remaining part of Astley Leather which dealt with vegetable-tanned leather was sold to a consortium led by Digby Crompton of Parisian Neckwear.[425] This led to the formation of Astley Leathers Ltd. By then the company was exporting ninety per cent of its vegetable-tanned products including leather for saddlery, belts and making crafts.[426] Astley Leathers was bought by the Lowe Corporation in 2006 but it was soon apparent that the business was no longer viable. It closed its doors for good in 2008.[427]

[417] Ibid.
[418] *The Auckland Star,* Tuesday, May 2, 1939.
[419] Ibid.
[420] *The New Zealand Herald,* Tuesday, September 26, 1939.
[421] Ibid.
[422] *Western Leader,* June 25, 2008.
[423] Ibid.
[424] Ibid.
[425] Ibid.
[426] Ibid.
[427] Ibid.

B Gittos and Sons

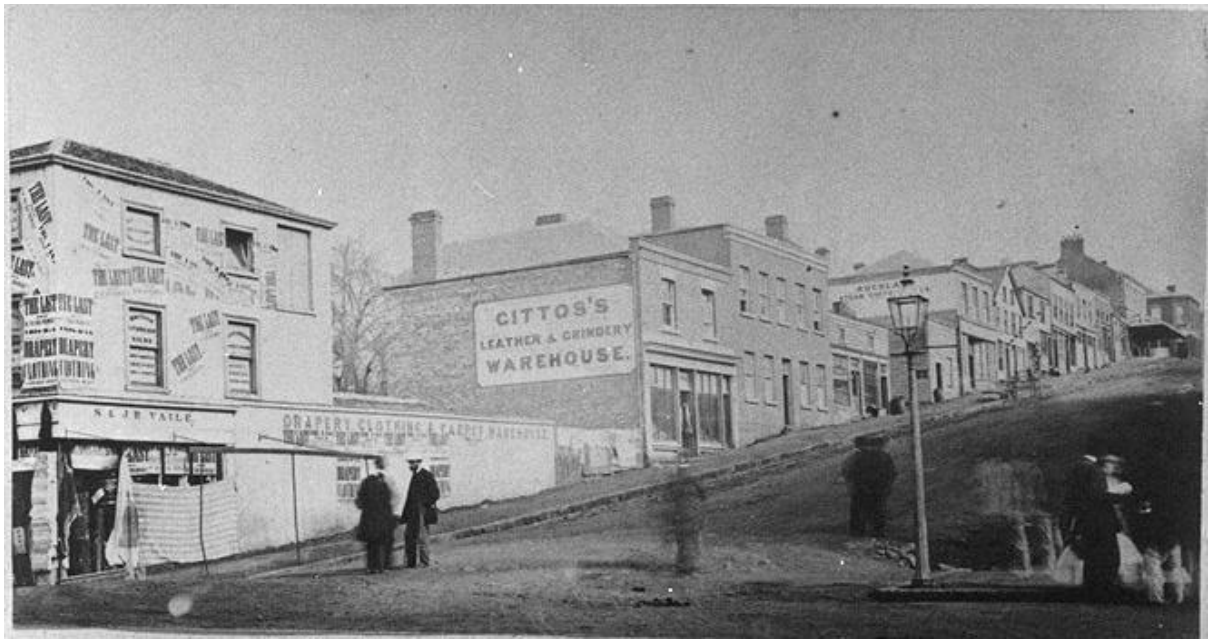
Benjamin Gittos (1808-1884 – native of Bridgmouth, Shropshire) was one of Auckland's earliest settlers.[428] Gittos and his family arrived in Auckland in the barque James, Captain Todd, from London, in June 1840.[429] The family set up camp amongst the tea-tree and flax near the waterfront. The site of Auckland city was at that time a large stretch of fern, interspersed with raupo swamps.[430] The area was described as consisting of a few scattered raupo whares, with some artisans engaged in constructing a residence for the first Governor, Captain Hobson.[431]

First campsite at new town of Auckland, 1840.
The campsite of the advance party sent to establish the newly founded city of Auckland in September, 1840.
Alexander Turnbull Library, National Library of New Zealand, Te Puna Matauranga o Aotearoa. Reference E-216-f-115.

The Gittos proceeded on with the barque James as it set out for the Bay of Islands. Upon landing, the young Gittos family travelled across the island by way of the native tracks to Hokianga and Benjamin Gittos was successful in the making of a homestead and farm.[432] In 1845, however, the family were forced to abandon their home at eight hours' notice following the outbreak of war with Hone Heke. The Gittos family, and other refugees took

[428] *New Zealand Herald,* 7 August, 1884, p5.
[429] Ibid.
[430] Ibid.
[431] Ibid.
[432] Ibid.

shelter on board H.M. gun-brig Victoria (Captain Richards), which had been despatched by the Governor to Hokianga to bring the settlers and their families to safety in Auckland.[433]
After struggling through immense hardship, Gittos was successful in starting a leather business in the city in 1857, expanding to run a tannery at Avondale on the Whau River in 1863.[434]



No known copyright. Acknowledgement to 'Sir George Grey Special Collections, Auckland Libraries, 4-226', 1860s?

At the Whau tannery he initiated techniques for tanning with the bark of native trees such as the tanekaha and towhai. By 1864 Benjamin Gittos was issuing penny tokens, advertising his trade and location.[435]

Photos sourced from (http:/collections.museumvictoria.com.au/items/83203).

Benjamin Gittos and his sons were well-known and respected for their 'liberality and large heartedness.'[436] An article in the *Daily Southern Cross* of January, 1876 described in great

[433] Ibid.
[434] Ibid.
[435] A Regan and H Robinson (2005) Benjamin Gittos, Leather Merchant, Auckland, New Zealand (1808-1884) in Museum Victoria Collections http://collections.museumvictoria.com.au/articles/1866.
[436] *Daily Southern Cross,* 12 January, 1876, p3.

detail the occurrence of a ball at the Whau Hall which was given for Gittos' employees and friends, together with a large number of the principal residents of the district.[437] One of the main reasons for arranging the ball was to 'foster and encourage a more kindly and neighbourly feeling towards each other' and to 'unite one another more closely in one common brotherhood, and to rub off the cold restraints which society imposes, and which is so detrimental to the social prosperity of country districts.'[438] At the end of the night, the Gittos were toasted with a song by all of 'For they are jolly good fellows!'[439]

Benjamin Gittos died peacefully after a lengthy illness, on 6 August 1884 at the age of 76 and was remembered as a kind and giving man.[440]

Binsted's Abbatoirs

Note: Many advertisements and editorials in the newspapers of the times spelt Binsted as 'Binstead.' In every such case, the name has been corrected to read 'Binsted'.

John (farm labourer) (51) and Mary Binsted (42) arrived in New Zealand aboard the *Woodlark* from London on 31 May 1873. Their six children accompanied them – Henry (21), James (20), Walter John (16), Annie (13), Clara (12), and Janet (7).[441] In March 1877, a J Binsted (butcher at Drake Street) and other named butchers entered into a contract by which they agreed to use a slaughterhouse which was to be erected by the City Council at Western Springs. The agreement would be signed provided the accommodation was sufficient and the fees charged did not exceed any that were current at that time.[442] Presumably, J Binsted referred to John (father). Alternatively, it could have been James who would have been 24 at the time.

In February 1881, James Binsted announced to the general public that he was to open a butcher's shop (on Saturday 26th) in Victoria Street West (Freeman's Bay).[443] He hoped 'by attention to merit a share of public patronage.'[444] This was the beginning of 'H & J Binsted' – a partnership between brothers Henry and James. By October, the new wholesale and retail butchery was advertising the sale of corned beef in any quantity at their new store.[445] In December of the same year they were advertising for a cabin boy – 'Apply on Monday morning, to H & J Binsted, butchers, Freeman's Bay'.[446] Early the following year they advertised for 'a lad to ride for orders.'[447]

---

[437] Ibid.
[438] Ibid.
[439] Ibid.
[440] *New Zealand Herald,* 7 August, 1884, p5.
[441] 'Woodlark Passenger List. Sourced online at http://freepages.genealogy.rootsweb.ancestry.com/~ourstuff/Woodlark1873.htm.
[442] *Auckland Star,* 2 March, 1878, p3.
[443] *Auckland Star*, 24 February, 1881, p3.
[444] Ibid.
[445] *Auckland Star,* 1 October, 1881, p13.
[446] *Auckland Star,* 2 December, 1882, p3.
[447] *Auckland Star,* 9 February, 1883, p3.

In December 1886, an application from M H Frost was granted for temporary transfer of a slaughterhouse license to Messrs H & J Binsted.[448]

In March and August of 1887, three sections of an allotment in New Lynn, just across the Whau Creek from the racecourse, were purchased from Avondale farmer John Simpson by the three Binsted brothers – Walter, Henry and James.[449] The Binsted family records state that property was purchased in 1887 by the family "on the banks of the Whau River for use as a farm and abattoirs." This was the site of the future Binsted Road Reserve, later Rewa Park, now Ken Maunder Park in New Lynn.[450]

Avondale with horse buses, H & J Binsted (butchers) and Brown, Barrett and Company, 1880-1889.
Sir George Grey Special Collections, Auckland Libraries.

The first advertisement that mentions Avondale was 25 January 1890. The brothers had requested tenders for cutting down scrub at Titirangi.[451] The next advertisement, written five days later, stated: 'For sale, two working bullocks in good condition. – Apply H and J Binsted, Avondale.[452] Yet another advertisement was for the sale of pure-bred Berkshire and Yorkshire pigs, in both Freeman's Bay and Avondale in 1893.[453] In December of that same year, Henry and James were again advertising the sale of 'first-class pigs, from pedigree stock for breeding purposes – on sale at Binsted's Avondale Styes.[454] The brothers were successfully operating two butcheries and a slaughterhouse by this time.

[448] *New Zealand Herald,* 18 December, 1886, p6.
[449] Timespanner: A journey through Avondale, Auckland and New Zealand history. 'Binsted's Corner.' Sourced online at http://timespanner.blogspot.co.nz/2008/09/binsteds-corner.html.
[450] Ibid.
[451] *Auckland Star,* 25 January 1890, p8.
[452] *Auckland Star,* 30 January 1890, p1.
[453] *Auckland Star,* 13 May 1893, p5.
[454] *New Zealand Herald,* 26 December, 1893, p8.

Unfortunately, Henry Binsted died at his residence, Cameron Street, off Shelly Beach Road on 3 September 1895.[455] He had been suffering from typhoid fever.[456] On April 25, 1901, James Binsted gave notice, 'in accordance with the Provisions of Section 2 of the Slaughtering and Inspection Act, 1900,' that it was his intention to apply for a license 'in respect of a slaughterhouse situated on a portion of the land owned and occupied by himself in the District of New Lynn, Waitemata County, which portion was bounded on the north and north-west by the Whau Creek.'[457] Lisa Truttman states the original Freeman's Bay business continued until c 1909, when around that time, a new branch was established on New North Road at Mt Albert.[458] In the interim, James Binsted had purchased the Avondale corner site (all five lots) in April 1902.[459] In May 1901 James had also purchased Lot 6 from his brother Walter. The family thus owned the entire north-western corner of Palmer's "Greytown" subdivision.[460]

In 1898, the first of three fires at Binsted businesses occurred. The newspaper report stated:[461]

> *Two shops at Freeman's Bay, owned by Mr Billington and occupied by Billington and Drummond (grocers) and Binsted (butcher), were destroyed by fire. Insurances: On the property, £800; on the stock, £750 - both in the Alliance.*

By the time the fire was contained the contents of both shops were completely gutted, and only the walls remained standing.[462] Mr Charles Nicholas, the manager of Mr Binsted's business, slept on the premises, but he was only woken in time to assist in saving the horses. Binsted who lived in Avondale at that time, had not been contacted in regard to his losses at the time of first print, but it was known that he had some machinery of considerable value on the premises.[463] It was later established that Binsted's effects comprising of fittings and a gas engine, valued at about £100, were uninsured.[464]

The second unfortunate fire, which occurred in Avondale in January 1907, totally destroyed the boiling-down plant consisting of three boilers.[465] A stock of sheep and bullock skins and tallow were also burnt – the whole of the property being valued at £114. The *New Zealand Herald* stated:

> *It appears that when boiling down is to be done the usual procedure is to fill the boilers overnight, and bank up a fire, leaving it unattended till morning. This course was followed on Friday night, and when the employee, Albert Henton, left the building at about ten o'clock everything was apparently safe. The fire, however, broke out between three and four o'clock in the morning, and demolished the building before any of the contents could be saved. It is surmised that the fire*

[455] *Auckland Star,* 3 September 1895, p8.
[456] *Auckland Star,* 3 September 1895, p4.
[457] *New Zealand Herald,* 2 May 1901, p8.
[458] Timespanner: A journey through Avondale, Auckland and New Zealand history. 'Binsted's Corner.' Sourced online at http://timespanner.blogspot.co.nz/2008/09/binsteds-corner.html.
[459] Ibid.
[460] Ibid.
[461] *Evening Star,* 21 February, 1898, p2; *Press,* 22 February, 1898, p6.
[462] *New Zealand Herald,* 21 February, 1898, p5.
[463] Ibid.
[464] *New Zealand Herald,* 18 March, 1898, p3.
[465] *New Zealand Herald,* 22 January, 1907, p5.

originated through the fat boiling over, and running along the floor gave the flames a good chance to burn fiercely. The building and boilers were covered by a risk for £75 with the New Zealand Insurance Company.[466]

At the end of 1917 yet another fire was reported – this time at Binsted's butcher's shop. [467]All that could be saved were the books and the computing scales, along with a few bags of salt. How the fire originated was a mystery.[468] James Binsted was not one to give up and went about rebuilding his butchery.

In August 1919 James sold a portion of his land (most of Lot 3) to the 'inhabitants of the Avondale Road Board', for 'providing exits from the purchaser's property … and also for the purposes of a yard and storage in connection with the said Board's local public work.'[469]

At the end of October 1920 James Binsted died very suddenly at Avondale, at the age of 68.[470] He had retired from his business merely one month before and was arranging for an extended holiday when his death occurred.[471] He was one of the original members of the Avondale School Committee and a founder of the local jockey club. He was also the oldest member of the choir of the Anglican Church at Avondale. He was buried at the Anglican cemetery, Avondale.[472]

On May 14, 1921, tenders went out for the purchase and removal of sheds situated on James Binsted's property in New Lynn. There were six sheds in all, sizing from 3ft x 12ft down to 9ft x 7ft.[473]

His will, dated 1913, tasked his wife Elizabeth Mowbray Binsted and son-in-law Harold Bollard (the executors and trustees of his will) to carry on the business in Elizabeth's lifetime, under the management of James' son John Claude Binsted.[474] On his mother's death, John was to inherit the business – "also the plant, horses and carts, stock in trade, and book debts in and about the slaughterhouse, shop and premises."[475] However, in September, 1920, the Avondale butchery and land at Lots 1, 2 and the remainder of Lot 3 was sold to R & W Hellaby's for £3090 with John Claude Binsted continuing to manage the shop for Hellaby's.[476] Elizabeth Mowbray Binsted died 27 January, 1937.[477] John Claude Binsted died 22 July 1950 at the age of 65.[478]

---

[466] Ibid.
[467] *Auckland Star,* 17 December, 1917, p4.
[468] Ibid.
[469] Timespanner: A journey through Avondale, Auckland and New Zealand history. 'Binsted's Corner.' Sourced online at http://timespanner.blogspot.co.nz/2008/09/binsteds-corner.html.
[470] *Auckland Star,* 2 November, 1920, p8.
[471] Ibid.
[472] Ibid.
[473] *Auckland Star, 14 May, 1921, p9.*
[474] Timespanner: A journey through Avondale, Auckland and New Zealand history. 'Binsted's Corner.'
[475] Ibid.
[476] Ibid.
[477] St Judes Cemetery records. Sourced online at http://cemetery.stjudes.co.nz/StJudes_Cemetery/Survey_files/06-Headstone%20Transcripts-E.pdf
[478] Ibid.

The New Zealand Varnish Works, Avondale

Sealy James Best, his wife Mary, and seven children arrived at Auckland on 19 August 1885, aboard the *Kaikoura*.[479] By 2 October 1885, Sealy Best and William Bailey had sub-leased just over 16 acres of land on the Rosebank Peninsula, part of allotments 9 and 10.[480] In November 1885, the *New Zealand Herald and Daily Southern Cross* reported that Best was about to open the first varnish manufactory in New Zealand. He had purchased a suitable block of land and had brought from England all machinery and plant for making varnishes.[481] By the end of July 1886 the Varnish Works commenced operations.[482] In October of the same year, the *New Zealand Herald* visited the newly opened "Best and Murray's Varnish Works" and delivered a detailed report on what was observed.[483] The block on which the factory was built was approximately 8 acres in extent, with frontage to the Avondale River. It had ready access to the city by road, rail, and sea.[484] The firm had been busy throughout the preceding months preparing everything for the start of business. The buildings were constructed of corrugated iron, 20 gauge, with angle iron framing (no wood was used) and comprised the factory proper, drying room, gum room, engineer and blacksmith's workshops, and office.[485] At that time, all kinds of oil and spirit varnishes were being made with the chief ingredients being kauri gum, linseed oil and spirits of turpentine.[486] The newspaper report stated that Sealy Best was an English varnish maker with 20 years' experience, and had built and started the West of England Varnish Works. Two of his sons were also practical varnish makers, and his oldest son was the engineer of the factory. Mr Murray (Best's partner) was from Canterbury, and was so satisfied with the ultimate success of the enterprise that he invested his own capital in the venture.[487]

Sealy's attention was first attracted to the utilisation of kauri gum for the manufacture of varnish by its being sent to England in the raw state; then being brought back to New Zealand in a manufactured state as an ingredient in varnish, which seemed to be 'a useless waste of labour and expenditure outside New Zealand.'[488] It occurred to him that it would be more prudent to establish the business in Auckland, in order to employ local labour and keep money in the colony.[489]

The processes of varnish manufacture were numerous and lengthy. After the kauri gum had been scraped, it was chopped into uniformly-sized pieces and then placed in copper pots of

[479] 'Auckland Area Passenger Arrivals 1838-1889.' Sourced online at http://www.aucklandcity.govt.nz/dbtw-wpd/exec/dbtwpub.dll.; *Auckland Star,* 15 August, 1885, p2.
[480] CT 31/139. Cited from Lisa Truttman, 'Best's Varnish Works.' Sourced online at https://www.scribd.com/document/7535497/Best-s-Varnish-Works.
[481] *The New Zealand Herald and Daily Southern Cross,* 3 November, 1885, p4.
[482] *New Zealand Herald,* 28 July, 1886, p6.
[483] *New Zealand Herald,* 11 October, 1886, p6.
[484] Ibid.
[485] Ibid.
[486] Ibid.
[487] Ibid.
[488] Ibid.
[489] Ibid.

complicated form and put over the fire and melted. When the gum was melted to a high temperature, the liquid was then pumped into wrought-iron square tanks by a steam pump, and allowed to remain for some days to settle. It was then further pumped into a large wrought-iron drum, which revolved for some hours, and again pumped into settling tanks and allowed to remain until matured.[490]

The furnaces at the Avondale factory had large firebrick linings 20 inches in diameter, six inches thick, and 20 inches deep, set in a massive brickwork underground, covered to the floor with a cast iron fire-plate, and wrought-iron grating to admit the air to the furnaces. The chimney itself was made of strong wrought-iron, quarter of an inch thick, and galvanised in 12 feet lengths. The oil copper was specially constructed and set in brickwork with firebrick lining to the furnace, and supplied with oil from a large wrought-iron tank. A combined vertical engine and boiler of 5 horse power drove the whole of the machinery. There was an excellent supply of water for the boiler. Coke was used as fuel for the furnaces, obtained from the Auckland gasworks. A combined circular and band saw for cutting timber for making cases on the spot had also been erected. Messrs Best and Murray hoped to be able to supply not only the local and colonial demand, but to also export to Australia. A two-storey brick warehouse was at that stage planned but not yet built.[491]

Sealy and Murray received many promises of support for the local production, but supporters first wished to be satisfied that a good article could be produced. The partners were happy to oblige as they had full confidence in their product and factory. The site had been well chosen, owing to its accessibility by land or water and a large sum had been spent on quality construction of the buildings and machinery.[492]

The *New Zealand Herald* summarised the report on the Avondale Varnish Works by stating that it: *'should have a prosperous career before it, as there are many thousands of pounds sent out of the colony every year for this article. No doubt when Messrs Best and Murray have proved to the satisfaction of the Government that they have established the industry, they will get a rebate of duty on the raw materials imported, so as to aid them in excluding the foreign product.'*[493]

By February 1887, according to the *New Zealand Herald,* Best had 'everything in working trim' at his recently established factory and he was turning out commercial items. Samples were being sent to persons in the trade and to the government workshops. Various sections of wood had been varnished to test the durability of the varnish and the adaptability of the woods for it. These tests had been very successful. Best displayed his varnishes at the 1887 Exhibition of New Zealand Manufactures which were met with enthusiasm and approval by enterprising painters and decorators.[494] He also displayed specimen slabs of

[490] Ibid.
[491] Ibid.
[492] Ibid.
[493] Ibid.
[494] *Auckland Star,* 2 June 1887, p4.

whakarewarewa, kauri and rimu which had been varnished at Mr Wilson's (architect) office. The varnish was gradually making its way into public favour and was fully equal to the imported article.[495] On 13 April 1887, solicitor William Henry Connell finally sold Best 1.2 acres outright.[496]

By February 1888, business must have been going extremely well as tenders were advertised for builders (in brick) to construct an extension to the varnish works in Avondale.[497] By the end of the month a tender had been accepted and building began soon after.[498] Unfortunately, a fierce gale in Avondale caused considerable damage to the new extension. The roofing of corrugated iron was stripped, the chimney stack was blown down and the new building was partly wrecked.[499] Several months later, however, the extension was completed and staff from the *New Zealand Herald* once again paid a visit to the factory.[500] The *Herald* reported the plant as first-class, and equal to that found anywhere but the principle of manufacture was naturally a great secret, for trade purposes. It was estimated that the total expenditure in buildings and plant to be approximately £5000.[501] The inventory comprised varnishes for builders and house decorators; namely hard oak, elastic oak, fine hard oak, pale elastic oak, pale hard copal, and varnishes for coach-builders and railway carriages.[502]

In the interval, the industry had been running steadily and the firm had employed Messrs E Mitchelson and Co to take up sole agency.[503] The firm had also been obliged to register its trademark ("Best" within a diamond) in self-defence, owing to inferior varnishes being sold as Auckland-made varnishes.[504]

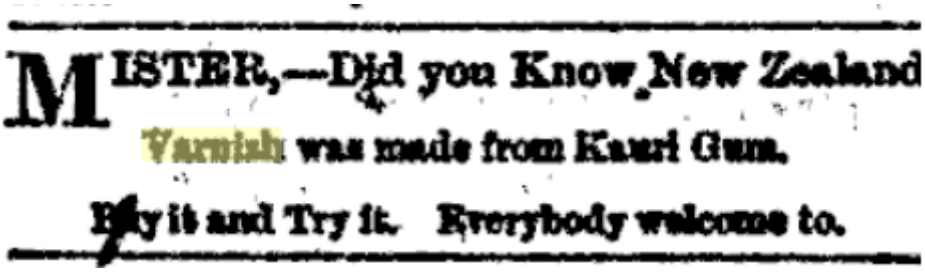
By the end of 1888, another tender was advertised – this time for the building of a new mixing shed.[505] It was to be 50 feet in length and used for spirit varnishes.[506] The business was quickly expanding and by March 1890, thirty different colours of paints had been added to the inventory. The Association had 'handsomely lithographed cards prepared at the *Herald* establishment, showing each shade of colour prepared, together with its name printed underneath.'[507] The cards were printed in two sizes, one for the wall or office, and

[495] *New Zealand Herald,* 23 February, 1888, p4.
[496] CT 46/215. Cited from Lisa Truttman, 'Best's Varnish Works.'
[497] *New Zealand Herald,* 6 February, 1888, p8.
[498] *Auckland Star,* 23 February 1888, p1.
[499] *New Zealand Herald,* 30 March 1888, p4.
[500] *New Zealand Herald,* 5 May, 1888, p2.
[501] Ibid.
[502] Ibid.
[503] Ibid.
[504] Ibid.
[505] *Auckland Star,* 1 October, 1888, p8.
[506] *New Zealand Herald,* 5 October, 1888, p4.
[507] *New Zealand Herald,* 28 March, 1890, p4.

the other for folding and use in the pocket – both of which could be obtained from Messrs E Mitchelson and Co.[508]

Local businesses were also singing the praises of the Varnish Works at this time as an advertisement in a June 1891 *Auckland Star* edition portrays:[509]

> *The locally-manufactured varnish made at the New Zealand Varnish Works, for which Messrs Mitchelson and Co are agents, bids fair to out-rival the imported article. A new bus that has been built at Cousins and Atkin's factory, Elliott Street, has been finished with this "patent durable wearing coat varnish," and looks really first-class. The workman who used the varnish is loud in its praises, as it is easy to put on and dries well, in fact he considers it quite equal if not superior to imported varnish.*



New Zealand Herald, 22 August 1891, p1.

On 2 August 1892, Mary Best purchased 7 acres, 3 roods and 30 perches, or nearly 8 acres, of Lot 15, Allotment 11 from Avondale farmer John Boyd for £400.[510] This land fronted onto what was soon to be Riversdale Road, right on the shore of the Whau River, just to the south of the varnish factory.[511] One day later, on 3 August 1892, Sealy James Best died at Avondale, aged 62 years. He was buried in Avondale Cemetery.[512] Lisa Truttman states the family continued trading as S. J. Best & Co. at Avondale for several more years.[513] However, in 1896/97 the name had changed to "Best S. J. & Co N.Z. Varnish and Paint Works; offices and stores, Customs Street east, Auckland, manufacturers of all kinds of varnishes, japans, lacquers, French polish: paints ground in oil and ready mixed: oil and colour merchants: established 1885."[514] Truttman deduces that although there was no longer any mention in the trade directories of an Avondale factory, there is no reason to suspect that it ceased production. The goods produced may well have been delivered to the new headquarters at 43 Customs Street.[515]

In February 1896, S J Best and Co advertised for a boy, able to milk, for farm, near Auckland, wages £1 per month. Apply at Customs Street East.[516] In December 1898 the *Auckland Star*

[508] Ibid.
[509] *Auckland Star,* 4 June, 1891, p4.
[510] Deed 121706, DI 16A,745, LINZ records. Cited from Lisa Truttman, 'Best's Varnish Works.'
[511] Lisa Truttman, 'Best's Varnish Works.'
[512] *New Zealand Herald,* 4 August, 1892, p1.
[513] *Wise's Postal Directory,* 1894/95, p824. Cited from Lisa Truttman, 'Best's Varnish Works.'
[514] *Wise's Postal Directory,* 1896/97, p 854. Cited from Lisa Truttman, 'Best's Varnish Works.' Sourced online at https://www.scribd.com/document/7535497/Best-s-Varnish-Works.
[515] Lisa Truttman, 'Best's Varnish Works.'
[516] *Auckland Star,* 25 February, 1896, p1.

stated that S J Best and Co of the Auckland Varnish Works, Customs Street East, had placed, in Victoria Avenue, a glass case containing many articles the firm manufactured. Varnish in long phials were displayed, along with tins of varnish – Brunswick Black, terebine, wagon and carriage varnish, black lacquer and many other articles.[517]

To acquire & takeover business of varnish and paint manufactures carried on at Auckland by Paterson & Esam under name of S J Best & Co. To engage in the business of manufactures of oil colour paint varnish enamels red & white lead painters and artists requisitions stains distempers and all kinds of products or substances used for painting decorative or protective work. Also in business as glaziers paint paperhangers oil & colourman picture dealers & framers & importers, exporters & dealers wholesale/retail in paints colours glass papers oils etc.

In May 1907, a fire broke out at the New Zealand Varnish Factory in Avondale.[518] The building, which was constructed of brick and iron, contained a considerable quantity of inflammable material used in the manufacture of varnish. By some unexplained means, the mixture contained in several boilers took fire and the flames soon spread throughout the building. The stock of turpentine and gum fed the blaze, with the intense heat causing a portion of the brick wall to collapse. Machinery twisted and ironwork became distorted and took on all manner of shapes.[519] Two young men, one of them the son of the proprietor, narrowly escaped injury, and they barely got clear of the burning building before the flames engulfed the factory. The machinery was almost entirely destroyed, and the damage to the building and contents was also very extensive. The cause of the fire was not known. Luckily, however, the building and contents were insured by the South British Company, a policy of £750 covering the building, stock and machinery.[520] On 4 May 1907, days after the disastrous fire, Sealy James Best was voted onto the Avondale Road Board.[521] By the end of that year, the company was advertising the sale of high grade paints.[522]

[517] *Auckland Star,* 23 December, 1898, p2.
[518] *Auckland Star,* 3 May, 1907, p5; *New Zealand Herald,* 3 May, 1907, p5.
[519] Ibid.
[520] Ibid.
[521] *New Zealand Herald,* 7 May, 1907, p8.
[522] *New Zealand Herald,* 1 November, 1907, p2.

By 1909, Albert E Best appeared in directories as a co-proprietor of Best & Co along with Charles. In 1910, the oldest brother, Sealy James Best, appeared in the directories, as living at Riversdale Road.[523]

On 10 September 1915, Mary Best sold the "equity of redemption" of her Riversdale Road property to her eldest son Sealy J Best for the nominal sum of 10 shillings, "out of the natural love and affection" she felt towards her son.[524] Truttman states this meant her son held the right to prevent a mortgagee sale by the mortgagor as he had an interest in the property. Five days later she died and her son proceeded to pay off the remaining £200 State Advance mortgage.[525]

In late October 1919, a farewell social was put on at St Judes Hall, Avondale, for the Best family. The newspaper clipping stated: "The Best family, who are old residents, have sold their farm and residence, and are on their way to Sydney, where Mr C Best is in charge of a large varnish works."[526] Charles transferred his interest in the Avondale varnish works property to his elder brother Sealy on 5 March 1920.[527]

By 22 April 1920, a William Charles Vallance advised that he was acting as solicitor for S J Best & Co.[528] The company was incorporated under the new Companies Act as at 20 May 1920 and had the objectives of:

> "to acquire and takeover business of varnish and paint manufactures carried on at Auckland by Paterson & Esam under name of S J Best & Co; To engage in the business of manufactures of oil colour paint varnish enamels red and white lead painters and artists requisitions stains distempers and all kinds of products or substances used for painting decorative or protective work; Also in business as glaziers paint paperhangers oil and colourman picture dealers and framers and importers, exporters and dealers wholesale/retail in paints colours glass papers oils etc; Printers and bookbinders; Oils for machinery and motor vehicles; Financial and commission agents; Brokers."[529]

The registered office remained as 43 Customs Street, and the company name remained the same. However, "Paterson & Esam" appears to have been a firm connected with one Campbell Paterson, a merchant from the North Shore who was also a varnish and paint manufacturer. Truttman supposes that sometime before May 1920 his company had taken over the day to day operations of S J Best & Co, while still operating under that name.[530] By that stage, no members of the Best family were connected with the firm. Controlling interest rested with Paterson and his partner Ivo Burnet Durban Esam, with approximately

[523] *Wise's,* 1909. Cited from Lisa Truttman, 'Best's Varnish Works.'
[524] Deed 244576, DI 16A.745, LINZ records. Cited from Lisa Truttman, 'Best's Varnish Works.'
[525] Lisa Truttman, 'Best's Varnish Works.'
[526] *Auckland Star,* 24 October, 1919, p8.
[527] CT 46/215. Cited from Lisa Truttman, 'Best's Varnish Works.'
[528] Legal Statement, National Archives File. Cited from Lisa Truttman, 'Best's Varnish Works.'
[529] Certificate of Incorporation # 1920/58, National Archives. Cited from Lisa Truttman, 'Best's Varnish Works.'
[530] Lisa Truttman, 'Best's Varnish Works.'

one third going to Arthur Edward Skelton, a solicitor. By 1921, Skelton's shares were held by a Robert Burns, and Paterson had 280 more shares from Esam.[531]

In February 1921, S J Best and Co Ltd – Paint and Varnish Manufacturers advertised in the *Auckland Star* for "two boys, generally useful – wages according to ability" but the address was now 5 Alexandra Street (now Airedale Street).[532] By February 1922, the directors of the company decided to change the name to "Camp", and by order of the Court in March S J Best became the Camp Paint & Varnish Ltd.[533] By June of that year, the company was duly incorporated. However, by November 1925, Paterson had moved to Melbourne, and forfeited his shares by the end of 1926. The directors (now Esam, Burns and John Kenderdine) met in May 1929 and changed the company's name back to S J Best and Co.[534]

In 1932, the directors (with Reginald Douglas Mossman as managing director) voted to voluntarily wind up the company and employed the services of a liquidator.[535] However, the company was still in operation in 1940. Another change of name came in 1944, with the business now operating as Best Paints Ltd.[536] In 1954, the head office moved to 59 Courtney Place, Wellington and by January 1957 was in liquidation. Its only assets by then were shares in Taubman's paints.[537] These passed to Dominion Motors Ltd, "as distribution in specie". During the late 1940s, the address for valuation notices from Auckland City Council to Best Paints Ltd was care of "E C Nimon, Dominion Motors Ltd, Myers Street."[538]

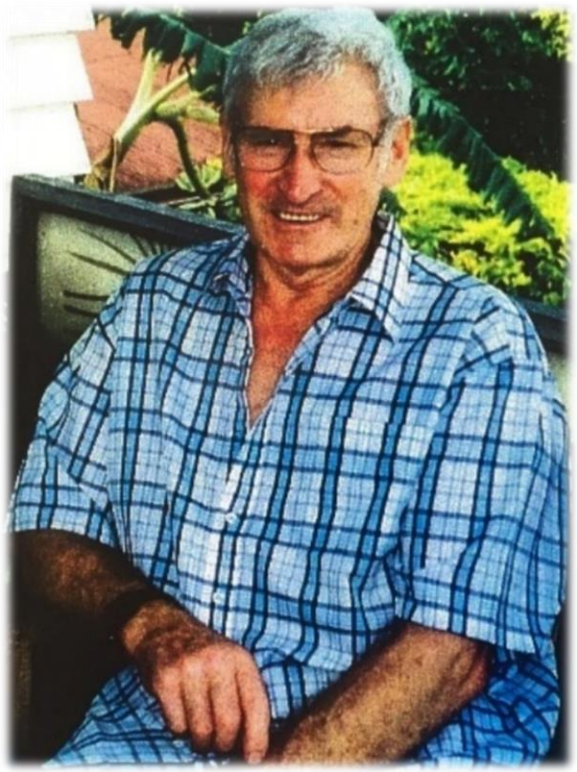
[531] Ibid.
[532] *Auckland Star,* 8 February, 1921, p1.
[533] Lisa Truttman, 'Best's Varnish Works.'
[534] Ibid.
[535] Ibid.
[536] Ibid.
[537] Ibid.
[538] Ibid.

Chapter Four

People Who Live, Work & Play on Te Whau

Many Auckland families over time have had the opportunity to experience some form of association with the Whau River – be it for a short period or indeed for a whole lifetime. Unfortunately, many memories of those times spent have not been encapsulated for future generations. Although those times and memories are now lost forever, this book has assisted in the sharing of some very special memories, poems and snippets by a number of the Whau River's past and present residents. Perhaps, by reading these stories, more memories will be triggered and additional stories will rise to the surface of the Whau.

Ronald Carl Augustin (Boat and Kayak Designer and Marine Engineer)



Living on the Whau

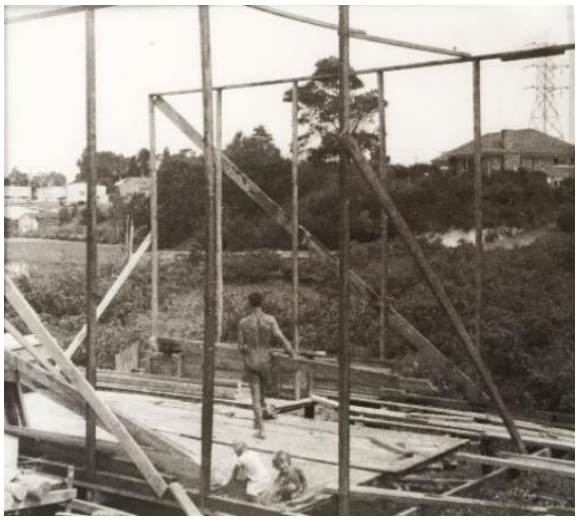
Ron Augustin was destined to live his life on the Whau River (or Wao River (wow) as it was called by his family). His first instance of living alongside its banks was as a tiny baby. His parents had rented a house at 94 Delta Avenue (corner of Delta Avenue and Crum Street) and the house backed straight onto the river. As Ron grew, however, his parents had become fearful of him falling into the creek and drowning. So, in consideration of their son's safety, the family packed up and moved to Waterview when Ron was approximately twelve months old. Ron's wife, Nancy states: 'He has been falling into that creek all his life!' It is interesting to note that the house Ron spent his first year in was later to become a workshop for his business, Ron Augustin Marine.

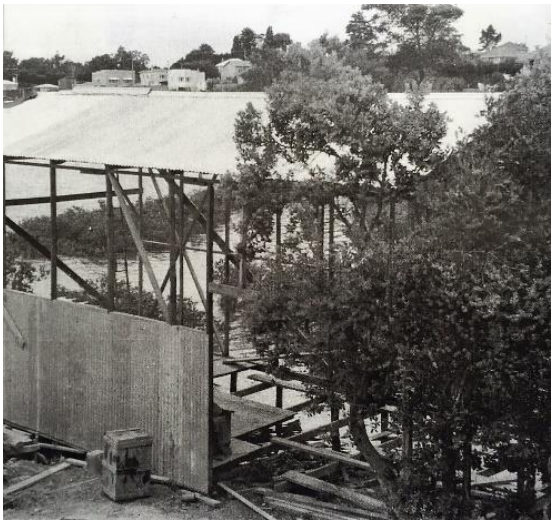
Ron was called back to the river in 1955, when, after six to twelve months of searching for the perfect section (it had to be right on the water where he could moor a boat) he fell in love with a piece of land at 37 Beaubank Road, Kelston - abutting the Whau River. The house took over three years to build and there were very few neighbouring properties at

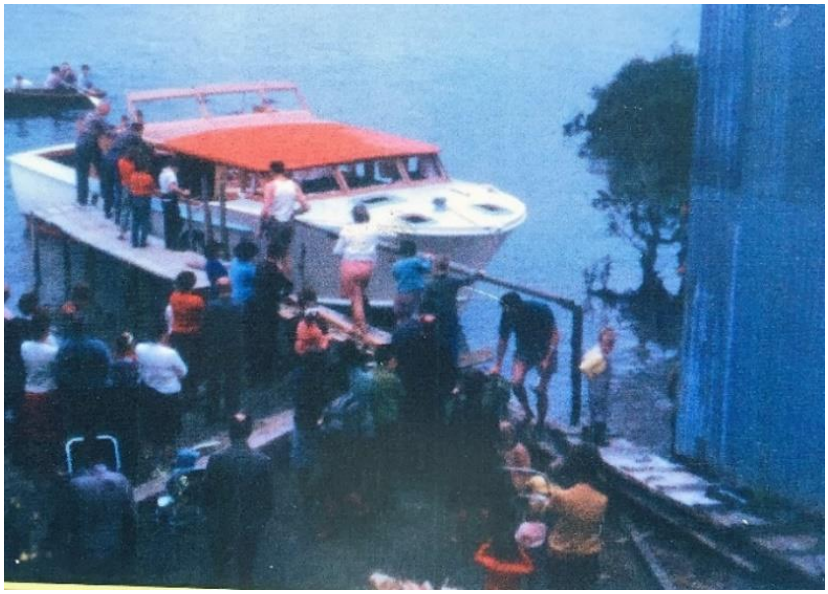
that time. Ron and Nancy were married at the end of the year in 1957 but they did not immediately move into the house as it was not quite ready and had no electricity. Instead, they lived in a caravan and a shed beside the house for the first six months of marriage. By mid-1958, the newly-weds finally moved into the nearly completed house which was to be their family home for the next 57 years. As Nancy recalls, “The house was never quite completed as there were always boats and other things needing fixing!” The Augustin’s moved away from their beloved home on September 30, 2015, due to Ron’s ailing health.

Playing on the Whau

The first boat Ron built alongside the Whau was a 16-foot launch called the Jandy. The launch was named after the Augustin’s daughter Jan Elizabeth who was nick-named ‘Jandy-Liz’. The family had many wonderful adventures on this boat. Nancy recalls: “It was the size of a kitchen table and a double bed, and our youngest child was only two months old at the time. But we could hook his carry cot up on the ceiling so he was off the floor whenever we needed the space!” However, with three young children and two adults the small cabin soon became very cramped and the family outgrew her. After returning home from a ten-day family excursion, Ron declared: “I’m going to build a big one!” Before he could start on the new launch, however, Ron needed a boat shed. He quickly set about building the shed with the ‘help’ of two of his young children. The shed was completed in February 1962 and boat building began immediately.







The Jandy II took just over two years to build. Ron's family didn't see too much of him throughout that time as he would come home from a hard day's work and go straight down to the boat shed to work on her! The building of the Jandy was also slightly hurried as the Auckland International Boat Show organisers, realising that Jandy was a very unique boat, wished for her to be shown at the Boat Show in October 1964. Of course, the ever optimistic Ron agreed to have her finished on time and on the 13th September 1964 she was launched on the Whau River with family and friends present (although she did not have a cockpit cover and was still not completely finished!). The 13th September was chosen as it was the only high tide available for getting the boat out onto the water. This 8 tonne beauty was 14 feet wide (wider than most launches) and 36 feet long. Arrangements had been made by the Auckland Boat Show organisers to transport the launch to the Epsom Showgrounds in Greenlane. During the first stage, Ron skippered the launch from his boat shed on the Whau River towards Westhaven Marina on the Waitemata Harbour. The cradle, floating on top of oil drums, was towed behind. Although the Jandy had twin diesel motors, only one motor was running, and to change gear someone had to jump off the apple box and go down below floor level to change gear and then jump back on the apple box!

Unfortunately, the timing of the tides was not quite right and the launch got stuck in the mud on the Whau for half a day! Never one to dilly-dally, Ron spent the time wisely by painting the inside of the boat. Upon finally arriving at Westhaven Marina, Ron settled down for the night on board the launch as it could not be locked up and there was no security. At 6 am the next morning, a truck, trailer and crane arrived to transport the launch on her cradle to the Boat Show. Unfortunately, the spreaders were not wide enough for this very wide boat, and others had to be obtained. It wasn't until early the next day that the launch could finally begin its overland journey. At 10

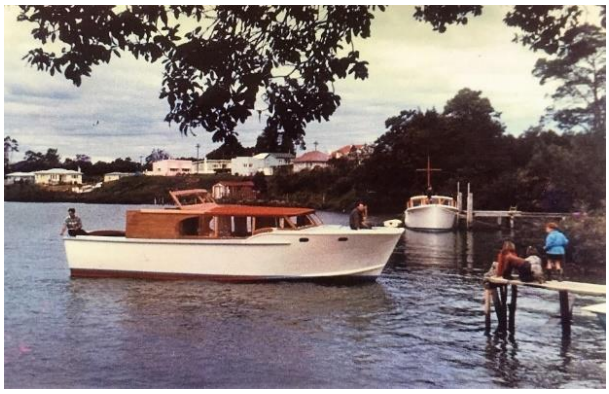
am, on a very busy Friday morning, the launch made its way slowly through the city – a very proud procession indeed! Owing to its width it clipped several 'No U-turn' signs along the way! The big truck carting the launch was followed by another smaller truck and Ron in his work truck. At the end of the line was the family car driven by a very pregnant Nancy, with three kids in the back seat! Nancy held her arm out the window and took movies as the procession drove slowly along Khyber Pass.

The boat was on show for 8 days (nights and weekend days) and for that time Ron, Nancy and the kids slept on board. One night a curious observer walked past and said out loud: "You know, I think this is a plywood boat," and knocked hard on the side three times. Nancy quickly knocked three times back! Not realising that anyone was on board, the gentleman received quite a surprise and quickly ambled away! Nancy also recalls the nights when the security guard would constantly call out, "Rover, where are you Rover? Here boy," to the guard dog. Perhaps Rover was more of a hunting dog than a guard dog as he was too busy chasing rats to respond!

The well-appointed Jandy II could sleep eight people comfortably, but it was not unusual for her to be carrying more than eight keen sailors at one time. On some holidays, up to 13 people lived on board for more than a week.

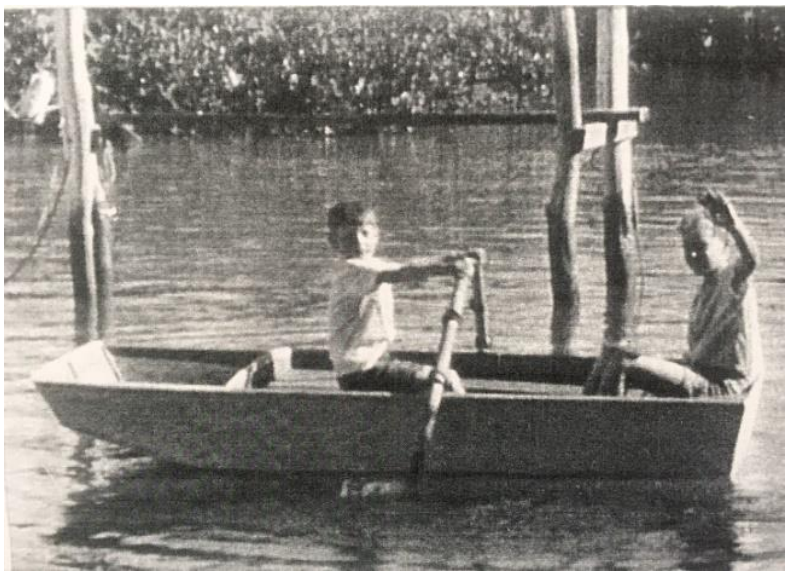
To their Coast Guard family – the Augustin's launch, when fully laden with kids and adults, was fondly called the 'Hong Kong Ferry.' During many excursions, the launch could often be seen moored in little bays with kids erupting from her cabin and spilling out onto the sand. The Augustin children (Jan, Phil, Kevin and Sandra) were never bored, as

they were always allowed to bring a friend on holiday with them.



The four Augustin children were lucky enough to spend their entire childhood living beside the Whau River. Some days they would spend trekking through the gorse tracks that led to the old rubbish tip (now Archibald Park). They would find all sorts of exciting things and have great adventures in the wilderness. I imagine that many interesting items could be found under the topsoil of Archibald Park today!

The Augustin children and their friends could most often be found making their own boats in the back yard and then trialling them for seaworthiness on the Whau.



At other times, they would be found on the jetty next to the boat shed. Sometimes they would fish from it, but most of the time they preferred to take the kayaks out and fish on the river as that was much more fun. Nancy recalls a Mr and Mrs Orr who lived in a garage a few doors down at number 43. Joan Orr could often be found sitting in her back-yard fishing and catching plenty of snapper and kahawai. The Augustin's would also sometimes put nets out to catch kahawai, but after Pacific Oysters arrived, the nets would be shredded to bits and that put an end to it! Nancy sadly notes that there used to be lots of different fish in the Whau, including the occasional flounder, but with the construction of storm water drains and houses, along with general pollution of the river, fishing became a much rarer pastime. However, Nancy can recall noticing many, many tennis balls floating

past the house! These were the good old days when kids would make their own fun playing outside.

Page 10 WESTERN LEADER, Tuesday, December 10, 1974.

3 children rescue launch

Three New Lynn youngsters in their dinghy went to the aid of a large launch having difficulty navigating the Whau River recently.

About 40 members of the Auckland Maritime Society aboard the launch "Rotoiti" watched in admiration as the youngsters successfully piloted the boat up the river to the New Lynn Bridge.

The members were aboard for an excursion trip on to the Hauraki Gulf but this was cancelled because of rough seas. Trouble came when the launch had to rev off a mudbank for a second time and so three young sailors came to the rescue.

Sandra Augustin, aged 10, and her brother, Kevin, 12, joined with 15-year-old Stephen Bellette to pilot the launch up the river using their old dinghy.

They all live near the river and the Augustin children's father is a well-known boat designer.

The three rowed ahead of the launch with a long pole and took soundings. For an hour upstream and back, they rowed, sounded and beckoned or stopped the following boat.

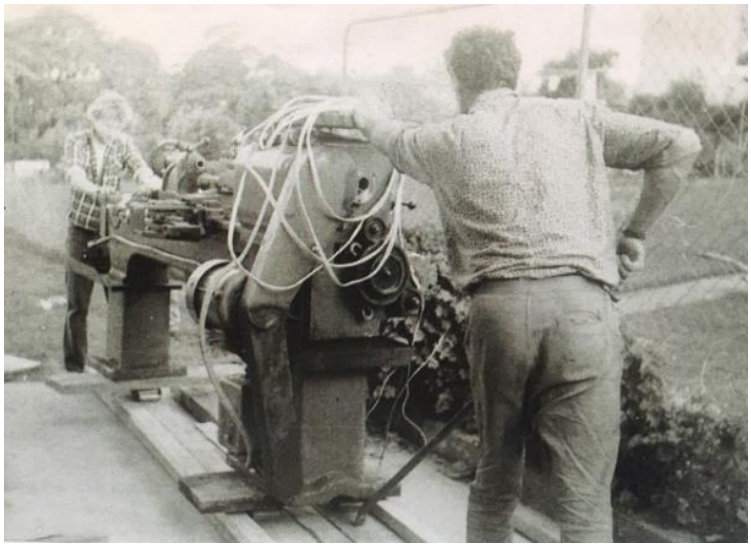
The society's members pasessed the hat around and handed a donation to their young navigators for helping them.

In December 1974, Sandra and Kevin Augustin and their friend Stephen became 'just a little bit famous in the West' for rescuing the launch *Rotoiti* with 40 members of the Auckland Maritime Society aboard. The *Rotoiti* had become stuck in mud and was having trouble navigating the Whau River. The youngsters successfully piloted the boat up the river to the New Lynn bridge.

Three young navigators at work recently on the Whau Creek.

Neighbourhood kids could frequently be found at the Augustin's – always intrigued with what 'Mr A' was up to next! The Augustin children very seldom needed to go elsewhere to play, as there was always something interesting happening in their own back yard. As the kids got older, Ron would teach his children and their friends how to use tools (lathes and drill presses etc) from his well-stocked workshop. He was happy for them to use the tools and the workshop so long as they respected it and were safety-conscious. It was not an uncommon sight to see the back yard covered in kayaks and paddles either – sometimes up to 23 at one time! The Augustin boys loved it as they seldom had to mow the lawns!

Not only would neighbourhood kids flock to the Augustin's house to make things, they would also come over simply to talk to either Nancy or Ron. As was often the case in the 1970's, kids couldn't always talk to their own parents about certain things, but they always knew they could find a listening ear and a kind word from Mr and Mrs A.



When Ron wasn't at work, he would spend his time experimenting and inventing new things. For instance, he would often take one of his kayaks out onto the Whau to trial newly designed paddles. He even built a hovercraft for his children in the back yard. With a sheet of plywood, a drum, a fan, a motor and some skirting, he produced an ingenious contraption that would skim across the lawn with ease. The kids had a wonderful time playing with their new toy! Ron went on to build a marine hovercraft with an outboard motor which was tested on the Whau River. The hovercraft would hover across the mud and once it hit the water, the outboard would drop down and off it would go across the channel. It was just one of the many things that Ron invented. Once he finished a project, he didn't dwell on it, he would simply move on to the next project!

One such project contrived by Ron, transpired on May 9th, 1992. A small group of paddlers, led by Ron and Nancy, set off on the first 59km modern-day sea kayak circumnavigation of Auckland, using the same two short portages that Maori had often used to haul their canoes across the isthmus.[539] Although there is approximately three and a half hours difference in the ebb and flow of the tide on the shorelines of Auckland's twin harbours, every once in a while the incoming and outgoing tide on the Waitemata Harbour and Manukau Harbour coincide precisely, making it possible to complete the journey in one stage.[540] Ron and Nancy and their eager group set off from St Helier's beach at 6.20 am and paddled up the harbour with the incoming tide. They reached the harbour bridge at 7.50 am and after negotiating the Meola reef, they entered the Whau River.[541] With the tide still on their side, the paddlers followed the Whau until it became a narrow creek behind Avondale Racecourse. Unfortunately, they were blocked from going any further by a sewer pipe and rail line. In earlier times, Maori waka would have been able to paddle further upstream. Ron and his small group thus portaged their canoes the 3.5 km to Green Bay using specially designed wheeled trolleys. (In the 19th century just 1600m separated Whau Creek from Green Bay.)[542] It took the group approximately one hour on foot. By noon, the group left Green Bay with the incoming tide on the Manukau. One hour later the water had dwindled down to a trickle, being replaced by black and foul mud behind the old Westfield railway station.[543] From that point, the Tamaki River was less than 1000m away so it was out of the

[539] Colin Moore, "Shorelines: Paddle your way around Auckland," *The New Zealand Herald,* Monday February 25, 2002.
[540] Ibid.
[541] Ibid.
[542] Ibid.
[543] Ibid. The Westfield station is located at the western end of Portage Road, Otahuhu, which marks the narrowest point of the Auckland Isthmus.

kayaks and on with the wheels again! Making a slightly longer overland route than necessary, Ron, Nancy and friends headed for a boat ramp on the Tamaki River. With the tide on the turn, they paddled 18km down river, around west Tamaki Head, and landed at St Helier's beach at 6 pm.[544] In just under twelve hours they had accomplished their goal and it was yet another adventure that Ron could proudly tuck under his belt

The Whau River was not only a place to explore, create and paddle for Ron – it was also a place for quiet reflection. Nancy recalls that after particularly bad days at work, Ron would come home and head directly to the river's edge. He would sit quietly for a time, looking wistfully into either water or mud, depending on the tide, before coming inside to be with his family. The kids would know not to rush Daddy with questions for a little while, and Ron would always make an apology to his family for his 'alone' time.

Working on the River

After finishing school, Ron went to work for his father at 78 Federal Street at Carl Augustin Welding Co. Several years later he bought the business from his father and in January 1958, moved the workshop to 7 Puriri Street, New Lynn. This was a very busy time in Ron's life, as he was newly married, with a house nearly ready to move into and a shift to a new workshop premises. Several years later, Ron renamed the business to Augustin Marine.

Importing marine motors was difficult after the war so Ron would modify used car engines such as Ford 10's. He would wrap the manifolds with copper water jackets which were then used to water-cool the engines. As a mail-order business, customers would also send in the measurements of their boats and motors and Ron would advise on what sort of propeller to use. He had his own design of propellers which would be sent out for casting, and then upon return, Ron would polish them up before sending to customers all around the Pacific. He sold thousands of these. He also sold other boat fittings – in fact, a catalogue filled with marine products. He also produced small punts for duck shooting and marine ply mini boats, which had stripped down lawn mower engines placed in them.

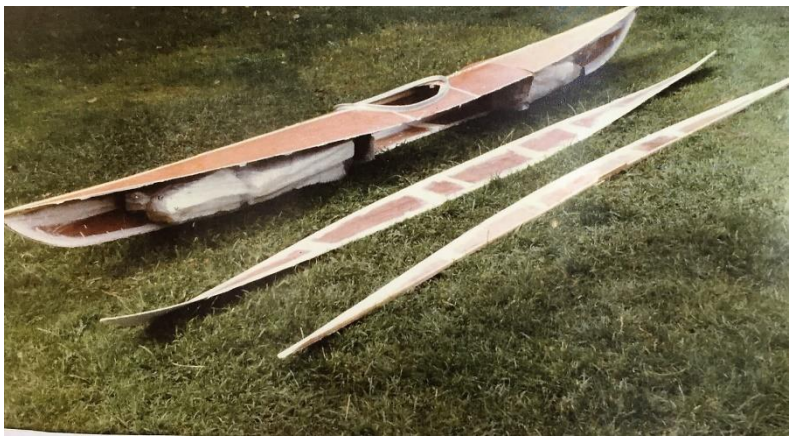
By the mid-1960's, Ron had moved on to larger premises at 11 Portage Road where he was to work for several years until the move to 3 Hetana Street. However, these new premises posed a bit of a challenge! The building had been burnt out and the inside was black as night. Not one to be overly concerned, Ron whipped out a paint roller and some white paint and he

[544] Ibid.

soon had the place looking light and bright! At that time, Ron was also building dinghies during the weekends.

By 1971, the business was on the move again – this time to 94 Delta Avenue, the house Ron had lived in as a baby. He continued working from Delta Avenue on his boat plans, propellers, motor conversions and other marine requirements until 1973. He then made the decision to work from his home workshop just above the Whau (making sure it was okay with all his neighbours first!).

After an exceptionally brilliant kayaking trip on the Wanganui River in 1974, Ron and Nancy made the decision to start up a commercial kayak touring business. They were in need of the right motivation to get out on the water together more often, and this idea was right on the button! The trips were booked twice monthly and consisted of either day trips or overnight camping trips. At the same time, Ron also started designing and building go-carts for kids and he had also designed his first river canoe.



Ron had real talent for designing sea kayaks. The Sea Bear sea kayak range had started off as a simple kit set. Ron had declared one day that he wanted to paddle to Great Barrier but Nancy told him 'he was mad because it takes long enough in a launch let alone a kayak!' Not one to shy from a task, he set about to make it happen. He made the first kayak out of scraps of ply and confidently cut the shapes he thought would be right. He then sewed the pieces together using fishing line and masking tape (so he could pull it apart again after his trial paddle). He paddled from Waiheke to Rakino and although it leaked a bit he calmly bailed the water out as needed. Nancy ran alongside with the launch to pick up the bits if necessary! Ron was quite happy with this first attempt, stating: 'yeah this is pretty good but I just need to change the shape – the bow needs to be a little higher so it goes up and over rather than through the waves.'

Upon arriving back home, Ron made the required alterations, using polystyrene for buoyancy. One night soon after, he went out before dinner to trial the improved kayak. It wasn't long before Nancy saw him walking up the back yard from the Whau dripping wet. Ron came inside and muttered, "Wrong brand of masking tape." The kayak did hold together with the fishing line but it leaked like mad and went down with all hands!

It was all trial and error with Ron but he always succeeded in the end! Ron sold his full-sized paper patterns for dinghies and smaller beach canoes. These required between one and three sheets of plywood, some fishing line, glue and tape to construct. After the shapes were cut, holes were drilled along the edges of the ply and the pieces were sewn together using fishing line – pulled tightly as it was sewn. The craft was then sealed with fibreglass tape. Ron even developed his own polyester tape called 'Ronco' tape which was sent out with every kitset. His sea kayak kitsets were pre-cut ready for assembly.

Ron founded 'Paddling Perfection' in the early 1990s and although the Sea Bear range is now nearly thirty years old, the original design has never changed. The kayaks very quickly became popular and it wasn't long before customers would come to Ron with their own ideas. He would then turn those ideas into reality. For example, the Adventure Philosophy Team, consisting of Graham Charles, Mark Jones and Marcus Waters, challenged Ron to design a kayak that would withstand 35 days of freezing temperatures in the Antarctic Peninsula. It had to be well-insulated and strong enough to be lifted onto hooks in ships (and to withstand a bit of a beating from the many concrete-like icebergs they would encounter!) Ron devised the Polar Bear Sea Kayak by making major structural refinements to his tried and proven Sea Bear kayak design. It took him a full year to design and build but the result was tremendous. The Whau River was his testing ground and he spent a lot of time on the water trialling each component.

The Adventure Philosophy Team discussed the Polar Bear sea kayak in their book recalling their 2001 adventure:

> *Awaiting trial was Macpac's polar kayaking clothing, plus three polar sea kayaks that had emerged from the Auckland-based workshop of Ron Augustin and his company Paddling Perfection. Augustin devoted $NZ30,000 to designing and testing kayaks that could endure cold, ice bashing and rocky surf landings, and were stable enough for tricky water-to-ice exits, deep enough to carry a lot of gear and yet sufficiently fast for long-distance paddling. It was a challenge, but Augustin, the 'mad scientist' of New Zealand kayak manufacturers, called upon 20 years of kayak designing experience and came forth with the Polar Bear sea kayak. 'There could be no turning back for the boys once they were down there, so the boats had to be completely bulletproof,' Augustin said. He wasn't exaggerating: five layers of Kevlar can stop a 0.303 calibre bullet in a bulletproof vest. Three layers of Kevlar reinforced the Polar Bear's bow against ice and*

surf landings. All the components were tested in the deep freeze to see whether they could withstand polar temperatures.[545]

Ron and Nancy were gifted a copy of the book by the Philosophy Team and the inscription reads: *"Thanks Ron for your enthusiastic support, without which, this venture would never have begun."* – The Adventure Philosophy Team.

Several years after the Antarctic journey was completed, the unique kayak that Mark Jones had used for the expedition was stolen from Ron's boat shed, along with other valuable items, including an outboard motor. The media attention concerning the theft of this unique kayak stopped the thief from attempting to sell it as now the kayak was easily identifiable. Disgruntled, the thief chopped the kayak into four pieces and hid each piece in four different places around Auckland.

Page 4 WESTERN LEADER, Thursday October 16, 2003

Raid on boat shed nets future museum exhibit

By MELANIE GLOVER

A well-travelled kayak, destined for the National Maritime Museum, has gone missing from a Kelston boat shed.

The bright yellow kayak, which has travelled around the Antarctic, was taken from a locked shed near Beaubank Rd, on the Whau Creek, between October 4 and 6.

It is six metres long and was specially designed and built by Ron Augustin for an Antarctic expedition.

Mr Augustin spent a year designing it.

It is strong enough to break through ice and light enough for kayakers to drag.

Its first expedition was in January, 2001, when three New Zealanders spent 35 days paddling south beside the Antarctic Peninsula.

They camped on the ice, braving the cold, winds, rolling icebergs and leopard seals to reach the Antarctic Circle, a journey of more than 800 kilometres.

The trio travelled to South America in January and paddled up the Beagle Channel where they climbed glaciers and mountains, carrying supplies and climbing gear in their New Zealand-made kayaks.

MISSING VESSEL: Have you seen this bright kayak?

Two of the kayaks were left in South America because of transport difficulties, but the third was brought back to New Zealand.

Mr Augustin and his wife, Nancy, were to present it to the National Maritime Museum later this year.

West Auckland police burglary analyst Bryony Brown says the distinctive kayak is covered in logos.

Other items missing from the boat shed include paddles, a diamond saw and a Flymo motor.

Two other missing kayaks were later found in mangroves near the Ash St bridge.

Information, phone: Bryony Brown 839-0696.

Fortunately, the thief was caught and the four missing pieces were retrieved. Ron at once took to the task of joining the kayak back together and it was soon as good as new! Gemma, the Augustin's granddaughter, paddled the repaired kayak many times after the incident without so much as a small leak.

On Sunday 23rd March 2014, John Hotham and Peter Sommerhalder of the Auckland Canoe Club organised a celebratory paddle from Point Chevalier to Kelston in honour of Ron. On arriving at the boat ramp at Archibald Park, Ron and Nancy were presented with a special award and a bunch of flowers. Thirty Sea Bear kayaks paddled the Whau River that day, and the paddlers included Ron and Nancy's granddaughter, Gemma. Mark Jones, from the Adventure Philosophy Team, had borrowed his expedition kayak especially for the celebratory paddle on the Whau but on discovering that Ron and Nancy were selling up, he immediately jumped at the opportunity to buy the kayak.

[545] Graham Charles, Mark Jones, Marcus Waters with Sarah Moodie. *The Frozen Coast: Sea Kayaking the Antarctic Peninsula,* (Craig Potton Publishing, Nelson, New Zealand, 2004) p 26.

The Augustin's, in their later working lives, were well-known in kayaking circles as the 'Geriatric Gypsies,' and they were very proud of the name given to them by their friends! At the beginning of every season they would set off with their van and trailer in tow, transporting up to 15 pre-ordered kayaks (20 feet long) at one time. The load of kayaks would at times be worth up to $40,000 so it was always a very careful drive! It was a non-stop drive too, with one of the 'geriatric gypsies' driving while the other one was sleeping! The kayaks were delivered to many tourist operators around New Zealand.

Volunteer Work

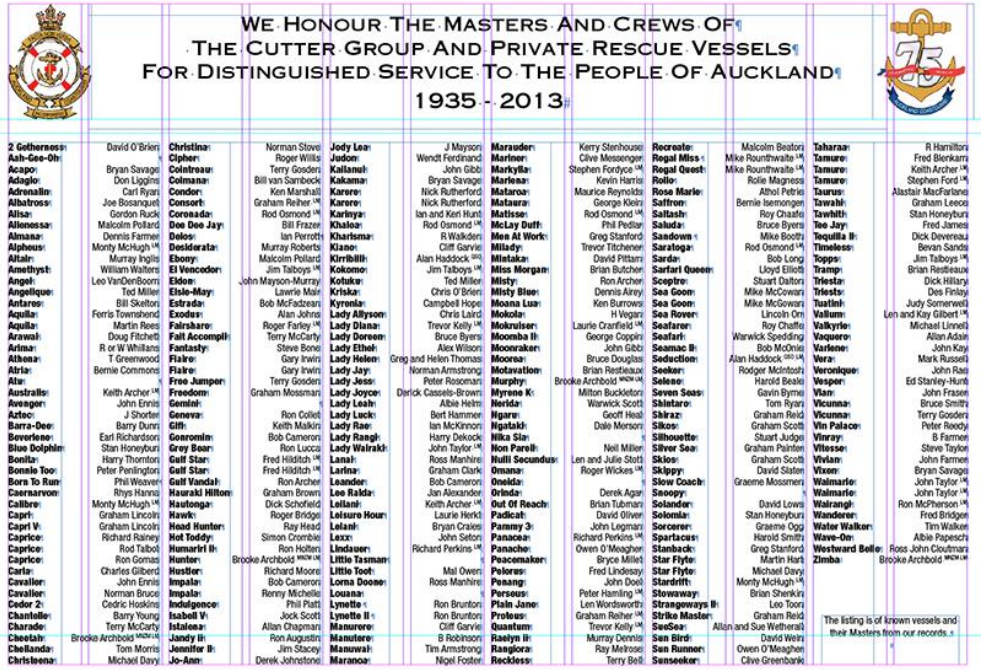
Not a couple content to sit still, Ron and Nancy were always very active in their community. Ron was a Venturer Scout leader and Nancy was a Guide leader for many years. They went on many great camping and kayaking adventures together and the kids involved in both movements absolutely adored the Augustin's! Ron taught the boys everything there was to know about building boats and water safety and Nancy's girls never turned down a chance to go camping or boating with Mrs A. Quite often the two units would mix and go on joint camping trips or build boats together. Although they were busy raising their own family, Ron and Nancy always made time for others in their community.

The Augustin's volunteer work did not stop at helping the Scout and Ranger communities. They were also members of the Te Atatu Boating Club for some years, helping with working bees and jetty repairs, along with providing Safe Boating lectures and enjoying numerous boating activities with other club members.

They were also heavily involved in the Auckland Volunteer Coastguard for 14 years. During their years with the organisation Ron and Nancy were accredited with many rescues and saved quite a few lives. The Augustin's were rostered on for one week out of every ten. For that week, they would go to work during the day, but had to be available by phone to rush down to Westhaven Marina if needed. On Friday night, through to Sunday night they would be out on the water, anchored nearby and on radio call. As Ron once jokingly said, 'We paid $60 a year for the privilege of towing other blokes around the gulf!' Many times, the Jandy would have to rescue boaters who ran out of petrol and tow them back to shore again. Coastguard duties were performed all year around, although there was very little to do in

the winter time. Summer, however, was a different story. Nancy recalled one particular day, where within two hours the Jandy had towed three different boats that had run out of fuel! Some weekends were extremely busy, with no time to stop and prepare a meal.

The Augustin's developed many great friendships throughout the years with their Coastguard colleagues and they would often plan family boating excursions together. Nancy recalls that time of their lives as being a lot of fun. The Jandy II, with Ron as her master, is listed on the honour roll of *The Cutter Group and Private Rescue Vessels for Distinguished Service to the People of Auckland 1935-2013* at the Auckland Coastguards Headquarters.[546]



WE HONOUR THE MASTERS AND CREWS OF
THE CUTTER GROUP AND PRIVATE RESCUE VESSELS
FOR DISTINGUISHED SERVICE TO THE PEOPLE OF AUCKLAND
1935 - 2013

2 Gethernoss	David O'Brien	Christina	Norman Stove	Jody Lea	J Mayson	Marauder	Kerry Stenhouse	Recreate	Malcolm Beaton	Taharaa	R Hamilton
Ash-Gee-Oh		Cipher	Roger Willis	Judon	Wendt Ferdinand	Mariner	Clive Messenger	Regal Miss	Mike Rounthwaite	Tamure	Fred Blenkarn
Acapo	Bryan Savage	Cointreau	Terry Gosden	Kallanuh	John Gibb	Markylla	Stephen Fordyce	Regal Quest	Mike Rounthwaite	Tamure	Keith Archer
Adagio	Don Liggins	Colmana	Bill van Sambeck	Kakaman	Bryan Savage	Marlena	Kevin Harris	Rollo	Rolie Magness	Tamure	Stephen Ford
Adrenalin	Carl Ryan	Condor	Ken Marshall	Karere	Nick Rutherford	Matarua	Maurice Reynolds	Rose Marie	Athol Petrie	Taurus	Alastair MacFarlane
Albatross	Joe Bosanquet	Consort	Graham Reiher	Karere	Nick Rutherford	Mataura	George Klein	Saffron	Bernie Isemonger	Tawahi	Graham Leece
Alisa	Gordon Ruck	Coronada	Rod Osmond	Karinya	Ian and Keri Hunt	Matisse	Rod Osmond	Saltash	Roy Chaafe	Tawhiti	Stan Honeybun
Allenessa	Malcolm Pollard	Doo Doo Jay	Bill Frazer	Khaloa	Rod Osmond	McLay Duff	Phil Pedlar	Saluda	Bruce Byers	Tee Jay	Fred James
Almana	Dennis Farmer	Delos	Ian Perrott	Kharisma	R Walkden	Men At Work	Greg Stanford	Sandown	Mike Booth	Tequilla II	Dick Devereau
Alpheus	Monty McHugh	Desiderata	Murray Roberts	Kiano	Cliff Garvie	Milady	Trevor Titchener	Saratoga	Rod Osmond	Timeless	Bevan Sands
Altair	Murray Inglis	Ebony	Malcolm Pollard	Kirribilli	Alan Haddock	Mintaka	David Pittam	Sarda	Bob Long	Topps	Jim Talboys
Amethyst	William Walters	El Vencedor	Jim Talboys	Kokomo	Jim Talboys	Miss Morgan	Brian Butcher	Sarfari Queen	Lloyd Elliott	Tramp	Brian Restieaux
Angel	Leo VanDenBoom	Eldon	John Mayson-Murray	Kotuku	Ted Miller	Misty	Ron Archer	Sceptre	Stuart Dalton	Triesta	Dick Hillary
Angelique	Ted Miller	Elsie-May	Lawrie Mair	Kriska	Chris O'Brien	Misty Blue	Dennis Airey	Sea Goon	Mike McGowan	Triesta	Des Finlay
Antares	Bill Skelton	Estrada	Bob McFadzean	Kyrenia	Campbell Hope	Moana Lua	Ken Burrows	Sea Goon	Mike McGowan	Tuatini	Judy Somerwell
Aquila	Ferris Townshend	Exodus	Alan Johns	Lady Allyson	Chris Laird	Mokoia	H Vegan	Sea Rover	Lincoln Orr	Vallum	Len and Kay Gilbert
Aquila	Martin Rees	Fairshare	Roger Farley	Lady Diana	Trevor Kelly	Mokruiser	Laurie Cranfield	Seafarer	Roy Chaffe	Valkyrie	Michael Linnell
Arawai	Doug Fitchett	Fait Accompli	Terry McCarty	Lady Doreen	Bruce Byers	Moomba II	George Coppin	Seafarl	Warwick Spedding	Vaquero	Allan Adair
Arima	R or W Whillans	Fantasty	Steve Bono	Lady Ethel	Alex Wilson	Moonraker	John Gibb	Seamac II	Bob McOnie	Varlene	John Kay
Athena	T Greenwood	Flare	Gary Irwin	Lady Helen	Greg and Helen Thomas	Moorea	Bruce Douglas	Seduction	Alan Haddock	Vera	Mark Russell
Atria	Bernie Commons	Flaire	Gary Irwin	Lady Jay	Norman Armstrong	Motavation	Brian Restieaux	Seeker	Rodger McIntosh	Veronique	John Rae
Atu		Free Jumper	Terry Gosden	Lady Jess	Peter Roseman	Murphy	Brooke Archbold	Seleno	Harold Beale	Vesper	Ed Stanley-Hunt
Australis	Keith Archer	Freedom	Graham Mossman	Lady Joyce	Derick Cassels-Brown	Myreno K	Milton Buckleton	Seven Seas	Gavin Byrne	Vian	John Fraser
Avenger	John Ennis	Gemini		Lady Leah	Albie Helm	Nerida	Warwick Scott	Shiitaro	Tom Ryan	Vicunna	Bruce Smith
Aztec	J Shorter	Geneva	Ron Collet	Lady Luck	Bert Hammer	Ngara	Geoff Heal	Shiraz	Graham Reid	Vicunna	Terry Gosden
Barra-Dee	Barry Dunn	Gift	Keith Malkin	Lady Rae	Ian McKinnon	Ngatakh	Dale Merson	Sikos	Graham Scott	Vin Palace	Peter Reedy
Beverlene	Earl Richardson	Gonromin	Bob Cameron	Lady Rangi	Harry Dekock	Nika Sia		Silhouette	Stuart Judge	Vinray	B Farmer
Blue Dolphin	Stan Honeybun	Grey Bear	Ron Lucca	Lady Walrakh	John Taylor	Non Parell	Neil Miller	Silver Sea	Graham Painter	Vitesse	Steve Taylor
Bonita	Harry Thornton	Gulf Star	Fred Hilditch	Lanai	Ross Manhire	Nulli Secundus	Len and Julie Stott	Sklos	Graham Scott	Vivian	John Farmer
Bonnie Too	Peter Penlington	Gulf Star	Fred Hilditch	Larina	Graham Clark	Omana	Roger Wickes	Skippy	David Slaten	Vixen	Bryan Savage
Born To Run	Phil Weaver	Gulf Vandal	Ron Archer	Leander	Bob Cameron	Oneida		Slow Coach	Graeme Mossmen	Walmarie	John Taylor
Caernarvon	Rhys Hanna	Hauraki Hilton	Graham Brown	Lee Ralda	Jan Alexander	Orinda	Derek Agar	Snoopy		Walmarie	John Taylor
Calibre	Monty McHugh	Hautonga	Dick Schofield	Leilani	Keith Archer	Out Of Reach	Brian Tubman	Solander	David Lowis	Walrangi	Ron McPherson
Capri	Graham Lincoln	Hawk	Roger Bridge	Leisure Hour	Laurie Herkt	Padicah	David Oliver	Solomia	Stan Honeybun	Wanderer	Fred Bridger
Capri V	Graham Lincoln	Head Hunter	Ray Head	Leland	Bryan Craies	Panmy 3	John Legman	Sorcerer	Graeme Ogg	Water Walker	Tim Walker
Caprice	Richard Rainey	Hot Toddy	Simon Crombie	Lexx	John Seton	Panacea	Richard Perkins	Spartacus	Harold Smith	Wave-On	Albie Papesch
Caprice	Rod Talbot	Humariri II	Ron Holten	Lindauer	Richard Perkins	Panacho	Owen O'Meagher	Stanback	Greg Stanford	Westward Bell	Ross John Cloutman
Caprice	Ron Gomas	Hunter	Brooke Archbold	Little Tasman		Peacemaker	Bryce Millet	Star Flyte	Martin Hart	Zimba	Brooke Archbold
Carla	Charles Gilberd	Hustler	Richard Moore	Little Toot	Mal Owen	Peloros	Fred Lindesay	Star Flyte	Michael Davy		
Cavalier	John Ennis	Impala	Bob Cameron	Lorna Doone	Ross Manhire	Penang	John Doel	Stardrift	Monty McHugh		
Cavalier	Norman Bruce	Impala	Renny Michelle	Louana		Persous	Peter Hamling	Stowaway	Brian Shenkin		
Cedor 2	Cedric Hoskins	Indulgence	Phil Platt	Lynette	Ron Brunton	Plain Jane	Len Wordsworth	Strangeways II	Leo Toon		
Chantelle	Barry Young	Isabell V	Jock Scott	Lynette II	Ron Brunton	Proteus	Graham Reiher	Strike Master	Graham Reid		
Charade	Terry McCarty	Islalena	Allan Chapman	Manurere	Cliff Garvie	Quantum	Trevor Kelly	SeaSar	Allan and Sue Wetherall		
Cheetah	Brooke Archbold	Jandy III	Ron Augustin	Manutere	B Robinson	Raelyn III	Murray Dennis	Sea Bird	David Weiss		
Chellanda	Tom Morris	Jennifer II	Jim Stacey	Manuwai	Tim Armstrong	Ranglora	Ray Melrose	Sun Runner	Owen O'Meagher		
Christeena	Michael Davy	Jo-Ann	Derek Johnstone	Maranoa	Nigel Foster	Reckless	Terry Bell	Senseeker	Clive Greenbank		

The listing is of known vessels and their Masters from our records.

Ron continued to amaze people with his engineering mind, even after he had entered the Ons Dorp Care Centre in the last months of his life. He calculated that the door to his room must be left at a 30-degree angle and another to be completely shut so that the light didn't come through the hinge and shine on his face at night. He couldn't speak but he wrote notes to the nurses and the crosser he became, the bigger the letters so they knew they were in trouble!

Ron died peacefully at the Ons Dorp Care Centre on the 25th February 2016, at the age of 84. He left behind a devoted wife and family. He also left a living legacy – as the Whau River brims to overflowing with many great moments and happy memories of an intelligent, adventurous, inventive, loving family man who lived, worked and played on the Whau.

[546] Auckland Coastguard Inc. website at http://www.auckland-coastguard.org.nz/Pages/historycuttergroup.html.

Joan Gasparich – Growing up on Lynwood Road in the 1940s

Sometimes nostalgia creeps up on us when we don't expect it. A sense of déjà vu overwhelms us. This is the feeling Joan Gasparich encountered while on a planned walking group trip around the Koromiko Street area in early 2016. As she walked across the Koromiko Street bridge many happy memories of her childhood bubbled to the surface. Although many of the houses had now been pulled down and landmarks had disappeared, she could still picture the area as she remembered it as a very young child in the 1940s.

The phot on the left shows the Brame children with neighbours in the backyard of the Brame property. Joan is seated second from left (at the back), Barb is at front centre. To her right is little brother Bob, and oldest brother Don is at the far right. The photo on the right is of the front of the family home. Photos courtesy of Joan and Barbara (nee Brame).

Joan grew up in a very close-knit family (the Brame family) with her mother, father, two brothers, Bob and Don, and older sister Barbara. They lived at No. 107 Lynwood Road, which was situated at the end of the cul-de-sac on the right-hand side. There was no barrier at the end of the road back in the 1940s-1960s when Joan and her siblings lived there, even though it was quite a steep bank. It was simply the way to the exciting Whau River - a wonderful place to swim and play for the many local children![547] The photo below on the left shows the end of the cul-de-sac on Lynwood Road (note there was no barrier of any kind). Barbara took this photo from the driveway of the Brame family home. The photo on the right shows an aerial view of the cul-de-sac today – with a metal barrier positioned at the Whau River end.

[547] Like many residents in the local area, Joan grew up speaking of the Whau as the 'wow'.

A group of kids from half a dozen houses at the end of the cul-de-sac hung out together throughout their school years. Joan recalls that she had a very idyllic childhood and there was a great community feeling. Joan left the area when she married at 23 years of age.

Both Barbara and Don were a bit older and spent time with their own group of friends. Don was friends with Ron Augustin (also remembered in this chapter for his hugely interesting life on the river. Don was also friends with Warwick and Bill Meehl. Warwick and Don would frequently swim across to the mangrove island in the middle of the Whau and then across to Canal Road. It was full of orchards in those days.

Bob (three years younger than Joan), along with friend Gloria and several other neighbourhood children spent their summer months swimming in the waters of the salt water tidal river. As Joan recalls there were very few mangroves on the river bank near her home. However, there was a lovely grassy bank that the kids made full use of. They would pile onto homemade trollies, 'charlie browning down the hill' while hanging on tight to the sides. At the bottom of the hill they would all pile out onto the grass in fits of laughter. Joan remembers the roads were not tar sealed – just gravelled. Fun was also to be had climbing the macrocarpa trees and coming face to face with giant wetas! Barb recalls chasing and catching bees in the summer time, observing them for a while before letting them go again.

The neighbourhood kids always intuitively knew when to meet up for a swim or a play – Joan calls it the 'grapevine telepathy'! The kids would all race out of their houses in the morning and roar down the street in their togs towards the Whau. There they would skid gleefully down the muddy, grassy banks, splashing into the water. Quite often they would wade into the muddy river up to their thighs and elbows, getting absolutely covered in mud from head to toes. They would eventually wash the mud off and get right back into the water again!

The end of the cul-de-sac on Lynwood Road looking out over the jetty and Whau River. Photos courtesy of Barb and Joan (Brame).

However, the deep channel that remained when the tide went out daunted Joan and her friends. There was a general fear of drowning in the channel and very few swam in its depths. As far as Joan knew, the neighbourhood parents never worried about their children drowning on the river. The kids would be away from their houses all day without a care in the world and would always return safely at the end of the day.

High tides were a thing of major excitement for the kids as the water would rise right to the top of the grass verge. Barb recalls all the kids in the neighbourhood would wait in anticipation of full moons, knowing a high tide was due! When it arrived, the word would go out – "King tide, king tide!' - echoing around the neighbourhood and then the kids were off! They would jump carelessly off the jetty, not knowing what they might hit but always managing to reach the surface safely anyway! Joan recalls a 'shark incident' when she was quite young. Whether it was an actual shark or a dark log – it is not known – but it put the kids off swimming for a couple of days! The river wasn't just used for swimming either. It was a great place for eeling too! Joan and Barb did not partake in eeling much but they remember that their brothers did.

Barb and Joan recall their younger brother Bob getting very sick at the age of approximately 5 years old. The doctor was called in every day for several weeks and he was extremely ill. It was presumed Bob had picked up bacteria from foul-smelling waste that came out of a pipe in a small residential rivulet in the Koromiko Road area. This incident of 'waste leakage' would not have been uncommon and was yet another example of the perpetual polluting of the Whau River.

The Whau River, and the small neighbourhood cul-de-sac was the Brame children's whole world throughout their childhood years (apart from their once yearly trip with Mum to the Farmers store playground in the city). Both Barb and Joan cherish the wonderful memories that were created at the family home at no. 107 Lynwood Road - and they wouldn't change a thing about their childhood there.

Gloria Jean Ritchie

Gloria grew up at number 111 Lynwood Road, Kelston. She lived two doors down from Joan Gasparich (Brame) and slightly closer to the Whau Creek. They grew up together as neighbours and best friends and still see each other on a regular basis.

The Ritchie family home, 111 Lynwood Road. Photo courtesy of Gloria Carlsen (nee Ritchie).

There were eight members in Gloria's family – six children and Mum and Dad. They all lived together in a two-bedroomed house. One bedroom had two sets of bunks, the other bedroom was used by Gloria and one of her sisters. Their parents used the living room as a bedroom. Gloria recollects the inside walls being covered in scrim and wallpaper and when the wind blew it would balloon both the scrim[548] and wallpaper in and out. There was never any mildew in the house however as windows were left open and doors ajar.

Gloria recalls as a child the family had no washing machine. A copper and mangle was used instead. There was a coal range and a gas stove in the kitchen. Although there was no fridge there was a small safe to keep food chilled. The toilet was outside and Gloria (not so fondly) remembers the large wetas that would drop down unannounced from the ceiling at times! Although there was no sewerage system in place, this never caused any health issues for the family and all six children lived to become pensioners.

The section was large with lots of fruit trees and the kids would eat plenty of fruit straight from the trees – guavas, plums, loquats, apples and oranges. There was also an area for a chicken run so fresh eggs were always in plentiful supply for the family. They also grew a vegetable garden. The fresh fruit and vegetables were important supplies for the family as food was rationed after the war and ration books were in use for quite some time. Gloria

[548] 'Scrim' is a hessian or jute sacking material that has been tacked or stapled onto rough sawn, horizontally placed, thin wood planks (sarking).

recalls a low-flying aircraft flying past their home in circa 1945 that gave the family quite a scare. Her mother rushed all the children inside the house thinking it was about to attack.

Left photo: Joan Brame, Gloria Ritchie (back row); Elaine Ritchie (far right, top row); Joy Ritchie (1st front row); John Ritchie (3rd front row); Colin Ritchie (4th front row); Graeme Ritchie (in pram).
Right photo: Gloria Ritchie (in shorts); Colin Ritchie (standing); John Ritchie (background); Others are neighbours.
Photos courtesy of Gloria Carlsen (nee Ritchie).

Gloria recalls herself and her siblings learning to swim in the Whau Creek. Their mother would take them down every high tide to play in the water. The end of Lynwood Road was known locally as “The Bluff” and as “Lover’s Leap”. It was an ideal place, Gloria says, to sit down and enjoy the view plus any activity happening on the water. However, Gloria notes that this area has since been fenced off and the terraced grass area is long gone.

Gloria and her brothers and sisters would walk to New Lynn School from the time they turned five. There were no buses at that time and it would take approximately three quarters of an hour to walk. In the winter months, the puddles would be crusted over with thick glass-like ice which the kids would stomp on and crack with glee. In later years, buses stopped at the top of the street to take the kids to school.

According to Gloria, a family who lived on her street owned ‘a very flash house’ so at any time the Ritchie girls were offered a ride home (in their teenage years) they would ask to get dropped off at the end of the driveway of that particular house. The girls would slowly make their way up the driveway and as soon as the car had disappeared along the road, they would make their way towards their own home!

Gloria recalls climbing trees, making huts, playing games like rounders’ and marbles. She recalls walking home down Lynwood Road and if the tide was in at the Whau Creek it was the highlight of the Ritchie children’s day. Their mother would take them swimming again – life was good! In fact, there weren’t many times when the kids weren’t outside enjoying the Whau neighbourhood – rain, hail or shine! During winter rains, for example, the kids from the cul-de-sac would be busy constructing dams across the gravel road with dirt and stones. They had all day to finish their dams as there was only one vehicle that needed to pass near the street end and that was Gloria’s Dad when he came home from work each night. At that time, the children would bust the dam open and the built-up water would race down the road much to the children’s delight! This is how childhood was for the Ritchie, Brame and other neighbourhood families – spending all day outside until they were called in for dinner.

Gloria loved every minute of her childhood spent next to the Whau Creek and it is an era of her of life that she recalls fondly.

Memories and Snippets

"I was born in 1958 and lived in St Georges Rd, Avondale. I grew up there and used to canoe in the Whau. It was very muddy and full of mangroves. I remember the smell as the local factories I think at the time may have put waste in the water. I don't know if it was ever proved but it was the story at the time. We were never allowed to swim in it."

Lin Gow – (1 March 2016)

I grew up in New Lynn in the 1970's and as kids, many a Saturday or Sunday we would bike down to the road bridge from Avondale to New Lynn. There was a commercial business, which is still there today, with a carpark on the edge of the river and we would fish for sprats. There were always plenty of sprats to be caught. We used a dough mixture for bait and always came away with plenty to feed the cat. There were no mangroves there back in the 70's, and the river was reasonably clean. We didn't really catch anything other than sprats but this is all we were targeting. From memory, there was only really kids fishing there, so I assume there weren't too many other species to catch. I lived in Gardner Avenue off Titirangi Road and we had Manawa Stream next to us which would have fed into the Whau River. There was always plenty of eels and native trout to be caught. Sadly, this creek where we grew up has now been piped and covered in for housing. We would often follow the creek all the way to central New Lynn where it got too big to go any further.

Craig Daw (11 April 2016)

We were brought up in Lynwood Rd in Kelston. The Whau River was at the end of the road and was our childhood playground. We spent our weekends on its banks, had swimming and diving competitions off the two wharves in situ at the time and fished for herring and sprats. When the tide was out we went eeling in the channel which ran from the end of Linwood Rd to the point at the end of Archibald Rd. We built makeshift rafts of anything from sheets of iron to rubber inner tubes strapped to pieces of wood. Most sank immediately after launching but the excitement of the build and the imaginations of how far these craft might take us was sustenance enough to continue trying. Most of us were taught to swim there by our parents or peers, drying ourselves off by lying on the kikuyu grass in the sun afterwards. The biggest challenge was to make the swim from base out and around an island of mangroves situated on the far side which would have been just in front of (I think), the end of Riversdale Rd Avondale or thereabouts. The Whau for me is full of endless memories of summers and winters spent on its banks.

Christina Mulvey (21 July 2016)

Releasing a Bottle of Whau River Blues

An estuarine delight here you'll find
The Whau River ebbs and flows with tide
Kingfisher and shag are only two
of our native taonga that await you.

... For if I had a bottle
to sail on down the Whau
I'd put inside a message
and await your answers to flow

Could you unlock coiled questions
or bring on new suggestions
About gathering our communities
from catchment through to sea
for we hold amongst us all
those lifelong learning keys

I peer to see my childhood
Reflected at the river's edge
Crouched down with windblown tears
It doesn't appear … I dread.

Has pollution sullied this river?
Branched and long armed that it is

Shadows still dance each afternoon
from trees that hang overhead

Man-made layers and towering tombs
Should not kill the koura, eels or fish
Nor destroy the nursing grounds
- of stream or mangrove swamp

But I won't send this bottle
to capture my heart felt plea
but read it here - my message

Living the dream is not free

I turn away from the bottle
and enter rehabilitation mode

So join us now in saving our bush
Our future generations deserve to look.

A Cheeky Birdseye View of a Landscape

Not in our backyard
we do not want to be
diversity depleted of our endemic trees
They make me fly much further
over enveloped fragmented gaps
always stamped the same – don't return back
and as for the message
Land ownership must be won
it comes at high price
when ecosystems come undone.

They traded in those trees -
Greenfields become neighbourhoods
and still they want more

I went looking for the landowners
who were sculpting up the land
Did biodiversity matter – did they give a damn?
what is their motivation
as they claim their private lots
Does insanity prevail –
have they lost the plot
- in Aotearoa? - their country
Split lands – descendants – many cultures – it's all there.
Can I really fly by and pretend not to care?

They call it their safe haven
that surely will have to do
As they burden with their work
But do they pay for what they use? -

Replace that tree to replenish the earth.
Will humankind slow down an obsession –
that there's always ample more -
BUILD new empires – repeats the mantra call.

They cater for the rich
as they generate more wealth
They talk of precious coastline
to be nursed and brought to health
- There is a correlation
- Blue sky and mean high tide
Economically driven
But environmentally priced

A thousand cuts - it bothers me
Self-mutilation is always abuse
It's the blood of many specimens
from terra to benthic blends
A cost that is too dear – can they make amends?

They make me fly much further

In the name of private enterprise –
growth to get ahead
and yet they polarise
It's an economic drive but a pointless exercise –
of sustainable management

Their worldviews ebb in and out
on each and every tide
and on that ridge that should hold bush
their quality homes define
Anthropocentric wealthy
A space devoid of plenty
Yet there is much life still to come

As humans mould ecological footprints
I think of the dinosaurs run
sprawling out before they fall
yet the new giants had not yet come –

With their hegemonic actions
their affront was development traction
cumulative effects brought a hefty decline

Does not seem intelligent – as I glide up in the sky
What do I tell the new chicks about the decades of decay
caused by carving up the land
their ongoing deliberate mistakes
One or two trees won't matter -
Each resident rationalised
Is it justified amnesia
Or a she'll be right attitude

But if they ruin this, every species landscape
That's not yours or mine
My Cheeky Birdseye view won't matter
If death is ahead of its time.

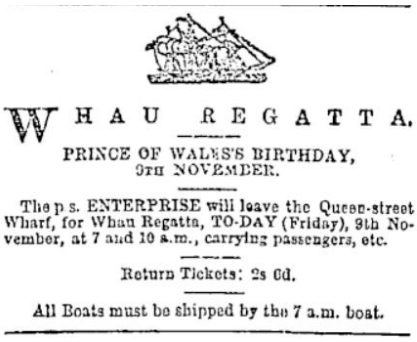
The Places

Chapter Five

Sporting Events on the Whau

The Whau River has been home to many marine sporting events over the last century and a half. From the very early rowing regattas of the late nineteenth century to the exciting world of power boat racing in the early 1900s – the Whau has been at the centre of it all. This chapter looks back on the history of sporting events on the river. There is even an interesting tale that involves a portable gramophone!

The Whau Regatta



WHAU REGATTA.

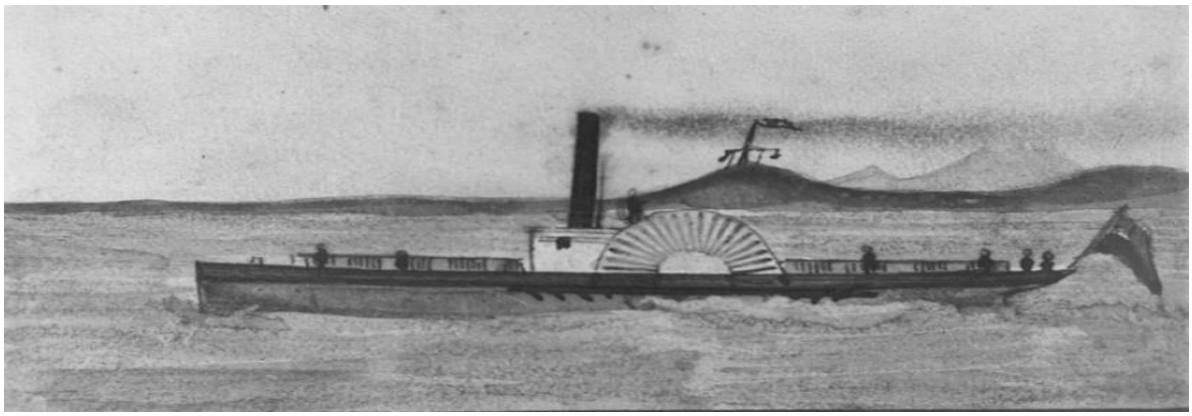
PRINCE OF WALES'S BIRTHDAY, 9TH NOVEMBER.

The p.s. ENTERPRISE will leave the Queen-street Wharf, for Whau Regatta, TO-DAY (Friday), 9th November, at 7 and 10 a.m., carrying passengers, etc.

Return Tickets: 2s 0d.

All Boats must be shipped by the 7 a.m. boat.

In 1883, a scheme was decided upon for having a Rowing Regatta on the Whau River on Prince of Wales' birthday.[549] *"There is a fine stretch of water on the river, which is admirably suited in every respect for rowing, and no doubt several good contests can be secured."*[550] Subscriptions in aid of the Regatta fund were amply received, both in Auckland and at Avondale.[551] The Whau Regatta, held on the 9th November, 1883, attracted patronage from many Auckland pleasure-seekers.[552] The paddle steamer Enterprise acted as flagship and left from the Queen Street Wharf for the Whau, carrying both competitors and passengers.[553]



Painting of the paddle steamer 'Enterprise No. 1', built in 1865.
Sir George Grey Special Collections, Auckland Libraries, 4-2924.

[549] *Auckland Star,* Saturday Supplement, September 1, 1883, Page 5.
[550] Ibid.
[551] Ibid.
[552] *The Auckland Evening Star,* Thursday, November 8, 1883.
[553] *The New Zealand Herald,* Auckland, Friday, November 9, 1883. Newspaper clipping also sourced from this issue.

It was a celebrated affair with the band of the Naval Brigade in attendance. The various events included whaleboat races, four-oared string test gig races, canoe, dinghy, punt, and sculler races.[554] The grounds and wharf of the Brick and Tile Company were utilised for tents and for the service of the Regatta Committee.[555]

View across water to site of yard and jetty of old brickworks at the mouth of the Whau River.

J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

The *New Zealand Herald* described the weather as being 'delightful.'[556] *"The sun was warm, and a steady southern breeze made the air refreshing."*[557] The day was said to have been very favourable for the enjoyment of marine excursions.[558] Several days before the big event, four Regatta trophy cups were on view in the windows of Messrs. Kohn and Lewisson, Jewellers, Queen Street.[559] In the window of the first named was the cup, valued at £5, to be given as the first prize for the Rob Roy canoes, and the cup, valued at £2 10s, to be given as the first prize for the dingy race. Mr Lewisson's window exhibited two cups, the first as first prize for the scullers' race. The cup was valued at £6, and a money prize of £5 was added by the Regatta Committee. The other cup, valued at £2 2 s, was set apart as second prize for the Rob Roy canoes.[560] With much hype building up to the event, it was anticipated to be a great success, with the committee leaving no stone unturned to make it so.[561] According to the *Auckland Star* the following day, however, the regatta 'was a miserable failure.'[562] The paper stated that inhabitants of the local area turned out in very small numbers, and, apart from competitors, only about twenty or thirty persons came from Auckland.[563] The failure was blamed on bad management on the part of the Committee in neglecting to give enough publicity to matters concerning the regatta, and to the little public interest which it accordingly attracted.[564] Likewise, the *Observer* stated the Whau Regatta as being very tame. "The attendance was ridiculously small, and the whole affair rather

[554] Ibid.
[555] Ibid.
[556] *The New Zealand Herald,* Saturday, November 17, 1883.
[557] Ibid.
[558] Ibid.
[559] *The New Zealand Herald,* November 2, 1883.
[560] Ibid.
[561] Ibid.
[562] *Auckland Star,* Saturday, 10 November 1883.
[563] Ibid.
[564] Ibid.

'pale.'"[565] However, the editor believed, if properly managed, "the Whau Regatta should become a grand institution, as the river is splendidly suited for rowing-races, and it would well repay the Rowing Association to give a helping hand in any future case."[566]

The following year, talks resumed regarding holding another Whau Regatta, again on the Prince of Wales' birthday. A proposal was put forward to form a committee in town to enable attraction of a greater amount of public attention than formerly.[567] There was no doubt that the Whau was one of the most suitable sheets of water on the Waitemata.[568] The committee, once formed, engaged two steamers, the Enterprise and the Annie Milbank for the occasion. The committee members agreed the regatta promised to be the most successful ever to be held on the Whau River.[569] The entries received were exceedingly great and subscriptions had come in freely.[570] The Regatta itself attracted a large number of spectators, with competitors comprising over 100 people.[571] *The New Zealand Herald* deemed the 1884 event a great success.[572] Surprisingly, after such a successful regatta, an early August issue of *The Observer* stated that it was improbable a Whau Regatta would be held in 1885.[573] In September, the Observer commented on the lack of a regatta: *"What about a Whau Regatta this season? Could not some sensible sportsman move in the matter?"*[574] There appeared to be no reason for the apparent apathy.[575] By 1888, however, it was evident that many Auckland boating regattas had dissolved. *The Auckland Star* stated, *"A few years back we had quite a number of regattas to look forward to every year, but they have gradually dropped into the background and are now no more. Gone are the Ponsonby and North Shore Regattas and the popular fixture on the Whau River, and there seems but little hopes of reviving them."*[576]

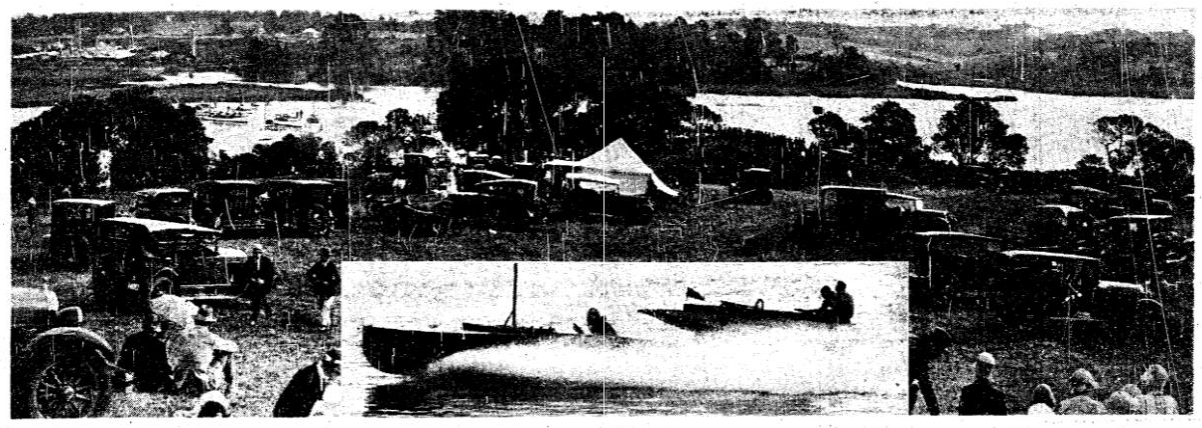
Power Boats

By the early 1900's, power boats had become popular on Auckland waterways. However, it was thought that the Whau River was not an ideal cruising ground. Although it was fine when the tide was in, there was too much mud when the tide receded. Nonetheless, the Avondale Motor Boat Club held periodic races at the mouth of the river, and thus some good sport was provided.[577] In 1908, the route utilised by the Club was described as starting at the Whau Bridge, around a buoy off the Brick and Tile Company's Wharf, and back to the starting point.[578]

---

[565] *The Observer,* Volume 7, Saturday, November 17, 1883, Page 8.
[566] Ibid.
[567] *The Auckland Evening Star,* Saturday, April 26, 1884.
[568] *The New Zealand Herald,* Saturday, May 3, 1884.
[569] *The New Zealand Herald,* Tuesday, October 14, 1884.
[570] *The New Zealand Herald,* Saturday, November 1, 1884.
[571] *The Auckland Evening Star,* Monday, 10 November, 1884.
[572] *The New Zealand Herald,* Tuesday, November 11, 1884.
[573] *The Observer and Free Lance,* Saturday, August 1, 1885.
[574] *The Observer and Free Lance,* Saturday, September 12, 1885.
[575] *The New Zealand Herald,* Saturday, January 9, 1886.
[576] *The Auckland Evening Star,* Saturday, January 28, 1888.
[577] *The Auckland Star,* Saturday, February 29, 1908.
[578] *The New Zealand Herald,* Saturday, April 11, 1908.

In 1928, the Whau River's potential as an ideal course for both rowing and motor boating was fully recognised.[579] *The Auckland Star* stated that deep water existed even at the lowest tides, while at the flood there was a magnificent stretch that would provide an excellent course for outriggers, with a fine natural grandstand on Robertson's Point.[580] Robertson's Point was down Rosebank Road, Avondale and enjoyed ample parking space that was available free of charge.[581] As there were concrete and bitumen roads adjoining, it was a great locality within 20 minutes' motor run from the city.[582] The course was straight, over half a mile long, and was used for outboard events, while a longer course was utilised for the speed boats and fast cruisers.[583] The full course and turning marks were in full view of the rendezvous at Robertson's Point.[584]



SPEED-BOAT CONTESTS ON THE WHAU RIVER: THE NEW ZEALAND POWER-BOAT ASSOCIATION'S SECOND SUCCESSFUL MEETING. A comprehensive view of Saturday's gathering with, inset, a snapshot of Hobo passing Spot at the turn in the second speed-boat handicap. Hobo won both handicaps.

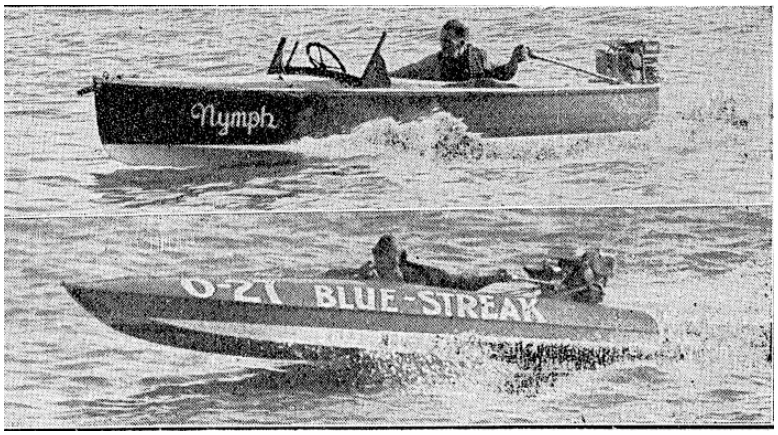
Above photo courtesy of the New Zealand Herald, Monday, April 2, 1928.

Yachts and launches lined the river banks, and the river at that time was described as 'a pretty tidal stream – quite a "Henley" aspect for the day."[585] Over the course of a year, the Whau River course became a favourite, both for spectators and contestants, who all appreciated the smooth water conditions.[586] Volunteer workers spent their Saturdays wielding picks and shovels to form a 'natural' grandstand and a roadway was constructed down to the water's edge so that boats taken out by truck could be launched without trouble.[587] By the end of 1929, it was evident that interest was growing in outboard motor boat racing. Estimated by the number of motor cars present, there were well over a thousand people watching from the Whau banks, while a number of boats and launches were moored under the banks and in the stream below the course.[588] The officials

[579] *The Auckland Star,* Tuesday, February 7, 1928.
[580] Ibid.
[581] *The Auckland Star,* Friday, February 17, 1928.
[582] *The Auckland Star,* Tuesday, February 7, 1928.
[583] *The Auckland Star,* Wednesday, February 15, 1828.
[584] Ibid.
[585] *The Auckland Star,* Monday, February 20, 1928.
[586] *The Auckland Star,* Friday, February 1, 1929.
[587] *The Auckland Star,* Friday, February 22, 1929.
[588] *The Auckland Star,* Monday, November 25, 1929.

controlling the races were perched on a temporary platform standing on stilts in the mangrove swamp, where they were in a good position to signal the boats.[589]

Photo Source: Sir George Grey Special Collections, Auckland Libraries, AWNS-19280223-46-3. Staff photographer, Auckland Weekly News, 23 February, 1928.



Unfortunately, by the beginning of 1931, the Whau course meetings were dwindling, as the Panmure Basin proved to be a better site and more convenient for both competitors and the public.[590] It was thus decided by the New Zealand Power Boat Association to hold all future events on the Panmure Basin.[591]

Outboard Motor-Boat Racing on the Whau River: Outstanding Competitors in Saturday's Events. Photo courtesy of the New Zealand Herald, Monday, March 24, 1930.

Rowing

In 1927, *The Auckland Star* stated that the Auckland Rowing Association had been endeavouring, for some time past, to find a suitable harbour course for a championship regatta.[592] Attention was thus drawn to the Whau River course. Mr G. H. Reston, chairman

[589] Ibid.
[590] *The Auckland Star,* Friday, April 17, 1931.
[591] Ibid.
[592] *The Auckland Star,* Wednesday, December 14, 1927.

of the Auckland Rowing Association, and the members of the executive set off on the launch *Matarere* to inspect the proposed course.[593] The party remained on the spot until after ebb tide, and were exceptionally pleased with the survey. A 'splendid' course was found in the river – running north and south – with a straight stretch for a mile and a half, and for two miles with one bend.[594] The current was found to be much less than in any of the country rivers, and the course was wide enough to take seven or eight crews, with racing possible until the half-tide. A good sandy beach for landing purposes was also available, while a paddock on the town side of the river offered a natural grandstand capable of accommodating thousands and giving a clear view of the course for over a mile.[595] The only problem encountered with holding a rowing regatta there was that the only dates upon which the tides would be suitable had already been taken by the Power Boat Association for their races.[596] This issue was addressed by Mr David B Russell, of Avondale, who placed before the Mayor of Auckland and the Prime Minister, a proposal whereby the full sporting potentialities of the Whau estuary could be realised.[597] His idea was to impound the Whau River at Pollen's Point by means of a stop-bank with dummy lock gates and a spillway for small craft and barges to enter at will. Mr Russell claimed that the necessary spoil could be obtained from Avondale reserve at the foot of Rosebank Road, having in mind at the same time a plan for converting this area into recreation ground.[598] Impounding the water at that point, he claimed, would secure a regatta course at all tides. The course would have a "straight" of two and a half to three miles, and would be about five miles in length. A proposal to make from the spoil from the big cut at Karaka Bay an island of 150 to 200 acres situated within view of the regatta course was included in the plan. This had the advantage of providing an expansive "grandstand" and at the same time eliminating the complication of riparian rights.[599] The proposal also pointed out the possibility of cheaply securing a swimming pool connected to the foreshore at one of the side roads off Rosebank Road, and of adding an artificial ice skating rink.[600] Mr Russell estimated that the regatta course, part of the island, the road from Te Atatu to Rosebank Road side and the recreation ground at Rosebank Road could all be completed in one year at a cost of £80,000 by employing 300 men.[601]

Although there is no indication that Mr Russell's plans were taken much further, an inspection of the Whau River course by officials of the Auckland Rowing Association, and subsequent nod of approval by the party enabled the governing body to arrange a programme for the provincial championships to take

HARBOUR BOARD NOTICES.

AUCKLAND HARBOUR BOARD.

REGATTA ON THE WHAU CREEK.

Superintendent's Office,
Quay Street,
March 2, 1929.

Notice is hereby given that on SATURDAY, 9th March, 1929, navigation will be prohibited in the Whau Creek, from the inner pile beacon for a distance of two miles up the creek, between the hours of 1 p.m. and 7 p.m., during the Auckland Rowing Association Championship Regatta.

By Order.

H. B. BURNETT,
Superintendent and Secretary.

[593] Ibid.
[594] Ibid.
[595] Ibid.
[596] *The Auckland Star,* Tuesday, February 7, 1928.
[597] *The Auckland Star, Wednesday, February 22, 1928.*
[598] Ibid.
[599] Ibid.
[600] Ibid.
[601] Ibid.

place in March 1929.[602] Many rowers wondered why the exceptional course had not been utilised before.[603]

Right: Clipping from The New Zealand Herald, Monday, March 4, 1929.

The weather and the rowing conditions on the day were favourable and in addition to all the Auckland clubs, there were entries from Tauranga and Hamilton. The general opinions of the competitors and onlookers about the new Whau course were that it was 'a good one, one of the best, or fit to hold the New Zealand championships on."[604] It was noted by some of the veteran rowers that it had been quite some years since the last rowing regatta was held there – more than they cared to recall. The fact that these members had roles as officials now alluded to "a sign of our age."[605] In fact, the only two regattas held on the Whau before this time, as far as history dictates, were in 1883 and 1884 respectively.

1929 marked the year that Mr Robertson passed away. He was the owner of the property used by spectators and competitors in many past Whau boating events. He was also on the committee for the Whau Regatta of the same year.[606]

In February of 1930, another provincial championship regatta was held on the Whau River and March saw the annual inter-provincial eight-oar race held there also. *The Evening Post* stated that 'never in the annals of Auckland rowing has such a spectacular exhibition of rowing been witnessed as was provided on the Whau River…".[607] By the close of the rowing season in May 1930, the Whau River course had been declared 'definitely established' and even the most critical of visitors spoke favourably of it.[608] Discussion arose over finding ways and means to establish rowing headquarters on the Upper Harbour waterway. "The Whau River must be made the premier rowing course of the North Island. The difficulties of transit to the river are fast disappearing and there can be no reason advanced if the proper enthusiasm is displayed why the river should not become the scene of a Henley-on-the-Whau."[609] The only matter to be settled was of procuring the land at the finishing point and erecting a suitable boathouse and pavilion. With such a building and the landing properly complete, it was stated the whole situation would be perfect for the New Zealand championships.[610]

Much work was required to be carried out on the land at the finishing post before the 28th February 1931 Provincial Championship Regatta could take place. However, volunteers were far and few between and *The Auckland Star* stated that if any faults were to be found, the majority of oarsmen could thank themselves for failing to put in an appearance when the working bees were busy.[611] Unfortunately, the hard work by some was not enough on the

[602] *The Evening Post,* Saturday, February 2, 1929.
[603] Ibid.
[604] *The Auckland Star,* Tuesday, March 12, 1929.
[605] Ibid.
[606] *The Auckland Star,* Friday, August 2, 1929.
[607] *The Evening Post,* Saturday, March 29, 1930.
[608] *The New Zealand Herald,* Wednesday, May 7, 1930.
[609] Ibid.
[610] *The New Zealand Herald,* Wednesday, November 5, 1930.
[611] *The Auckland Star,* Wednesday, February 25, 1931.

day as attendance by spectators was poor – although this was somewhat owing to counter-attractions such as the New Zealand Rowing Championships at Wellington.[612] Forty-five entries were received for the eight races, as against sixty entries for nine races the season before.[613] Although the executive was disappointed with the regatta particularly from a financial point of view, it was loath to suggest any idea of abandoning it altogether (particularly given that so much effort had been spent in improving the viewing 'grandstand' and the finishing posts). However, it was compelled to mention "that serious consideration must be given by delegates of the advisability or otherwise of continuing to hold the regatta there."[614]

That consideration unfortunately led to a decision to hold the 1932 Provincial Championships on the Waterfront Road course, as against the Whau River course, with a vote of seven votes to two.[615] The general opinion was that by bringing the regatta within easy reach of the public, at a place where the races could be viewed throughout, and followed by motorcar, it would become an increasing attraction.[616] In 1933, the Whau River course was once again rejected in favour of the Waterfront Road course.[617] By early 1934, the Whau was used merely as a practice course for rowing clubs – including the University eight crew, the Waitemata Boating Club eight-oar and the West End light maiden four.[618] The Auckland crew also spent one week at a full-time camp on Mr Robertson's Rosebank Road, Avondale, property. The accommodation provided was comfortable and the men had access to good water supplies.[619]

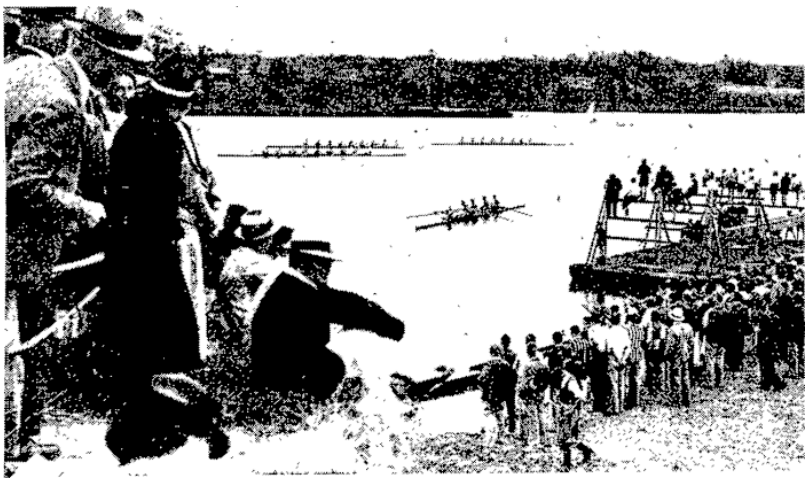
The Whau River course again became the centre of rowing focus at a meeting of the executive of the Auckland Rowing Association in September 1934. A lengthy discussion took place concerning the possibility of holding the Dominion championships at Auckland during the following season.[620] Both the Tamaki Drive and Whau River courses were considered but it was unanimously decided that in the event of the regatta being allocated to Auckland the Whau River course should be used.[621] The Whau stretch of water was not troubled by weather conditions and was generally considered one of the best in the Dominion. Mr Robertson had already given his permission for the use of his property overlooking the course, on which thousands of spectators could be comfortably accommodated.[622]

The New Zealand Championship Regatta was indeed allocated to Auckland and the date was set for Saturday 2nd March 1935, on the Whau River course. Writing of the Regatta, *The Auckland Star* described the Whau Estuary: *"One of the little-known spots of Auckland, which has a distinct charm of its own when the tide is in, was seen for the first time on*

[612] *The New Zealand Herald,* Monday, March 2, 1931.
[613] Ibid.
[614] *The New Zealand Herald,* Tuesday, October 20, 1931.
[615] *The Auckland Star,* Thursday, October 29, 1931.
[616] Ibid.
[617] *The New Zealand Herald,* November 24, 1932.
[618] *The Auckland Star,* Wednesday, March 14, 1934.
[619] Ibid.
[620] *The Auckland Star,* Friday, September 21, 1934.
[621] Ibid.
[622] Ibid.

Saturday by some hundreds of Aucklanders who visited the rowing regatta on the Whau estuary. Bordered on both sides by farm and orchard lands sloping down to the water's edge, with the Waitakere Ranges in the background (looking from the city side), the rowing championship course, down which spectators had a clear view for over a mile of quiet, land-protected water, looked an oarsman's paradise."[623] Rowing conditions were perfect and there was little doubt that the Whau Estuary was a first-rate course.[624] The regatta had been a financial success.[625] Even so, many and varying reports began to appear in the country's newspapers, in the days and weeks following the regatta. There was justification in the complaints about the unfairness of the course as there was much manoeuvring for positions with the changing tides, and some teams were placed in dead water while others had been carried by the making tide. It was considered by some that a course could not be considered satisfactory for championship events when there was as much manoeuvring as seen on the Whau that day.[626]

At the request of the New Zealand Rowing Championship Regatta Club the Auckland Harbour Board decided to mark a permanent course in the Whau Estuary for use at future regattas. The harbourmaster, Captain H. H. Sergeant, suggested that suitable marks be made at the mile, one and a-half, two and three-mile points. The recommendation was adopted by the board.[627]



Rowing Championships – A scene on the banks of the Whau Estuary on Saturday during the annual provincial championship regatta. Crews representing eleven different clubs in all parts of the province took part. Photo courtesy of The Auckland Star, Monday, March 23, 1935.

The next regatta to be held on the Whau River was the 1936 Auckland Provincial Championships. However, there was a slight drama two nights before the big event. On the night of 19th March, nine members of the West End Rowing Club had a very narrow escape from drowning off the mouth of the Whau River.[628] Their eight-oared boat was swamped in rough water. Until it approached the entrance to the Whau, the boat had made good progress. However, once at the creek mouth, and some distance from either shore, the boat ran into rough water, and a wave broke on board, rapidly filling the craft. "When we saw that we were going down, we gave "One, two, three," and the loudest shout we could manage," said one of the crew. "In about two seconds the boat was under water, and we

[623] *The Auckland Star,* Monday, March 4, 1935.
[624] *The New Zealand Herald,* Monday, March 4, 1935.
[625] *The New Zealand Herald,* Friday, March 8, 1935.
[626] *The Evening Post,* Saturday, March 16, 1935.
[627] *The New Zealand Herald,* Wednesday, October 2, 1935.
[628] *The New Zealand Herald,* Friday, March 20, 1936.

were all swimming."[629] The water was extremely cold and the crew clung to the boat until it was evident that it could no longer support their weight. The men then drifted off in different directions – scattered over half a mile. The accident was seen by another crew, who quickly made their way to shore where one of them telephoned the Hobsonville Air Base. The men were thankfully all rescued half an hour later in pitch darkness as the result of quick work by the crew of the Hobsonville Air Base fast launch.[630] The boat was found practically undamaged on a sandbank near the mouth of the Whau estuary the following morning.[631] All eight oars were recovered undamaged.[632]

The 1936 regatta was said to be one of the most successful in the long history of the Auckland Rowing Association. The weather was ideal, and a special tram, bus and taxi service had been arranged, making the journey to and from the course very comfortable.[633] The 1937 regatta was to have also been on the Whau River course. Unfortunately, due to a series of circumstances at the eleventh hour, through the inability to secure barges for the transport of boats, a change of venue to the Tamaki Drive course proceeded.[634] By 1938, the Whau River course was deemed unsuitable to hold the regatta. It also appeared that finances were becoming an issue for the association, particularly the raising of money necessary to provide prizes.[635]

Leading up to, and after, World War II, there is little evidence of the Whau River being utilised again for major rowing events.

Sixty-five years after the last regatta was held on the Whau River in 1936, a different scene emerged on the Whau. The West End Rowing Club, which was established in 1884 in St Mary's Bay, (and whose early members had competed on the Whau River course) had moved several times over the years. Its final move was into its new $1.75 million complex at Avondale's Saunders Reserve on Saturday 26th October 2001. The club includes a two and a half storey clubhouse, a gymnasium, function room, showers, boatshed, and a water access pontoon. The clubrooms, by the side of the Whau River, were funded through the sale of the club's old base at Westhaven, and by several grants. Kerry Ashby, the West

[629] Ibid.
[630] Ibid.
[631] *The New Zealand Herald,* Wednesday, March 25, 1936.
[632] Ibid.
[633] *The Auckland Star,* Monday, March 23, 1936.
[634] *The Auckland Star,* Friday, February 5, 1937.
[635] *The New Zealand Herald,* Wednesday, January 26, 1938.

End Community Trust Board chairman at the time, stated the club could not have asked for a better location. “The Whau River is marvellous for water sports, but has always been hard to access. Now we have a great community facility that we are all very proud of.”[636]

Kayaking and Canoeing

Kayaking and canoeing has been, for a very long time, an activity enjoyed on the Whau River - from pre-European times when Maori waka rowed skilfully up and down the river’s path, to present times where, on many sunny days, pleasure-seekers can be found floating contentedly on its waters.

HOLIDAY CANOE JOURNEY FROM HAMILTON TO AUCKLAND
Four members of the Hamilton Canoe Club who travelled by canoe to Auckland via the Waikato River, the Otaua Creek (near Waiuku), the Manukau Harbour and the Whau Creek.

Back in 1934, four young members of the Hamilton Canoe Club paddled the length of the Whau River. They had ventured on a canoe trip of over 100 miles from Hamilton to Auckland, via the Waikato River and the Manukau Harbour.[637] The young men left Hamilton in four canoes on the morning of January 6, taking equipment such as collapsible trailers for taking the canoes overland, a tent, rifles and even a portable gramophone![638] It must have been very relaxing after a long day of arduous rowing to then sit beside the campfire with a Bach Concerto or “Little Man, You’ve had a Busy Day” playing melodiously from the gramophone! An early twentieth century rendition of ‘glamping’ perhaps?!

The course followed the Waikato River to the Otaua Creek, a few miles from the mouth, overland to Waiuku, up the southernmost branch of the Manukau Harbour to Clarke’s Beach, and across the harbour to Green Bay.[639] Another overland journey was made to the Whau Creek, which took the young men to the Waitemata Harbour and ultimately to Point Chevalier Beach. The trip was not without its mishaps, however, as during the rough journey one of the canoes overturned.[640] The young men completed their journey at Whangaparaoa Peninsula and made the return journey to Hamilton by car.[641]

Fishing, Swimming, Water-Skiing and Jet-Skiing

Before the rise of industry along the banks of the Whau River, water activities such as swimming, bathing and fishing were commonplace. As far back as 1887, with discussions

[636] *The New Zealand Herald,* Friday, October 26, 2001.
[637] *The New Zealand Herald,* Tuesday, January 16, 1934.
[638] Ibid.
[639] Ibid.
[640] Ibid.
[641] Ibid.

already underway for the repair of the second Whau Bridge, a suggestion was put forward for the attachment of a rowing shed and swimming bath complex:

> ***WHAU BRIDGE (To the Editor)***
> *Sir, - Re the newly proposed centre river bridge, if erected with very little expense and attached to the bridge, a rowing club shed and swimming bath combined would be a great benefit to the people at Avondale, New Lynn, Waikomiti, and Henderson. As the young people have asked me during the last two years to start a rowing club, now would be the chance, if the centre river bridge were built. When they were paying the prizes for the last Whau River Regatta the Wanganui rowing men declared that it was the finest river in New Zealand for boating. – Yours, &., T. B.*[642]

This proposition was never realised although the bridge was duly repaired. Although the river was still used for swimming and bathing activities, industries such as brickworks and tanneries began settling more widely along the banks of the Whau. With their resulting pollutants, such activities became more and more of a health hazard. A letter to the editor in *The New Zealand Herald*, January 1933 indicates the sheer volume of pollution at that time and also alludes to the apathy of many regarding the health of both the river and the people who gained enjoyment from the Whau.

Diving Platform and slide on Whau Creek inlet pool, New Lynn, 1945.

Location believed to be at the end of Queen Mary Avenue and previously known as Sandy Beach or Bay. It is now an area of mangroves. (Source: Feedback from residents, September 2013). Hooker, Isabel photographer. J T Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

SWIMMING INSTRUCTION

> *Sir, - Your sub-leader of January 24 draws attention to the many drowning accidents now occurring. I would like to draw public attention to the manner in which the instruction in swimming and lifesaving is encouraged locally and how a golden opportunity has been allowed to slip, perhaps forever. Last year a lifesaving class was formed among the school children of New Lynn under my personal supervision and instruction (I have been a member of the Royal Life-saving Society for over 30 years). So well did the children respond to tuition that a team of 12 (six boys and six girls) actually won a challenge cup in open competition. Incidentally, two of the pupils saved a schoolfellow's life using the knowledge gained. As the swimming and training were in the Whau Creek, only about three lessons and practices a fortnight could be obtained on account of the tides. To overcome this obstacle plans were drawn up and submitted to the local authorities showing that by using unemployed labour, and at a very small cost, a section of the Whau Creek could be dammed off. This, flushed out at every tide, would have given a swimming bath of 200ft by 40ft, with a permanent depth of water at all tides of 5ft. A small fresh-water*

[642] *The Auckland Evening Star,* Tuesday, May 24, 1887.

creek, however, runs into the salt-water at this point. The health authorities took exception to this, claiming pollution of the water. Now what has happened? Instead of trying to get over this obstacle, which could easily have been done by the building of a flume underneath the proposed salt-water baths to carry away the polluted fresh water, the local authorities assume what they term a sympathetic attitude (apathetic would be a better word), and the whole project stands stagnant. So the golden opportunity of New Lynn acquiring a swimming bath at practically no cost has gone perhaps for ever, and owing to the fact that the site used by the children last year cannot now be obtained, the swimming and life-saving classes may have to be abandoned, although all instruction was given, and is given, absolutely free. Thus the ridiculous anomaly of a suburb of Auckland, surrounded by water, with beaches everywhere within easy reach and tidal creeks galore, having no place to teach its children to swim may be, and probably will be, allowed to continue. It will need two or three drowning accidents to shake the common sense of the community up and end a state of affairs that is a lasting disgrace to any self-governing community.

For the New Lynn School Committee,

Louis Cecil, Secretary.[643]

Unfortunately, Mr Cecil's comment regarding drowning accidents became a sad reality, as in November 1937, a young boy from Avondale drowned while swimming with friends in the Whau Creek.[644] Desmond Llewelyn Thomas, 15, had been swimming with 14 other local boys. He was known to be a strong swimmer so no one had noticed that he was missing until most had already left for home.[645] Mr George Heron, a resident of the district, searched the swimming hole and eventually found the boy's body. A doctor stated the youth had apparently been dead for more than two hours.[646]

The Whau claimed its second victim within ten weeks, when another boy drowned on February 14, 1938, while swimming in a deep pool at the foot of Taylor's Road, Avondale.[647] Also aged 15, George Nancarrow had accompanied his two brothers for an early afternoon swim. He was not a strong swimmer, only having learned during the preceding Christmas holidays. He had reached the far side of the pool and was halfway back when he cried for help and then disappeared. His body was recovered within approximately 10 minutes from almost 20ft of water. Mr Heron, who was responsible for finding Desmond Thomas's body just weeks earlier, also found young George. He applied artificial respiration but it was sadly to no avail.[648]

Although swimming on the Whau has not being popular for quite some time, modern technology has created more boisterous water hobbies – albeit more destructive to the Whau. For example, in the late 1990's, the river became a popular spot for jet-skiers. Unfortunately, the reckless adventure-seekers engaged in carving out new channels through the mud, changing the course of the river and damaging mangroves by ploughing new paths through them.[649] The loud noise and speed also frightened birds from nesting there. As

[643] *The New Zealand Herald,* Wednesday, January 25, 1933.
[644] *The Press,* Tuesday, November 30, 1937.
[645] Ibid.
[646] Ibid.
[647] *The New Zealand Herald,* Monday, February 14, 1938.
[648] Ibid.
[649] Jo Mackey, *The Whau: our streams, our river, our backyards,* (Waitakere City Council, 2002) p 63.

bylaws state that no boat can travel faster than 5 knots per hour within 200 metres of the shore, residents duly requested the Council to erect signs to educate jet-skiers. Specifically appointed community wardens reinforced the position and reported anyone who ignored the rules. The message soon got through and jet-skiers found new places to race their vessels.[650]

Water skiing on the Whau River at Kelston, December 1962.
J T Diamond Collection, Auckland Libraries, West Auckland Research Centre

As an added precaution, the Council also erected gates to Archibald Park, making it no longer possible to enter the park at night to dump items into the river (such as stolen vehicles). Due to the community working together on eliminating noise pollution, rubbish pollution and other destructive issues, birds such as the pukeko have come back to the river and the mangroves are recovering.[651]

The river may not currently be the place of choice for human swimmers - but in August 2015, it was definitely the place to be for a pod of approximately 100 dolphins frolicking in the morning sun![652] Although it is a very rare sight to see on the Whau River – it was most certainly a welcome one. Project Jonah general manager Darren Grover stated there are two reasons why the dolphins might have entered the river – either for feeding, or they were trying to escape from a large predator such as an orca.[653] In February 2016, a leopard seal was spotted basking on the Te Atatu Boat Club ramp. These mammals certainly chose the right place in Auckland to visit!

Photo sourced from The Whau River Catchment Trust website – *Citizen Science Project,* http://www.whauriver.org.nz/citizen-science/seal.

[650] Ibid.
[651] Ibid.
[652] *Western Leader,* August 4, 2015. Rose Rees-Owen, Large Pod of Dolphins Spotted in Whau River, West Auckland.
[653] Ibid.

Chapter Six

The Canal Saga – To Be or Not to Be?

The story of the Waitemata-Manukau Canal scheme should not be told without first providing some background into the mapping of New Zealand waters. Although much of the New Zealand coastline had been charted by the time settlement commenced around 1840, surveyors continued to map the harbours. The first survey vessel, the paddle steamer *Acheron*, under the command of Captain John Lort Stokes, was dispatched by the British Admiralty and arrived in Auckland in November 1848.[654] A trig station was first set up on what is now Windsor Reserve in Devonport on Auckland's North Shore. Using trigonometrical points such as this, the *Acheron* surveyed many parts of New Zealand before being replaced by the sailing brig *Pandora*, under Commander Byron Drury in May 1851. Drury's crew spent the next four years painstakingly charting intricate maps of the north-west coast of the North Island. It was during one of his surveys, in 1853, that Commander Drury accurately determined the respective tidal levels of the Waitemata and the Manukau, at the Whau, which he reported had demonstrated, *"the easy and comparatively inexpensive practicability of uniting those waters by a ship canal, thereby rendering the East and West Coasts of New Ulster perfectly attainable within a few hours, and thus converting the basins of the Manukau and the Waitemata into one mighty harbour, of a commercial importance unequalled by any port of the Southern Pacific; and thereby speedily insuring for Auckland those great results which the intelligence of Governor Hobson so shrewdly and clearly foresaw."*[655]

[654] Melanie Lovell-Smith. 'Early mapping - The coastline: 1840 to 1855', *Te Ara - the Encyclopedia of New Zealand*, updated July 13, 2012.
URL: http://www.TeAra.govt.nz/en/early-mapping/page-5.
[655] *Daily Southern Cross,* 22 March 1853.

Waitemata River from Kauri Point Auckland Harbour to its sources, surveyed by Comr. B. Drury and the officers of H.M.S. Pandora 1854.
(Hydrographic chart of the upper Waitemata Harbour, London, Hydrographic Office of the Admiralty, 1854)
'Sir George Grey Special Collections, Auckland Libraries, NZ Map 3909.'

With provision of such a meticulous and clear-cut report, one might conclude that a canal would indeed be constructed. However, several years passed before the canal idea was mentioned again. This time, the announcement of the new Panama Line (a line of steamers from Panama to Sydney) in 1857, initiated renewed interest. It was thought that the opening of this line of communication would be of the greatest advantage to New

Zealand.[656] Instead of New Zealand being at the very end of the line, it would, by this new line, 'be in the very highway to all the rest, so that all the traffic in passengers and merchandise will have to pass it on the way to and from Australia.'[657]

It was general opinion, however, that the line would ideally need to pass through Cook Strait, stopping in Wellington, to make the line as straight and short as possible. To deviate to Auckland, and then onwards would disgruntle many passengers' eager to complete their journeys.[658] The issue thus became that Auckland would be left out of sight, and would soon 'sink into such a position as Otago…, that is, it will cease to be the capital of New Zealand *in fact*, whether it retains the paltry distinction in *name* or not.'[659] The only solution, it appeared to the writer of the article, Robert Gilfillan, was to simply cut a canal from the Waitemata to the Manukau, so that the steamers might be able to pass through without delay and continue their voyage to Sydney.[660] The many and great advantages to this undertaking would include (1) raising Auckland into equal wealth and importance with Sydney or even with Melbourne; (2) the canal once cut would allow the highway of nations to pass through; and (3) not only would all benefits that the establishment of the Panama route must give to all the colonies be derived, but Auckland would be a very tollgate on that highway, levying contributions on the whole traffic of Australia.[661]

In the *Daily Southern Cross*, of July 1862, while discussing the *Novara* Scientific Expedition by Dr. Ferdinand von Hochstetter, (who undertook the first practical geologic surveys of New Zealand), the canal project was again mentioned.[662] An English translation of Dr Hochstetter's report stated:[663]

> The great southern mass of the North Island of New Zealand is connected with the narrow peninsular stretching away to the north-west by a small isthmus in about the 37th parallel of south latitude. On the eastern side the sea penetrates deeply into the land by the Gulf of Hauraki, with its numerous islands, washing in its south-western branch – the so-called Waitemata River – the northern side of the isthmus. On the west coast, the exposed weather-side of New Zealand, the ocean has forced a narrow entrance through the hard volcanic conglomerate rock, expanding inland and forming the southern shore of the isthmus, under the name of the bay of Manukau. The general width of the isthmus is here not more than five or six miles, and is further reduced in two places, where narrow creeks of the Waitemata River penetrate deeply in a southern direction towards the Gulf of Manukau, to about an English mile. These spots have been used from time to time immemorial by the natives to carry their canoes across from one side to the other, and have naturally often turned the attention of the colonists to the feasibility of cutting a canal to join the two bays. That this important plan will be eventually carried out there is no reason to doubt, as it is only a question of time and expense. The western isthmus which is called the "Whau portage," is a mile wide and only 111 feet high at its greatest elevation, whilst that to

[656] *The Nelson Examiner,* 22 July 1857.
[657] Ibid.
[658] Ibid.
[659] Ibid.
[660] Ibid.
[661] Ibid.
[662] *The Daily Southern Cross,* 26 July 1862.
[663] Ibid.

> the east, near Otahuhu, south of Mount Richmond, and known by the name of "Tamaki portage," is only 3,900 feet long and 66 above the level of the sea.

Not everybody was happy with the idea of a canal however. In 1867, Mr W Powditch queried the idea:

> I now pass on to the Whau, and must first ask what will it cost to cut a canal? I suppose the idea is not for a boat or lighter canal, because in that case what would require two tides or rather two days would be done by the rail in quarter of an hour. I presume then the proposal is to bring ships loaded from Manukau to discharge at Auckland, in preference to their keeping one point more northerly to round the North Cape. If this is to be, then you would have to cut a tunnel through the Whau hill sufficient to take the vessels' masts, and must carry your canal heads out to low water on the drift required. When through the hill I venture to say no engineer acquainted with canal-making would take the Whau creek, but would make a new straight cut, but might use the Whau creek as a feeder. When, then, you have got to the Waitemata, you must cut a submarine canal, through the mudflats; and support the sides with embankments. What will all this cost? How many ships will you get, coming from Bass's Straits, to prefer taking Manukau Bar, and a two or three days' delay, in preference to going around the Cape?[664]

The canal debate again began to dwindle and it was not until 1870 that the issue was again raised. In a Letter to the Editor of the *Daily Southern Cross,* Mr Robert Vaile stated that advantage should be taken of Auckland's natural water highways in order to open up the province's interior.[665] He argued that before more money be expended in constructing railways or macadamised roads, a better result could be obtained by improving 'these great arteries of communication already in existence.'[666] His understanding was that it would not be a very vast undertaking, compared with the numerous advantages gained. For example, the cutting through of the three necks of land to form the canal would not only give a magnificent stretch of communication in the direction of the length of the province (a railway of similar length – 250 miles at the proposed rate of £4,000 per mile – would cost exactly £1,000,000), but all tributary streams flowing into these extensive waters would at once be converted into highways radiating to every point of the compass.[667]

When discussing the Whau portage, in particular, Mr Vaile stated that a ship canal at that point, capable of admitting large vessels, would confer incalculable advantages on the port and commerce of Auckland – with visiting vessels choosing either the western or the eastern harbour for arrival or departure.[668] He did, however, expect opposition to the scheme, with the main reason being 'many will urge, in opposition to such a scheme, that canal travelling is too slow a process for the age in which we live, and that railways, and nothing but railways would meet the case.'[669] However, he contended, "it must be kept in mind that a slow rate of travelling, and transit of goods into the interior, and of produce to market, is better than no rate at all; and if the money to be expended will give the slow to

[664] *The Daily Southern Cross,* 22 August 1867.
[665] *The Daily Southern Cross,* Saturday, September 10, 1870.
[666] Ibid.
[667] Ibid.
[668] Ibid.
[669] Ibid.

an area of country many times larger than it could possibly give the fast it surely ought to be invested in the slower mode of communication."[670]

As predicted, Mr Vaile did receive some opposition to his canal proposal but not for the reason he originally supposed! Although there was general consensus to the advantages of connecting the waters at the Whau, it was nevertheless contended that it was not practicable, especially for the passage of large ships.[671] The expense, it was contended, would be simply enormous, as the Whau from this side could not be approached from a very long distance by vessels of any size, and the cost of dredging and otherwise to form a channel from deep water in the Waitemata to the proposed cutting would be very great.[672] The alternative, it was suggested, was to open out a canal for vessels of a smaller class between the Manukau and the Waitemata by way of the Tamaki for far less expense.[673]

The discussion was then greatly magnified, with both pros and cons fiercely contended. Although cost was the biggest issue, with widespread acknowledgement that a canal would cost four times that of a railroad, it was also contended that long-term maintenance must be considered.[674] Although the railway would cost less at construction point, it had the capacity to cost as much as the canal scheme by way of long-term expensive annual repairs, and also perhaps a need to be worked at an annual loss, and, whether at profit or loss, there would always be the cost of maintenance of rolling stock to be taken into account.[675] A canal would not have those issues. 'Once constructed, the cost is done with. The public using it finds its own rolling stock, and the cost of keeping locks and banks in repair would be defrayed by a small fee collected at either of the locks in passing them, just as at a toll bar; while like an open highway, the waterway would be available to the public at any hour of the day or night, and not merely at limited and set times, as would necessarily be the case with a railway.[676]

By 1873, with so much emphasis and hype placed on railways – *"It has been remarked, more than once, that we have gone "railroad mad""*[677] *– a New Zealand Herald* article stated that, *"although railroads were absolutely essential to the progress of the colony, they should not be constructed to the neglect of the great natural arteries of communication – the waterways of the country*."[678] The rivers, lakes, and tidal basins in New Zealand separated, in many instances, by narrow strips of land, could be connected by means of canals suited for steam navigation, at minimal expense, and thus utilise thousands of miles of communication that were comparatively useless.[679] The article spoke of two points at either which the Waitemata and Manukau could be connected – the Whau portage and the

[670] Ibid.
[671] *The New Zealand Herald,* September 13, 1870.
[672] Ibid.
[673] Ibid.
[674] *The New Zealand Herald,* Thursday, October 6, 1870.
[675] Ibid.
[676] Ibid.
[677] *The New Zealand Herald,* Wednesday, March 19, 1873.
[678] Ibid.
[679] Ibid.

Tamaki portage. The Tamaki portage, it was thought, would be the least expensive, and, for general purposes, the best.[680]

Although the subject of canals had been frequently written about, it had still not found favour in the eyes of the Provincial Council.[681] The prevalent idea was that every person who owned a ten or twenty-acre section in the country should have a railway station on his land. As it would be impossible to alter the position of the great rivers and tidal basins of the country, but it might be possible to get a railway through one's own land, all "went in" for railways.[682] The canal enthusiasts, however, suggested that *"if the canals were built, and within eighteen months of their commencement, there would be over a thousand miles of inland water communication available for settlers, affording them cheap and regular communication with the chief market town and port of the province, doing for the country what railways could not accomplish in a century*."[683]

By 1882, interest in a canal was again raised. W. D. B. of Christchurch enquired:[684]

> *Will you please inform me, through your 'Answers to Correspondents' the following, and I shall feel greatly obliged. 1. What is the length of the Whau portage – in other words, the distance from the waters of the Waitemata to the Manukau, in the narrowest part. 2. Has a reserve for a canal been surveyed there by Government? 3. Can you give an approximate of the cost of a ship canal capable of floating a vessel of 1000 tons?"*

The editors' response was forthwith.[685]

> *"1. The distance from water to water is about a mile, or a little over. There is deep water close to the shore on the Manukau or south side, while, on the north side, the beach is more shelving in character. But any proposal to connect the waters of the Waitemata with those of the Manukau, the second narrow portage, from the Tamaki river to the Manukau, should not be forgotten. There, the distance between the two waters is only about a quarter of a mile, but the soil is volcanic and may be hard, while the cutting at the Whau would be through soft sandstone and loamy soil. The Tamaki river has a depth of several fathoms of water at low tide a long way up the river. In fact the deep water channel goes up nearly to the place where the cutting would have to be made, if that route were chosen.*
>
> *2. A reserve has been left by the Government, for communications between the Waitemata and Manukau waters at the Whau, but we are not aware that it was reserved for any special mode of communication – It may be tramway, railroad, or canal. We believe a strip of one or two chains has been reserved at this place. At the Tamaki, no reserve has been made.*
>
> *3. We are unable to form an estimate of the cost. It would not be great, as the soil at the Whau is easy to excavate, and the land is only a few feet above the level of high water."*

By December, 1882, interest in a canal was gaining. A *New Zealand Herald* article stated that although a rumour had been circulating regarding a dedicated reserve for a canal, two chains wide, between the Tamaki River and the upper end of the Manukau harbour (set aside by the late Mr Fairburn), no evidence existed of any formal dedication having been

[680] Ibid.
[681] Ibid.
[682] Ibid.
[683] Ibid.
[684] *The New Zealand Herald,* Wednesday, October 25, 1882.
[685] Ibid.

made for this purpose.[686] On Mr C Palmer's map of the County of Eden no mention is made of this reserve, though the one at the Whau Portage is indicated.[687]

In April, 1883, His Excellency the Governor, Sir William Jervois, drove out to Onehunga and Otahuhu with a view to comparing two of the routes proposed to construct a canal from the Manukau harbour to the Waitemata harbour.[688] He did not, however, make such a careful examination (especially of the Whau passage) as would enable him to give an opinion as an engineer as to which would be the preferable course for the canal.[689] It was stated that His Excellency did not see that the construction of the canal was of sufficient importance at that time to warrant a large sum being spent on the work.[690]

In 1886, the discussion was revived. Mr E W Blair, under instructions from the Government, had prepared a report upon the scheme for connecting Auckland and Manukau by a canal.[691] Mr Blair proclaimed the project had always been "a cherished project, and many reams of paper have been wasted in discussing it."[692] Early the following year, the *Auckland Star* wrote an article discussing the report.[693] "Mr Blair's report appears to show very great difficulties in the successful working of such a canal, owing to the differences in the tide levels on the East and West coasts of the island. These apparently may be partially overcome by the construction of a central lock, but the strong current would act destructively upon the canal and make it costly to maintain.[694] Blair stated: "To construct a canal for coastal steamers is a project possibly within the attainable means of the port authorities, if such a work were considered worth the money but the greater undertaking of a canal for ocean steamers of the first class involved the stupendous work of arresting the treacherous sands of Manukau Bay, and from even New Zealand's small experience of harbour works, we can form a pretty shrewd idea of how many hundreds of thousands of pounds needed to be thrown in to the sea over such experiment."[695] Blair concluded by stating the advantages of the work would not be so great as was popularly supposed. A saving of three hours in point of time in the voyage to Sydney is too insignificant for steamers to pay the canal dues and mores the risks of the passage out of the Manukau.[696] The *Auckland Star* editorial maintained that Mr Blair 's report stated enough to show that "the experiment of constructing such a canal was not likely to be made during the present generation."[697]

After a lapse of approximately ten years, canal conversations were again beginning to fill the pages of newspapers. In December 1900, for example, a Mr W. E. Sadler wrote a letter to the editor of *The Observer.* He acknowledged that for years there had been talk about

[686] *The New Zealand Herald,* Tuesday, December 5, 1882.
[687] Ibid.
[688] *The New Zealand Herald,* 30 April 1883.
[689] Ibid.
[690] Ibid.
[691] *The Evening Star,* Tuesday, January 25, 1886.
[692] Ibid.
[693] *The Auckland Star,* January 25, 1887.
[694] Ibid.
[695] Ibid.
[696] Ibid.
[697] Ibid.

connecting the Waitemata with the Manukau via a canal with antagonistic rivalry between the two proposals of the way of the Tamaki and of the Whau.[698] Mr Sadler did not think that opposive competition was admissible, nor to be listened to. He supposed that both options were likely but suggested the Tamaki option commence immediately, for 700 ton ships. Then, after a dozen or so years, the Whau option for barges, small yachts and steamers under 110 tons each.[699] He believed the Whau way, environed by mudflats and marshes, to be too far away from the deep sea for large craft – whereas the Tamaki *was "a remarkably fine river, deep, picturesque, and well situated."*[700]

Four months later, a deputation from the Auckland Chamber of Commerce, consisting of Mr D R Caldwell (president), S Vaile, John Reid and Roberton, met with the Auckland Harbour Board in reference to the Waitemata-Manukau canal suggestion.[701] Also present were Messrs J E Taylor (of Mangere), J T Boylan, civil engineer, and Pycroft, who had devoted much attention to the scheme.[702] Mr Vaile, on behalf of the Chamber of Commerce, stated that they were in agreeance with the scheme and that the construction should take place as soon as possible. There could be no doubt as to the immense benefit of a canal. The Chamber also believed the time to be right for the Harbour Board to appoint a committee, which could confer with a Chamber of Commerce committee, enquire into the whole matter, and bring up a joint report, embodying the evidence obtained.[703]

Mr Taylor stated that he had considered the canal scheme for fourteen years and was in favour of the Tamaki route. He proposed that an embankment with a lock should be constructed at the Mangere bridge, and another embankment with a lock at the Tamaki bridge. By this means the water between these points could be kept at full tide level always. However, he also considered the Whau route to be a very formidable one.[704]

Mr Boylan said he was more in favour of the Whau Creek route. It would follow the Whau Creek up as far as it went, and then cross over to the Manukau waters. The Whau Creek would require to be deepened. The biggest cutting on the Whau route would be about 110 feet above the level of low water. On the Whau route the country was sandstone and clay, whereas they would strike volcanic rock on the Tamaki. The deepest cutting on the Tamaki route would be about 40 feet. There was deep water at the point where the Whau went into the Manukau.[705] Mr Pycroft agreed with Mr Boylan.[706]

Mr Kidd (the chairman of the Auckland Harbour Board) considered the scheme to be "of so much importance that it was a colonial, not a local, matter, and the Government should take it up."[707] Although his motion was seconded, several board members were not in

[698] *The Observer,* December 1, 1900.
[699] Ibid.
[700] Ibid.
[701] *The Auckland Star,* April 3, 1901.
[702] Ibid.
[703] Ibid.
[704] Ibid.
[705] Ibid.
[706] Ibid.
[707] Ibid.

favour. Mr W J Napier supposed the Government would tell the Board it was purely local work anyway. He considered that if the local authorities got the canal constructed and it worked properly, it would become a source of enormous pecuniary benefit to the Board.[708] Mr George Cozens stated the first step should be to get the Manukau Harbour placed under the control of the Auckland Harbour Board. The motion was thus withdrawn and the matter referred to the Works and Tariff Committee to consider and report.[709]

Some residents were in favour of a canal scheme. Mr G J Garland, in a letter to the Editor, stated: "If the Whau-Waitemata canal can be cut, and the Manukau Bar deepened, so that the large steamers now entering our port may pass through the bar at all states of the tide – well, there is a commercial prospect in the near future for Auckland possessed by no other city in this colony, and surpassed only by very few on this earth."[710]

Other residents opposed the Whau scheme. For example, Mr J E Taylor, a keen advocate of the Tamaki scheme, stated: "…the banks of the long Whau Creek are of such soft, slimy mud, of which is also a large area on either side such as mangroves grow on, that it is probable a canal dredged through this slippery material would soon silt up. It is certain such banks would not stand the wash from a steamer going at more than four miles an hour; while the firmer material in the wider Tamaki River and Manukau Harbour would allow a speed of eight to ten miles an hour, which would fully compensate for the nine miles' extra distance."[711]

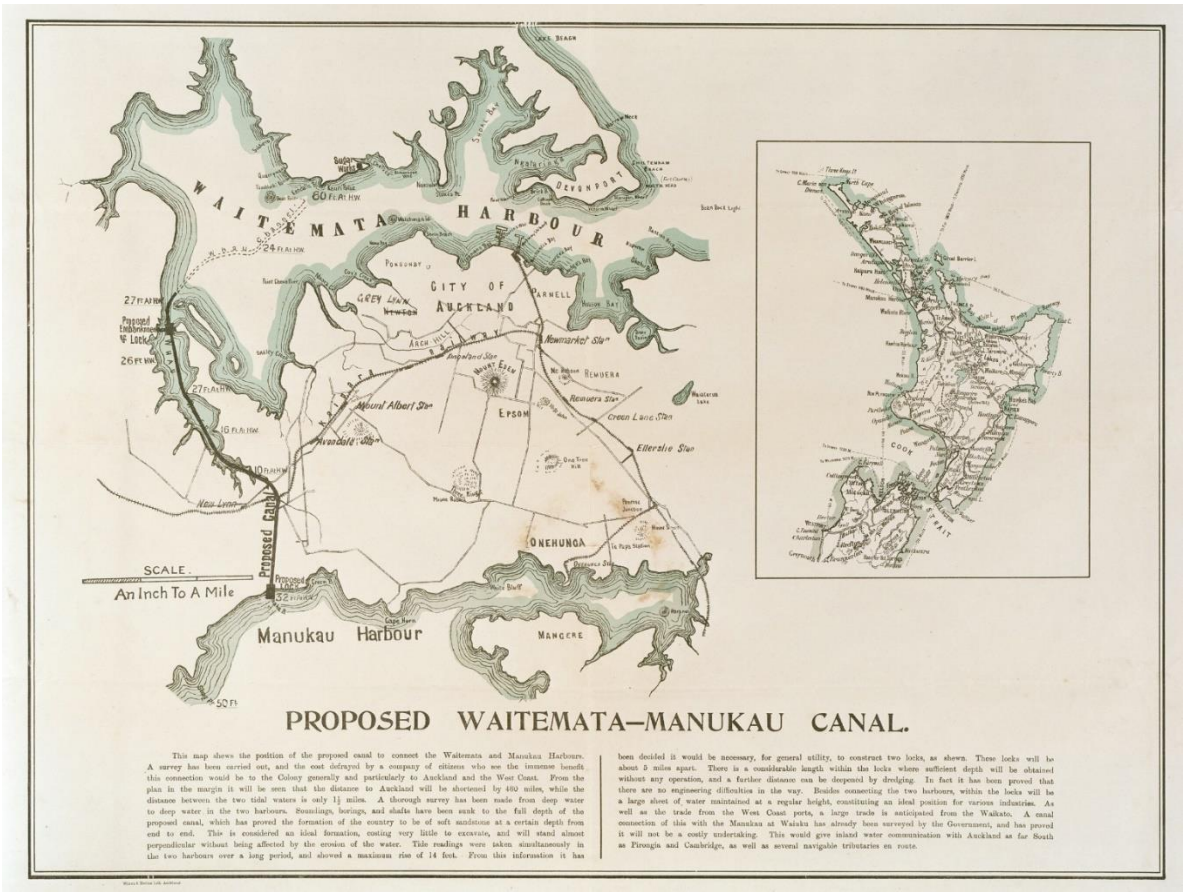
By mid-1902, it appeared most likely that both canals would be constructed within five years.[712] Mr John Bollard, giving a professional address to constituents, affirmed that 'a number of gentlemen had taken up the matter in Auckland, and proposed to form a company to do the work.'[713] An engineer had been over the ground, and proposed to construct the canal by the Whau Creek to Karaka Bay, and another from the Waikato River to the Manukau, by way of Waiuku.[714]

> *"An engineer who had his head screwed on the right way had been over the ground, and he proposed that the canal should be taken on the line of the Whau Creek and come out at Karaka Bay."*[715]

He estimated the work would cost £300,000. Westport Coal alone would pay £5000 a year at 1/per ton canal fee.[716] This private venture was to be a less pretentious canal than the one for which had been suggested and costed for in the past. It was to provide for small steamers only, not attempting to cater for large ocean ships.[717] A party of interested gentlemen, including Mr Bollard, H Atkinson, J T Boylan (engineer), Murdoch McLean, W

[708] Ibid.
[709] Ibid.
[710] *The New Zealand Herald,* Tuesday, June 4, 1901.
[711] *The Auckland Star,* Monday, April 8, 1901.
[712] *The Auckland Star,* Saturday, June 21, 1902.
[713] Ibid.
[714] Ibid.
[715] *The Poverty Bay Herald,* Monday, July 7, 1902.
[716] Ibid.
[717] *The Auckland Star,* Thursday, May 7, 1903.

Mennie, W Bailey, J Malcolm, W H Smith, and C Ranson, drove to Avondale across the Whau Bridge and then on to Astley's tannery to inspect the proposed route. Mr Atkinson led the way from the head of the Whau Creek across country to Karaka Bay. The gentlemen were generally surprised at the comparatively small cutting that would be required to connect the two waters.[718] The surface cutting required was approximately one mile and a half and the highest point, near the Manukau coast, was 120 feet. Even allowing for a depth of 20 feet in the canal, thus meeting the requirements of medium-sized steamers, the depth to be cut would only be 140 feet.[719] The largest cost would be dredging from the channel in the Waitemata Harbour up the Whau inlet to secure the requisite depth of 20 feet. The material lifted could, however, be profitably utilised in reclaiming the mangrove flats on the Whau Creek.[720] At Green Bay (Karaka) no dredging would be necessary as the depth of water was 24 feet, close to the shore. The formation and configuration of the country through which the canal would be cut also presented no engineering difficulties as the hardest material to be dealt with was soft sandstone.[721]



Source: Sir George Grey Special Collections, Auckland Libraries, NZ Map 6231, ca. 1903.

[718] Ibid.

[719] Ibid. Mr Atkinson pointed out that as the proposed canal between the two harbours would only save 80 miles on the trip between Auckland and Sydney, it would be useless to make it large enough to cater for the inter-colonial trade, as it would pay better to steam the extra five hours than to pay dock fees; but for smaller steamers there would be ample traffic.

[720] Ibid.

[721] Ibid.

THE WHAU CANAL.

(To the Editor.)

Sir,—With your kind permission I would ask the public of Auckland, more especially the mercantile public, if they are aware of the great benefit the opening of this canal would confer upon them and upon every settler on the West Coast? Then the Auckland merchant could compete on equal footing with he of Wellington. One thing at least is pretty clear—that neither Auckland, New Plymouth, with all the settlers on the West Coast, will ever benefit one penny by the Auckland and Wellington railway; from the position of the country and the route selected it becomes a perfectly useless and expensive farce. Auckland and Taranaki are but 120 miles apart by sea route, but by the above railway you travel over 300 miles. This every man from New Plymouth and all the Coast settlements would be forced to do when coming by train to this city. How, then, is it possible that this expensive line can ever benefit Auckland or the West Coast settlements, and yet a newspaper of Auckland preached up this line and preached down the Stratford proposal line with the full blast of its treacherous lungs.

It was supposed the new canal would put Auckland merchants in a better position to compete for the West Coast trade with Wellington. At that time, all goods for the West Coast had to be railed to Onehunga and then shipped for New Plymouth. However, the railway charges were so high (coming on the average to more than half the shipping charge from Onehunga to New Plymouth) that Auckland merchants were gradually finding themselves ousted from the trade on the West Coast.[722]

A paper war regarding the rival merits of either the Whau or the Tamaki route persisted over the next year or so. Interested persons argued over the relative costings, or whether there should be locks (and if so, how many) as well as which route would be more profitable.[723] The rumblings in the background had now become quite pronounced. A *New Zealand Herald* representative organised a *Special Interview* of the Canal scheme. Mr Atkinson was asked a series of questions in order to "ascertain more of what at first glance might seem to be a somewhat daring scheme."[724] (Mr Atkinsons idea was to link up the Waikato with the Kaipara by three short canals: (1) From the Waikato to Manukau, via Waiuku, (2) from the Manukau to the Waitemata via the Whau or the Tamaki Rivers, and (3) the Waitemata with the Kaipara, via Riverhead and Helensville.)

Mr Atkinsons first recommendation was the constitution of a public body, which would have charge of all the harbours and other waterways in the Auckland province, for reasons of economy and efficiency.[725]

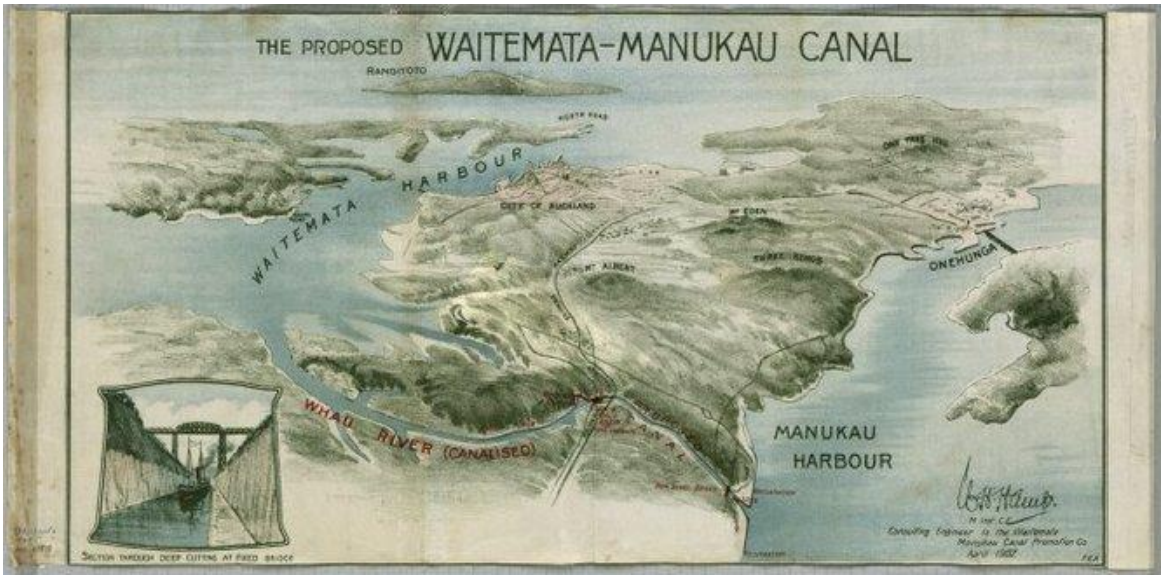
> *"Auckland, from its geographical position, has in many respects no interests in common with other parts of our colony. This applies particularly with respect to the immense advantages it has been endowed with by nature, in regard to inland and coastal navigable waterways, which I think should be improved and utilised for all they are worth. Everyone in the district will be naturally benefitted by this, but neither the Harbour Board nor any other local body has power to do what is necessary. The general Government would have to reckon with the rest of the colony before they could act, and we know what that means. Therefore, I say in this respect, let us have a true local governing body (give it whatever name you will), with the necessary statutory powers."*[726]

When asked how he proposed to raise the money for the scheme, Mr Atkinson stated the population in the provincial district of Auckland was, at that time, approximately 200,000.

[722] *Otago Daily Times,* Thursday, May 21, 1903.
[723] *The Auckland Star,* Wednesday, July 29, 1903; *The New Zealand Herald,* Thursday, August 6, 1903; *The New Zealand Herald,* Monday, September 12, 1904; *The Auckland Star,* Friday, December 9, 1904.
[724] *Supplement to the New Zealand Herald,* Wednesday, February 22, 1905.
[725] Ibid.
[726] Ibid.

Assuming £2,000,000 was borrowed for carrying out the full project, the expenditure would be spread out over 20 years. By that time, he suggested, the probable population would be about 400,000 – therefore making the debt £5 per head of population, which, at four per cent, would mean 4s per annum.[727] Mr Atkinson believed the schemes would derive far-reaching benefits, apart from commerce, for the inland waterways would be a great attraction for pleasure purposes for tourists, as well as local residents.[728]

The first duty of any new Board, Mr Atkinson stated, would be to make a thorough survey, and obtain reliable data as to probable cost and revenue from the different undertakings necessary in the way of canal connections, wharves, and improved facilities generally all around the coast.[729] In that respect, when any of the works were under consideration plans and full particulars would be available, which would greatly expedite the work.[730]



The proposed Waitemata-Manukau canal [cartographic material] / W.H. Hamer, consulting engineer to the Waitemata Manukau Canal Promotion Co.

Source: Digital copy. Wellington, N.Z: National Library of New Zealand, [2006].

[Auckland [N.Z.]: Waitemata Manukau Canal Promotion Co., 1907. From: Proposed Waitemata-Manukau canal: reports and plans re Whau and Tamaki routes / Auckland Harbour Board. Auckland, N.Z: Wilson & Horton, 1908. Facing page 24.]

Inset: Section through deep cutting at fixed bridge.

In his report in 1907, Mr Hamer stated the proposal to join both harbours was one that must be carried out, being necessitated by the required cheaper freights.[731] As an old resident of the district, Mr Gittos said he was sure the canal was feasible. The Maoris had given them a lesson in that. In olden times they crossed over the exact spot of the suggested route, bringing their canoes across country to Te Whau Point, from the head of the Whau River.[732]

[727] Ibid.
[728] Ibid.
[729] Ibid.
[730] Ibid.
[731] *The Auckland Star,* Saturday, September 28, 1912.
[732] Ibid.

Throughout the next couple of years, more newspaper articles and editorials debating the pros and cons of the canal schemes found their way to the printing presses of the country's leading newspapers. The main argument appeared to be over the preferred route – relative to cost and feasibility.[733] The New Zealand Government became involved in January 1914 when it set up the Inland Waterways Commission to report upon the practicability of the schemes.[734] By April of that year, personnel had been appointed by the government but it was thought unlikely the Commission would commence investigations before the end of the year.[735] Before investigations had been thoroughly undertaken however, the Commission was suspended due to the outbreak of World War I. The government was anxious to curtail expenditure during the war years.[736] After the war ended, the New Zealand Government reconstituted the Inland Waterways Commission.[737] The only obstacle to this was that only one appointee from 1914 remained and Cabinet had not yet decided upon their successors.[738] However, by December 1920, a new Commission appointment was announced, with the consequential report due by March 31, 1921.[739] The final report was damning for the Whau Canal Scheme:[740]

> *We are of the opinion that the popular view that there would be a considerable saving in time and money through the construction of a ship-canal by the Whau route for vessels trading from Auckland to Australia is fallacious. The saving in distance to Sydney of from 70 to 75 miles would be fully offset by the risk involved in navigating the Manukau bar by deep-draught vessels and by the canal dues that would have to be paid. The saving in time, owing to the slow navigation through the canal and locks and in the shallow waters of the harbour, would be negligible. … and we have concluded that there appears to be no present justification for the construction of the heavy and costly work needed for a canal, either for large vessels or for barges, upon the Whau route.*

Mr David B Russell, a local Avondale businessman and keen advocate for the Whau scheme, was not one to give up on the idea so quickly! He was given approval and moral support by the Hamilton Chamber of Commerce in 1927, to take the initiative in constructing the canal. Mr Russell expected to be able to raise the money in New Zealand and Australia by means of premium bonds, but upon failing that, he had recourse to raise the funds in America.[741] Although he continued to advocate the Whau scheme for many years, nothing ever eventuated. In 1938, however, to put on record his efforts for promoting the Whau Canal Scheme, Mr Russell presented a relief model and map of the scheme to the Old Colonists' Museum, together with a large quantity of documents.[742] The scheme appeared to have run its course completely.

---

[733] *The New Zealand Herald,* Wednesday, June 5, 1907; *The Auckland Star,* Saturday, April 19, 1913; *The Auckland Star,* Tuesday, August 4, 1914.
[734] *The New Zealand Herald,* Friday, January 30, 1914.
[735] *The West Coast Times,* Thursday, April 9, 1914; *The New Zealand Herald,* Thursday, May 21, 1914.
[736] *The Auckland Star,* Tuesday, June 20, 1916.
[737] *The Auckland Star,* Tuesday, July 29, 1919.
[738] *The Auckland Star,* Wednesday, March 3, 1920.
[739] *The Auckland Star,* Friday, December 17, 1920.
[740] "Auckland Canals and Inland Waterways Commission (Report of the)." Appendix to the Journals of the House of Representatives, Session II. 1921, New Zealand.
[741] *The New Zealand Herald,* Tuesday, March 22, 1927.
[742] *The New Zealand Herald,* Thursday, May 26, 1938.

In recent years a revisitation of the canal scheme discussion has taken place. In 2013, Simon Wilson, editor-at-large of the Metro Magazine discussed pushing a canal from Green Bay through to the Whau River beside the Avondale Racecourse, linking the Waitemata with the Manukau.[743] He also spoke of the Tamaki-Manukau link. "Dig out those canals," he said, "and you could connect the airport by ferries to any point on the Auckland city coastline."[744]

Perhaps the Auckland canal scheme may never die out completely. Although the idea may possibly gain more interest as a tourist attraction rather than a transportation route in the future, the seed that was sown in the mid-nineteenth century has certainly been nurtured over the years.

[743] Metro: "The Auckland Unitary Plan: The Battle to Build the City We Deserve" Current Affairs, From the Archives, Urban Design, June, 2013.
[744] Ibid.

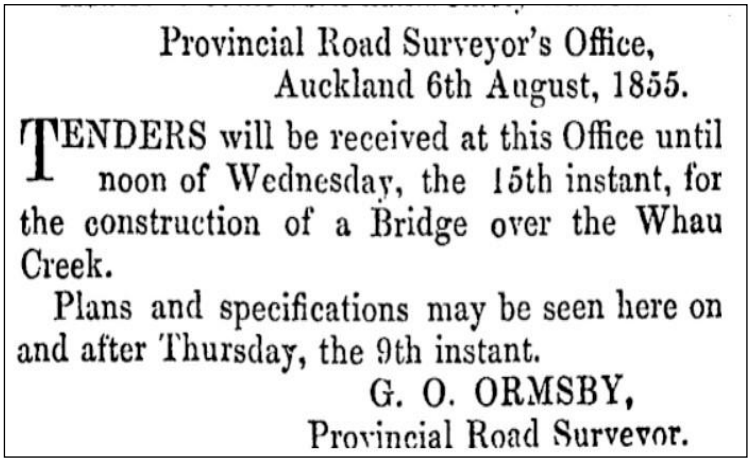
Chapter Seven

The Whau River Bridges

Great North Road/Whau River Bridge

1856 - Whau Bridge Number 1

In 1855, the provincial road surveyor, G. O. Ormsby was charged with requesting tenders for the construction of a bridge over the Whau Creek.[745] The bridge was built soon after tenders had closed on the 15th August 1885 and a contractor formally approved.



Provincial Road Surveyor's Office,
Auckland 6th August, 1855.

TENDERS will be received at this Office until noon of Wednesday, the 15th instant, for the construction of a Bridge over the Whau Creek.

Plans and specifications may be seen here on and after Thursday, the 9th instant.

G. O. ORMSBY,
Provincial Road Surveyor.

By February 1860, approximately four years after its construction, Mr Cadman (a member of the Provincial Council) moved, "that the attention of the Government be called to the state of the Whau Bridge, on the Great North Road, and that the Government be requested to cause the necessary repairs to be done to the bridge as soon as practicable." If the motion was carried, Mr Cadman was willing to state that the bridge was in a bad state – parts of it thoroughly impassable. He also wished to add that the work should be carried out immediately, to save a great deal of expense later. He would suggest the propriety of cross planking so that all parts of the bridge would be made available. It would strengthen the bridge, and cause it to last eight to ten years longer. Although another councillor, Mr Mears, seconded this motion Dr Pollen was not of the same mind. He was surprised that the bridge was in the state described, as it had only been recently erected. Dr Pollen was also not aware of any great traffic to cause it to be in such a bad state and he could not account for it otherwise than by its own "inherent rottenness". The discussion ensued with the result being that Mr Cadman withdrew his motion. [746] It appears that little to nothing was done to repair the bridge until it was demolished completely in 1870.

1870 - Whau Bridge Number 2

The Daily Southern Cross of 25 June 1870 chronicled "with great pleasure" the demolition of the old bridge, and the construction of a more "commodious and substantial one in its

[745] *The Daily Southern Cross,* 10 August 1855, p 4.

[746] "Provincial Council. Thursday, February 9, 1860"; *Daily Southern Cross,* 14 February 1860, p3.

place."[747] The article stated that it could not be forgotten that "for a long time past the old bridge was in a frightfully dilapidated and dangerous condition."[748] The contract for the new bridge was taken on by Mr Dundas and was built of the best kauri timber. It was 175ft in length and 14ft wide. The piles were 16in through; driven in at 25ft from each other and the stringers were 14ft x 8ft.[749] In every respect the durable nature of the work was easy to see. Mr Heighton, the inspector of the bridge, declared that it was "superior to any work of the kind that he has seen in New Zealand." In addition to the construction of the bridge, the approaches to it from both sides of the creek had been cut down and metalled. The article went on to say that with new dwellings being built nearby as well as a fellmonger's establishment and other signs of advancement and improvement, it was likely that the Whau would soon be one of the most prosperous districts in the province.[750] By July 1887, the Waitemata County Council was asking for tenders for the repair of the bridge.[751] The lowest tender, that of Mr Sam White was accepted at a cost of £42 10s.[752] However, by 1890, dispute had arisen regarding the allocation of cost to maintain the bridge.[753] The Government duly appointed a Commissioner, Mr Giles, to inquire into the matter. Representatives from the City Council, Eden Terrace District, Borough of Newton, Mount Eden District, and Mount Roskill District attended. A representative also appeared on behalf of the Avondale, Mount Albert, and Point Chevalier highway districts to resist the allocation.[754] Mr J M Alexander said he supposed that the Waitemata County Council was prepared to bear one-half the cost, as that body had not objected. He had a tally of the general traffic taken for six days with the bulk of the traffic being settlers coming from the city and adjoining boroughs and returning home again. Also adding to the tally, were the night soil carts travelling from the city to the depot at New Lynn, and the Waikumete cemetery. Mr Alexander stated that on holiday days the bridge was used by numbers of holiday seekers from the city. For example, Boxing day of the past year had seen over 1000 persons returning across the bridge in vehicles in the afternoon. Overall, the consensus from those opposing the allocation was that the principal traffic over the Whau Bridge came from the city. With all submissions heard, the hearing was adjourned.

1902 - Whau Bridge Number 3

[747] "The New Whau Bridge" *The Daily Southern Cross*, Saturday, June 25, 1870.
[748] Ibid.
[749] Ibid.
[750] Ibid.
[751] *The New Zealand Herald,* Saturday, July 2, 1887.
[752] Ibid.
[753] "Whau Bridge Maintenance. Court of Allocation" *The Auckland Evening Star,* Tuesday, May 27, 1890.
[754] Ibid.

Twelve years later, in January 1902, a tender was advertised in the *New Zealand Herald* for reconstruction of the Whau bridge.[755] The tender was accepted by Mr A. Watson. By August of the same year, at the monthly meeting of the Waitemata Council, the Chairman, Mr J O'Neill reported that the new bridge over the Whau Creek had now been very satisfactorily completed by the contractor. The cost, including additional land purchased for a deviation of the approach and extras on the work, was about £600.[756]

COUNTY OF WAITEMATA.

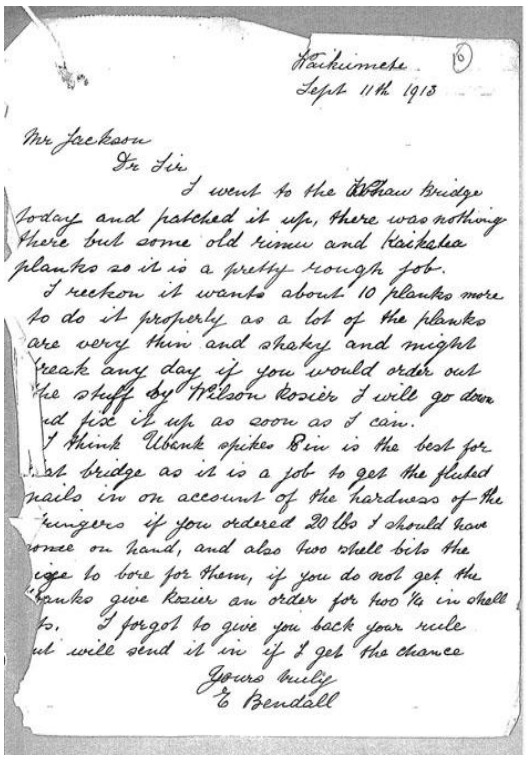
RECONSTRUCTION WHAU BRIDGE, AVONDALE.

Tenders are invited up to noon of FRIDAY, the 7th February, 1902, for the Reconstruction of the Whau Bridge, Avondale. Length, 165 feet, in 7 spans. Plans and specifications may be seen at the Engineer's Office, Palmerston Buildings, Auckland.

H. MUNRO WILSON,
County Engineer.

January 8, 1902.

By 1913 however, the bridge was in poor condition and a Mr Bendall was commissioned to do some repairs. The letter to the right is from G. Bendall to Mr Jackson, County Engineer, written on September 11, 1913.



Kaukimete
Sept 11th 1913

Mr Jackson
Dr Sir

I went to the Whau Bridge today and patched it up, there was nothing there but some old rimu and kaikaka planks so it is a pretty rough job.

I reckon it wants about 10 planks more to do it properly as a lot of the planks are very thin and shaky and might break any day if you would order out the stuff by Wilson Kozier I will go down and fix it up as soon as I can.

I think Ubank spikes 8in is the best for that bridge as it is a job to get the fluted nails in on account of the hardness of the timbers if you ordered 20 lbs I should have some on hand, and also two shell bits the bridge to bore for them, if you do not get the planks give Kozier an order for two 12 in shell bits. I forgot to give you back your rule but will send it in if I get the chance

Yours truly
G Bendall

File courtesy of Auckland Council Archives. Waitemata County Council Classified Subject Files of the County Engineer. Archives Reference: A05/3 Record No 105/4970 File 0076.

By December 1915, it was again becoming a danger to all who drove over it. New Lynn Town Board members had expressed the opinion that an accident would take place unless the bridge was speedily repaired.[757] The Board decided to write to the Waitemata County Council to this effect. In January 1916, the County Council agreed that the overall state of this third bridge was indeed very poor. Its condition was referred to by Mr Jackson, in his report of 14th January.[758] He confirmed that the bridge was in a 'distinctly dangerous state, and that repairs should be effected immediately.'[759] The council decided to repair the bridge temporarily, and to instruct the engineer to submit to the council at a future meeting an estimate of the cost of a concrete structure. Most of the council members agreed that with the increase of heavy traffic a new and substantial bridge was required.[760] In March, the question of the construction of a new bridge was again discussed

[755] *New Zealand Herald,* 11 January 1902, page 3; *New Zealand Herald*, 25 January 1902, page 3.
[756] *The Auckland Star,* Wednesday, August 6, 1902.
[757] *Auckland Star,* Tuesday, December 7, 1915.
[758] *New Zealand Herald,* Volume LIII, Issue 16127, 15 January 1916, page 6.
[759] Ibid.
[760] Ibid.

at length.[761] Several members expressed the opinion that the material required for the construction was not available until after the war. However, the Chairman stated he did not think they would get material cheaper than it was at that time for the next twenty years.[762] The meeting and the discussion was adjourned.

By 1920, with World War I behind them, attention was again paid to the Whau Bridge reconstruction. It was obvious at this point that a concrete bridge was desired.[763] The Auckland City Council and various interested suburban local bodies held a conference in which it was decided to construct a bridge with a width of 50 feet instead of 40 feet, as previously estimated.[764] The span was to be reduced from 175 feet to 25 feet, by building concrete abutments and filling in the approaches.[765] The county engineer was asked to report on the grades and cost of cutting down the hill in the Avondale Road District to fill the approaches. It was resolved to proceed with the work immediately, the cost being allocated by a Royal Commission to be appointed by the Minister for Public Works.[766] The *Auckland Star* stated, 'the Whau Bridge affects all traffic by the Great North Road, consequently the cost of £6000 will be distributed over a number of local bodies.'[767] This caused some dispute as some local bodies felt they should not have to pay (or pay less than what was expected of them) for the construction of the bridge. Therefore, a commission of inquiry for allotting the proportion of cost to be borne by the adjacent local bodies was opened in the auxiliary court. Mr J E Wilson, S.M. was appointed commissioner during the proceedings.[768]

[761] *Auckland Star*, Volume XLVII, Issue 61, 11 March 1916, page 8.
[762] Ibid.
[763] *New Zealand Herald*, Saturday, May 15, 1920.
[764] Ibid.
[765] Ibid.
[766] Ibid.
[767] *The Auckland Star, Saturday, May 15, 1920.*
[768] *Auckland Star,* Volume LI, Issue 181, 30 July 1920, Page 7.

These two photos show the Whau Bridge as it stood in 1920. Photo 1 (left) shows stereograph of the Great North Road and bridge over the Whau River at New Lynn. A horse and rider and a motorcycle and sidecar have crossed the bridge from New Lynn, both are coming towards the photographer, who is on the Avondale side. Photo 2 (right) shows stereograph of the Great North Road and the approach from Avondale leading to the bridge over the Whau River and view to New Lynn. The photographer's car is at the scene.

T. A. Bishop Collection, West Auckland Research Centre, Waitakere Central Library.

The existing bridge was vested by an Order-in-Council as to its control and management in the Waitemata County Council. The same Order-in-Council fixed the contributing bodies and the proportions in which they should contribute to construction, maintenance and upkeep of the existing bridge.[769] The proportions were as follows: Avondale Road Board – six forty-eighths; Mount Albert Road Board – three forty-eighths; Point Chevalier Road Board – two forty-eighths; Arch Hill Road Board – two forty-eighths; Mount Eden Road Board – two forty-eighths; Eden Terrace Road Board – one forty-eighth; Council of the Borough of Newton – three forty-eighths; Council of the City of Auckland – five forty-eighths.[770]

Since the construction of the existing bridge, two new local bodies, the Helensville Town Board and the New Lynn Town Board had come into existence. They were cited as parties now being included in the designation of cost allocation, alongside the original contributing authorities.[771] Further, the Arch Hill Road Board, the Eden Terrace Road Board and the Council of Newton had been merged into the Auckland City Council since the original allocation was made.[772] The newly proposed allocations were thus: Waitemata County Council – twelve forty-eighths; Auckland City Council – twelve forty-eighths; New Lynn Town Board – twelve forty-eighths; Avondale Road Board – twelve forty-eighths; Mount Albert Borough Council – two forty-eighths; Point Chevalier Road Board – two forty-eighths; Mount Eden Borough Council – one forty-eighth; Helensville Town Board – one forty-eighth.[773]

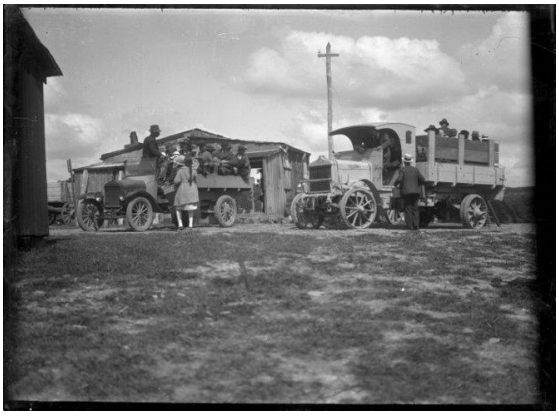
The proceedings were of a preliminary nature only. Arrangements were then agreed upon for the organisation of a committee to take a tally of the traffic over the existing bridge.[774] It was agreed that a fortnight's tally be taken during the first two weeks in September, 1920, with the cost in the first instance to be paid by the Waitemata County Council which would later be refunded by each local body in accordance with the allocation as finally decided by the Commission.[775] The tally caused some concern for some local bodies who were of the opinion that the tally, so far as identifying certain traffic over the bridge as belonging to Helensville, was not correct.[776]The Avondale Road Board and the New Lynn Town Board also took exception on the grounds that the month of September would not show a fair indication of the traffic. The month of November was, they considered, a fairer month for all parties concerned.[777] The two local bodies thus applied for one month's notice of the time

[769] Ibid.
[770] Ibid.
[771] Ibid.
[772] Ibid.
[773] Ibid.
[774] Ibid.
[775] *The Kaipara and Waitemata Echo,* Thursday, September 9, 1920.
[776] *The Kaipara and Waitemata Echo,* Thursday, October 21, 1920.
[777] *The Kaipara and Waitemata Echo,* Thursday, November 11, 1920.

of the sitting of the commission, so that an independent tally could be carried out in November.[778] This does not appear to have eventuated.

By the end of January, 1921, the Government had appointed another Commission (with Mr W R McKean appointed as commissioner) to inquire whether the new bridge should be constructed in ferro-concrete to replace the present span over the Whau River, and to thus allocate the cost among the local bodies.[779] Mr McVeagh, the representative for the Waitemata County Council, stated that since the current wooden bridge had been built, improvement in methods of traction together with important increases in population and in the volume of traffic made it imperative that a new bridge should be built.[780] The existing bridge carried the pipes that supplied the whole of the city with water, but the current state of the bridge was such that the vibration of traffic frequently caused breaches in the pipes.[781] There was now a cemetery site and a large area for waterworks and the Waitemata County Council derived no income at all from these areas – but yet these areas and other beautiful parks and spots for picnicking had greatly increased the traffic over the bridge. As the controlling body, the County Council had drawn plans for a new structure to the cost of £10,000. The bridge was described as having a central arch with a span of 24 feet.[782]

Mr Jackson, the Waitemata county engineer, gave evidence in support of the County Councils plans for a ferro-concrete bridge and its associated costs. He stated that 'at the present time loads of bricks, weighing ten tons, crossed the bridge, and he considered the factor of safety should be five. It was his opinion that the bridge did not provide such a factor.'[783] Although Mr Jackson thought the bridge perfectly safe for the ordinary motorcar to pass across, he did not think it wise for loaded charabancs (early form of motorised bus) to cross fully loaded and thus strongly advised the drivers to unload their passengers and cross the bridge empty![784] Others, however, described the bridge as "rattling like a hastily run-up scaffold whenever a vehicle crosses it," and wished for it to be closed.[785]



The photo above, although not taken in the Whau Bridge area, reflects the size of the motor charabancs and the trucks used around this time.[786]

[778] Ibid.
[779] *The Auckland Star,* Thursday, January 27, 1921.
[780] Ibid.
[781] Ibid.
[782] Ibid.
[783] *New Zealand Herald,* Saturday, January 29, 1921.
[784] *Auckland Star,* Volume LII, Issue 95, 22 April 1921, Page 5.
[785] *Auckland Star,* Volume LII, Issue 67, 19 March 1921, Page 7.
[786] Two vehicles transporting passengers across McCarroll's Gap on the Whangarei to Auckland railway line, 1923. Godber, Albert Percy, 1875-1949. Collection of albums, prints and negatives. Ref: APG-1708-1/2-G. Alexander Turnbull Library, Wellington, New Zealand.

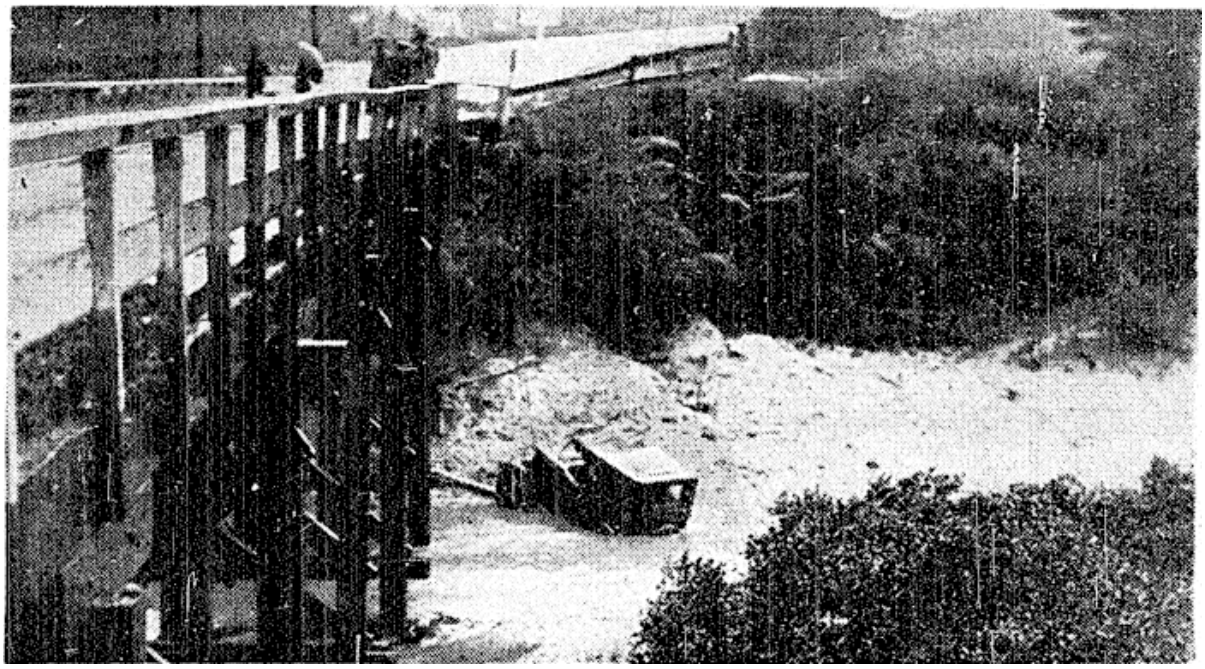
The Waitemata County Council argued that when the previous allocation for the bridge was fixed in 1890, the county abutted upon the Whau River. Since then the New Lynn town district had been constituted, and it formed no part of the county. The County Council, however, remained the controlling authority over the bridge, although its territory did not abut upon the stream. Mr McVeagh stated that 'it was anomalous that in these circumstances the County Council should have the responsibility of formulating plans for, and undertaking the construction of the bridge.'[787] The contention of the City Council, on the other hand, was that a cheaper structure than the one proposed might be provided, at an estimated cost of £8000. This structure would consist of a reinforced concrete bridge resting on steel cylinders. However, it was pointed out that the bridge proposed by the city would not make provision, as would the one proposed by the county, for the improvement of the grade of the road on the east side.[788]

New Lynn Town Board objected to the proposal width of the bridge – 40 feet – as being inadequate and counsel also argued the time was inopportune for the construction and the design was too expensive.[789] Similar objections were lodged by the Mount Albert Borough Council that the allocation of the cost was unsatisfactory, and the width was open to objection.[790] Avondale Road Board thought the proposed 40 feet width was insufficient and the allocation of the cost was excessive, according to the benefits to Avondale traffic.[791] Mount Eden Borough Council argued that it should not be asked to pay anything at all towards the construction as the bridge was of no benefit to most of its inhabitants.[792] Helensville Town Board also objected to inclusion, on the grounds that it was 30 miles away from the bridge, while if included it would contend that the cost was excessive.[793]

By June 1921, Engineer Jackson once again reported on the poor condition of the bridge, stating that 'so many planks of the Whau River bridge were badly worn, and that unless new planks were procured the crossing would have to be fenced off.'[794] The New Lynn Town Board notified the Council that it had agreed with Waitemata Council's consent to take over the control of the structure provided that the local authorities would contribute to the cost of repair. If this did not meet with the approval of the local bodies, the Board urged the Council to urgently make the bridge safe.[795] The Council finally carried a resolution that the Whau Bridge Commission be reinstated to complete its deliberations.[796]

[787] *New Zealand Herald,* Saturday, January 29, 1921.
[788] Ibid.
[789] *The Auckland Star,* Thursday, January 27, 1921.
[790] Ibid.
[791] Ibid.
[792] Ibid.
[793] Ibid.
[794] *The Auckland Star,* Saturday, June 18, 1921.
[795] Ibid.
[796] Ibid.

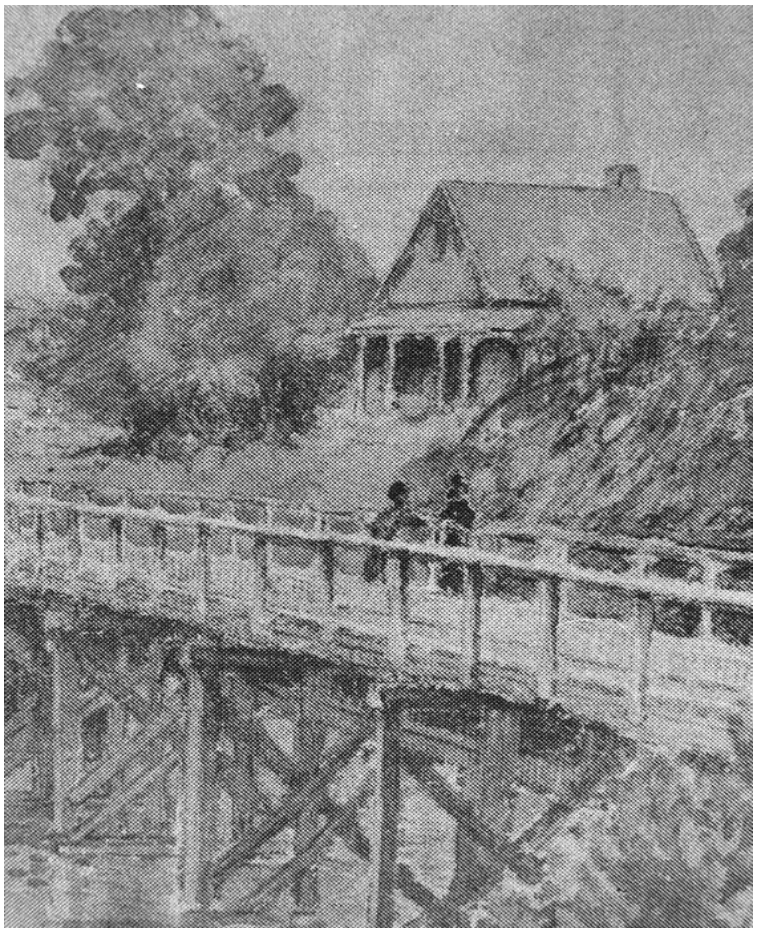
By April 1922, repairs had begun on the old bridge. Mr J Rogers, the New Lynn Town Board engineer, reported that good progress was being made with the repairs, which had been 'put in hand in accordance with the scheme adopted by the contributing bodies.'[797] The deck had been removed and an examination of the girders showed that the structure was practically sound.[798] Slight minor defects in two girders were disclosed which had been remedied by fishplates bolted to the girders, and as the outside upstream stringer was split in places through defective spiking it had been deemed desirable to duplicate it.[799] The result was that the structure would now be stronger than when first erected. Mr Rogers



stated this would involve a further expenditure of £75 to £100. This additional expenditure was approved along with improving the lighting of the bridge.[800]

The rough nature of the old wooden bridge can be visibly seen in the photo above taken in 1927. A taxicab had plunged through the barrier off the bridge and was left embedded in the tidal creek below. Thankfully, all three occupants were uninjured.[801] Several months before, there had been a collision between a fully-laden City Council wagon and a motorcar.[802] As the bridge was a one-way traffic viaduct it seems unusual that this incident occurred! There were other incidences of motor vehicles driving through the rickety wooden barriers but there is no evidence that serious injuries took place (although in one instance several men were rescued by rowboat from the top of their submerged vehicle).[803]

[797] *New Zealand Herald*, 28 April 1922, Volume LIX, Issue 18076.
[798] Ibid.
[799] Ibid.
[800] Ibid.
[801] *New Zealand Herald,* Volume LXIV, Issue 19736, 8 September 1927, Page 8.
[802] *The Auckland Star,* Friday, July 15, 1927.
[803] *The Auckland Star,* Wednesday, May 28, 1930.



The painting to the left, printed in the Western Leader in October 25, 1979 also portrays the Whau Bridge around that time (1924).[804]

Exactly one year after the taxicab accident, the bridge was again declared a hazard. In the Saturday, September 8, 1928 issue of the *New Zealand Herald,* the bridge was stated to be both 'a hindrance and obsolete'.[805] It had previously been agreed that it would not be economical to keep the old single car bridge in service indefinitely. A speed limit of little more than walking pace was at that time being enforced to preserve the failing structure until the new work could be undertaken.[806] The article stated the Whau Bridge had always been just short of traffic requirements over the last 70 years. Records recalled that on February 9, 1860, the Auckland Provincial Council had the following motion before it: - "That the attention of the Government be called to the state of the Whau Bridge and that necessary repairs be done as soon as possible."[807]

By February 1929, plans had been submitted to the Marine Department. The design was approved so long as it provided for the later installation of a moveable span if the Whau Canal was ever to be constructed in the future.[808] The department approved a bridge containing three spans of 50ft each, with a clearance of 14ft.[809] The plans drawn up by the New Lynn Town Board and approved by the Main Highways Board were for a bridge consisting of three spans, two of 25ft and one of 30ft.[810] The Auckland Harbour Board was far from happy with this design! The engineer, Mr D Holderness, stated: *"As you are aware this matter has been discussed on many occasions and the board's considered opinion has been that in the interests of navigation a permanent structure erected at this site should have one span of 50ft clear width, with 8 feet clear headroom above high water at spring*

[804] *Whau River Bridge, New Lynn.* J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.
[805] *The New Zealand Herald,* Saturday, September 8, 1928.
[806] Ibid.
[807] Ibid.
[808] *New Zealand Herald,* Tuesday, February 12, 1929.
[809] Ibid.
[810] *New Zealand Herald,* Monday, June 16, 1930 and *New Zealand Herald,* Wednesday, July 9, 1930.

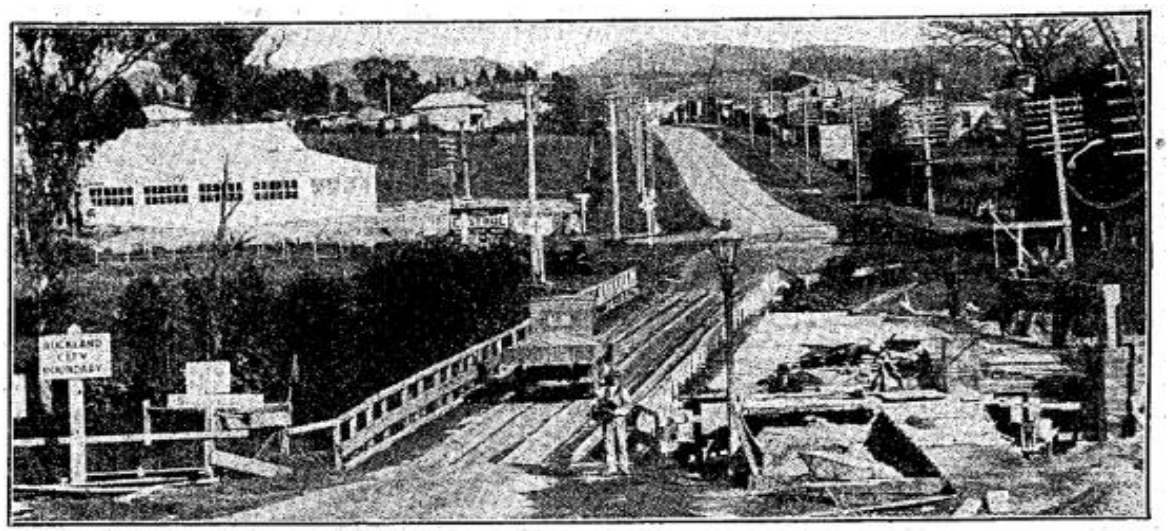
tides, at the piers, increasing to a minimum of 12 ft for the middle 25 ft of the span. Although very little used for navigation at present the Whau must be regarded as of considerable importance in view of the possibility of a canal being constructed to connect the Waitemata and Manukau Harbours by this route."[811]

"The stated minimum clearances for a bridge recommended and adopted by the board have been determined as the result of very full and complete investigations on the development of inland waterways and canals in the Auckland Province, and should the Whau Bridge be constructed on the lines now suggested by the contributing bodies it would require to be entirely reconstructed at considerable expense and inconvenience in the event of the canal being built."[812]

The Auckland Harbour Board suggested that all it was asking was for reasonable protection for navigation facilities for the future. One board member, however, was not of the same mind and thought it "seemed a cruel thing that the board could force local bodies to spend another £5000 on the very remote prospects of a canal ever being constructed." He went on to state that "no shipping, not even a dinghy, presently used the waterway."[813] As this was the only dissenting voice, the report was adopted.[814]

1931 - Whau Bridge Number 4

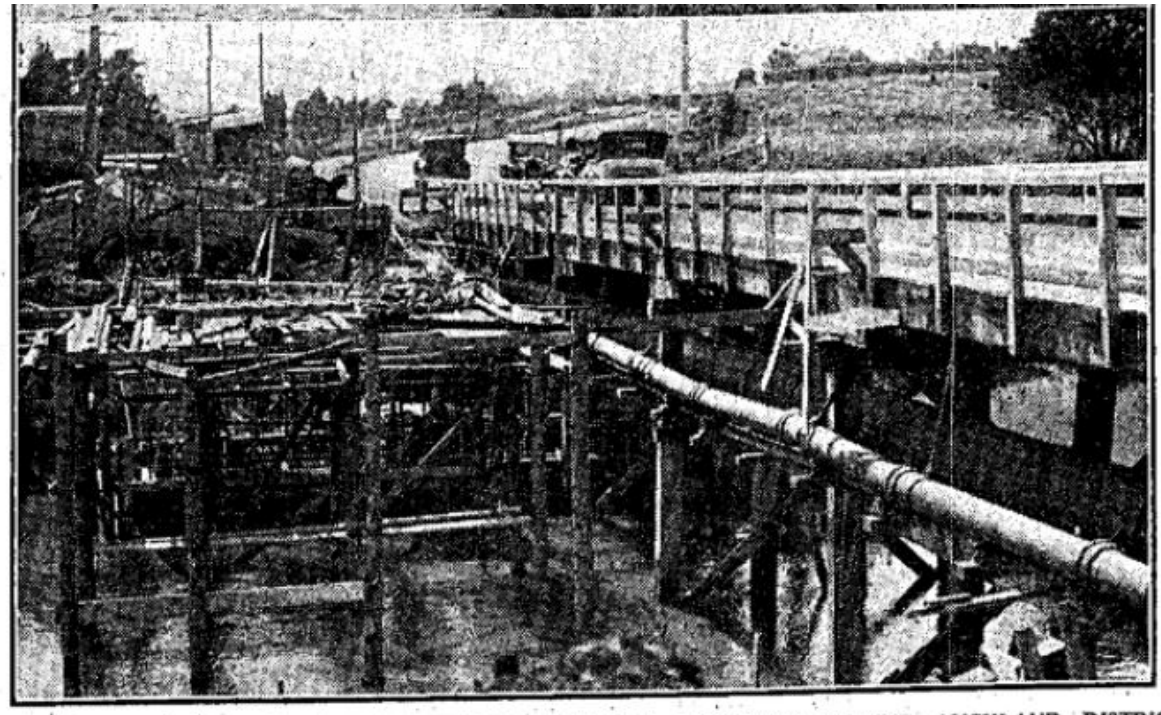
By February 1931, the contractor for the construction of the new bridge had begun placing the foundations.[815] The photo below shows initial construction work.[816]



PROGRESS ON A MUCH-NEEDED IMPROVEMENT ON THE NEW NORTH ROAD.
A photograph taken yesterday, showing the first section of the new bridge being constructed over the Whau River at Avondale. The old wooden bridge, which can accommodate one-way traffic only, is shown on the left.

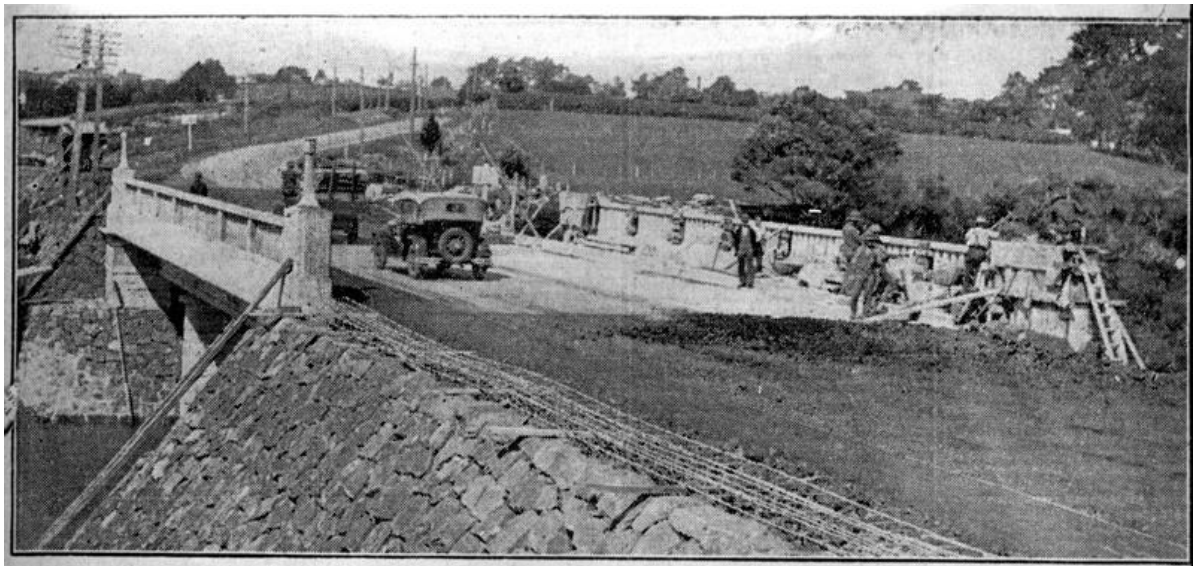
[811] *New Zealand Herald,* Wednesday, July 9, 1930.
[812] Ibid.
[813] Ibid.
[814] Ibid.
[815] *New Zealand Herald,* Saturday, February 14, 1931.
[816] *New Zealand Herald,* Thursday, March 12, 1931.

The following photo indicates the progress made by midyear.[817] By the end of 1931,



RECONSTRUCTION OF IMPORTANT BRIDGES ON MAIN HIGHWAYS IN THE AUCKLAND DISTRICT.
Top: The old stone bridge across the Tamaki River, near Otahuhu, which is to be replaced by a considerably widened concrete structure. Workmen can be seen widening the approach at the far end. Lower: Initial construction work on the down stream section of the new Whau Creek bridge. This portion will be completed first. All traffic will then be diverted to it, and the old wooden bridge will be demolished in order to make room for the second portion of the new bridge.

construction of the new bridge was complete (as pictured in photo at bottom of page).



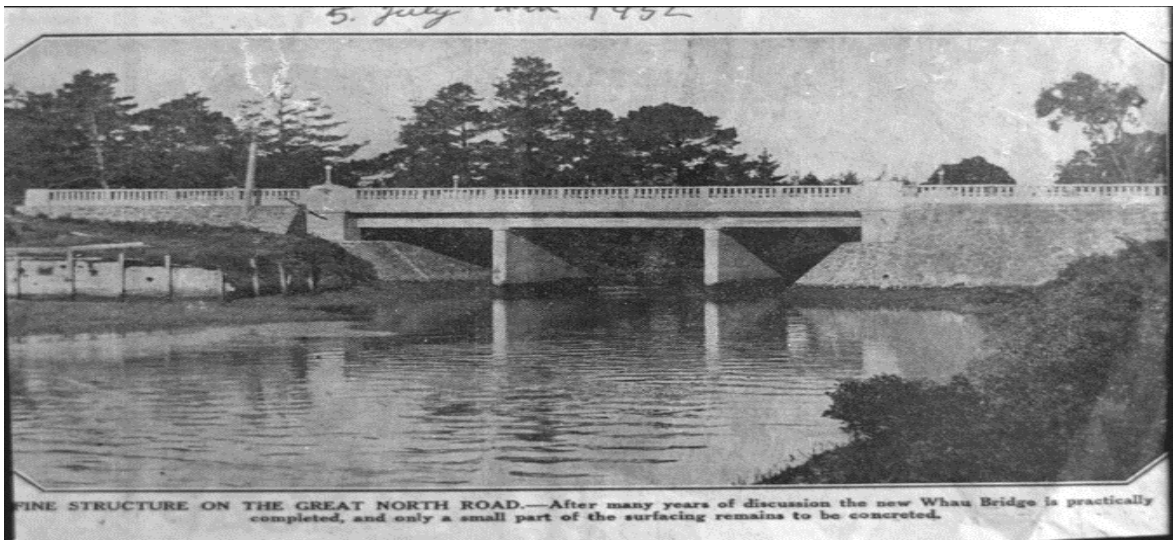
MUCH-NEEDED IMPROVEMENT ON THE GREAT NORTH ROAD: WHAU BRIDGE NOW NEARING COMPLETION.
A photograph taken yesterday, showing the up-to-date concrete bridge which has been constructed over the Whau Creek, and will be opened for two-way traffic to-day. It replaces the old wooden bridge, which provided for one-way traffic only.

[817] *New Zealand Herald,* Wednesday, July 22, 1931.

Photo above courtesy of New Zealand Herald, Saturday 5 December, 1931.

In 1932, some improvements to the city side of the new bridge were made by the City Council. The bend made by the joining of road and bridge was always awkward, and the concrete strip in the road did not exactly coincide with the middle of the bridge head. The difficulty had been remedied by tar-sealing the macadam on both sides of the roadway concrete. The approach was thus much more comfortable for drivers. The footpath was also straightened, and its grade improved.[818]

The scow 'Rahiri' alongside the Whau Bridge, 1948.
Waitakere Library, History and Reference Services.



Whau Bridge and breastwork over Whau Creek, New Lynn.
J. T. Diamond Collection, 5 July, 1952. West Auckland Research Centre, Waitakere Central Library.

[818] *The Auckland Star,* Tuesday, December 27, 1932.






Photos above show the bridge as it looks in 2016. Photos courtesy of author, 2016.

Whau Railway Bridge

By February 1872, the Auckland and Kaipara railway had already been handed over to the Government and was set for construction.[819] However, the initial plans did not include Henderson. A deputation of gentlemen, including Thomas Henderson therefore took a petition to the Public Works Minister at the General Government offices, requesting consideration for the extension of the railway into Auckland (refer newspaper clipping opposite)[820] The government officials stated that a survey was necessary before the project could be entertained.[821] The men, led by Henderson were quick to progress with the survey for the proposed line between Auckland and Riverhead.[822]

KAIPARA RAILWAY EXTENSION.

DEPUTATION TO THE PUBLIC WORKS MINISTER.

A DEPUTATION of gentlemen, consisting of Messrs Thomas Henderson, R. J. Creighton, W. Grahame, J. Lamb, J. M. Dargaville, A. K. Taylor, W. T. Boylan, S. Cochrane, P. O. Cannon, and Dr. Campbell, waited upon Mr Ormond, the Public Works Minister, at the General Government offices, at 2 o'clock to-day to request the General Government to take in consideration the extension of Kaipara Railway into Auckland from its present intended terminus at Harkins Point. The deputation having through the medium of Mr T Henderson stated their object, were informed by Mr Orman that it would be necessary to have a survey made, and he would like to have all information relating to the district and their population through which it was proposed to carry the line. When the information was all given which the Government would prefer in writing they would have great pleasure in entertaining the project. He also informed the deputation that the survey would be proceeded with as soon as possible. The deputation informed the Public Works Minister that the goods traffic for the district, both in gum, flax, and other produce, was very considerable,. After some further discussion, the deputation withdrew, having thanked the Minister for his courtesy.

A suggestion has been made by Mr Henderson… Those who are acquainted with the "lay" of the land between Auckland and Riverhead are aware that the railway must of necessity traverse that narrow neck of land north and west of the Parish of Titirangi, and between the townships of Whau North and Whau South. At the latter point on the Manukau harbour, some five miles below Onehunga, is 2o feet of water at lowest ebb, within two chains of the beach. A divergence from the direct route to Auckland of only half-a-mile would permit of the railway "tapping" this landing-place or harbour, where wharfage and landing accommodation for the whole of the West Coast trade could be provided at a very trifling expense. The difficulties in the way of navigation which are found between this point and Onehunga are well known, and it seems to us that a common-sense view of the matter would decide unhesitantly in favour of this important addition to the traffic of the Auckland and Kaipara Railway.[823]

By June 1872, the survey and plans had been completed. The final report stated:[824]

> *The line branches from the Waikato railway at Newmarket, and runs past Edgecombe's Northern Hotel, on the Great North Road; thence to the Whau, passing on the South of the Whau bridge; thence across Henderson's Creek and over Prior's Hill, 400 feet high, partly by a tunnel about a quarter of a mile long, which brings it into Brigham's Creek. The line then runs along the creek, crossing it at the Great North Road, and joining the Kaipara railway halfway between Harkin's Point and the Kumeo. The length of line will be 22.5 miles, and the steepest gradient 1 in 45.*

On 29 January 1873, the line inspector, the Honourable Mr Richardson, set out to inspect the line between Riverhead and Helensville.[825] On his return, and upon arriving at

[819] *The Wellington Independent,* February 7, 1872.
[820] *The Evening Star,* Wednesday, January 17, 1872.
[821] Ibid.
[822] *New Zealand Herald,* February 12, 1872, p2; *Daily Southern Cross,* February 22, 1872, p3.
[823] Ibid.
[824] *New Zealand Herald,* June 17, 1872, p2.

Henderson's Mill, he was approached by a deputation of gentlemen of the Titirangi, Waitakere and Waikomiti districts. The object of the deputation was to find out what steps had been taken in reference to the proposed extension, and to urge Mr Richardson to undertake the work without delay. He assured the men that the line was included in the Public Works Schedule. Trial surveys were being made and the work would be undertaken if the cost came within the Parliamentary limit. He also stated the traffic must be shown to pay working expenses. He requested the deputation to submit their views, and all such information as they could give the Government on the traffic question, in writing, and they would receive early and careful consideration.[826]

In mid-March, at a public meeting of the settlers, it was noted that a circular had been received by the Highways Board from Messrs Sheehan and Henderson, relative to the extension of the Kaipara Railway to Auckland, and requesting the Boards to collect statistics of the probable amount of traffic for the ensuing year.[827] Mr Fisher stated that the Matakohe Board had arranged for a hand-to-hand canvass, requesting storekeepers to furnish the Board with a return. It was not thought, however, that the information would give "a fair idea of the probable amount of future traffic, as the steamer and railway combined would very possibly create a traffic such as one at present could dream of."[828]

The complete report was handed to the Chamber of Commerce in February 1874 (see newspaper clipping on next page for details).[829] The Government consequently decided not to proceed with the railway from Riverhead to Auckland. The Government's official response stated:[830]

> *…The Kaipara railway may be said to have been built rather to develop a trade than to accommodate one already existing. The same may be said of its extension to Auckland. It will give the settlers on the west coast better communication with Auckland than the Kaipara Railway alone would do, but the traffic over it will be small until the Kaipara country becomes settled. The principal traffic with the west coast will for the present be in timber, but as there is a long navigation up the Kaipara river, which can only be carried on advantageously by small vessels, it is not likely that any timber will be sent over it except what is required for use in the town of Auckland. The main export will be by sea, as at present.*
>
> *Between Riverhead and Auckland the country is generally of the same barren character as between Riverhead and Kaipara, but there is some good land at the foot of the Waitakerei range which is settled. The area is, however, relatively to the length of the line, very small. The few mills and manufacturing establishments along the line are placed either near Auckland, or else in positions which give them easy water carriage, so that very little revenue can be expected from them.*
>
> *On the whole, I do not think either the Kaipara railway or the extension of it to Auckland, will pay working expenses, but the former having been already made, its usefulness will be increased by the construction of the latter.*

---

[825] *New Zealand Herald,* January 29, 1873, p2.
[826] Ibid.
[827] *Daily Southern Cross,* March 24, 1873, p3.
[828] Ibid.
[829] *Daily Southern Cross,* February 24, 1874, p2.
[830] *New Zealand Herald,* May 25, 1874, p2.

A public meeting was held in May, 1874, at the Whau Hall, in reference to the decision which was thought to be 'grossly incorrect.'[831] Mr J M Dargaville was compelled to think that the report had been based upon evidence of a one-sided character, by gentlemen in high positions who were against the construction of the line. He believed that if the General Assembly and even the General Government knew the facts of the case they would not have arrived at the decision to abandon the railway.[832] Other members of the public also exclaimed their disbelief at the decision. It was therefore resolved that a committee be formed to take their extreme concerns back to the government. It was a matter, the group stated, of 'simple justice to the North' and thus the line extension should be completed without delay.[833]

Unfortunately, two years later, the line was still nowhere in sight, and the government had yet to change its mind.[834] Two surveys had been started but for some reason abandoned. It was the opinion of those who were interested in the construction of the railway that the line had been made to deviate into bad country in order to afford the excuse that it could not be continued in consequence of the expense necessary to complete it.[835] After yet another meeting convened by the Chairmen of various highway districts interested in the extension of the Kaipara railway to Auckland,[836] and meetings held at the Whau[837] and Mount Albert,[838]
the government once again considered the extension. Two alternate routes were surveyed – the Mount Albert route and the Ponsonby route.[839] At a public meeting of ratepayers held at the Whau Public Hall it was resolved that the original line surveyed, via the Whau and Mount Albert proceed as soon as possible.[840] After much to-ing and fro-ing by ratepayers,[841] various local boards and the government a decision was finally made to commence the line.

THE KAIPARA RAILWAY.

THE following are the statistics in reference to the extension of the Kaipara railway to Auckland, handed to the Hon. Mr Vogel by the chairman of the deputation which waited upon him from the Chamber of Commerce on Saturday :—

RETURN of traffic between Helensville and Auckland in connection with the extension of the Kaipara railway to Auckland, for the six months ending 31st January, 1874

		£	s	d
Money paid by Government for carrying mails in the district		239	6	0
Two steamers, 'Gemini' and 'Eclipse' ply between Riverhead and Auckland—freight and passengers		1,500	0	0
Subsidy paid by Government to steamer on the Kaipara river, which would not require to be paid after the railway is opened		350	0	0
Passenger traffic—Riverhead to Helensville		312	0	0
Goods traffic—flax, gum, wheat, flour, &c., from Waitemata Mills to Auckland	Tons. 2,430			
Goods traffic—Waitemata Mills to Helensville	280			
Union Sash and Door Company would be carriers over the line	2,000			
Low and Motion's traffic to and from Auckland	2,194			
Traffic between Auckland and Whau certified by Mr. Bollard as general traffic	680			
Samuel Cochrane and Son ..	300			
L. Gittos	220			
Richard Keane—coal ..	490			
Henderson's Mill and Fryer's Creek—goods and gum	230			
Goods shipped from Auckland to the Kaipara district in schooners round the North Head	2,500			
Goods shipped by Walter Graham from the Manukau, and other shippers	520			
Kaihu Flax Mills	340			
	12,115			
At an average rate per ton of 7s. 6d. ..		4 543	2	6
Wool from Kaipara district, 100 bales, at 12s 6d ..		62	10	0
Passenger traffic—Henderson's Mill, Whau, Mount Albert, and Auckland		330	0	0
Timber—Messrs Gittos ..	feet 5,000			
.. Messrs. Cochrane and Son ..	12,000			
Henderson's Mill and Fryer's Creek ..	40,000			
Round House and Riverhead ..	50 000			
	107,000			
At 10s per 1,000'ft		53	10	0
Timber—Kopuru Saw Mill	750 000			
. Arapapu	1,280,000			
	2,030,000			
Helensville to Auckland, at 20s. per 1,000ft		2 030	0	0
Farm produce, estimated at		200	0	0
		£9 570	8	6

NOTE.—The traffic of this district is rapidly increasing, and the estimate given above is taken from the various people engaged in business in it, and no doubt but it would increase more rapidly if the railway is extended to Auckland

[831] Ibid.
[832] Ibid.
[833] Ibid.
[834] *New Zealand Herald,* May 18 1876, p3.
[835] Ibid.
[836] *Auckland Star,* June 2, 1876, p2; *New Zealand Herald,* June 2, 1876; *Daily Southern Cross,* June 2, 1876.
[837] *Auckland Star,* August 11, 1876, p3.
[838] *Daily Southern Cross,* August 11, 1876, p3.
[839] *Auckland Star,* January 5, 1877, p3.
[840] Ibid; *New Zealand Herald,* January 13, 1877, p2.

OPENING OF THE KAIPARA RAILWAY.

THE first section of the railway to the North was opened yesterday under somewhat favourable auspices, the occasion being the race meeting at Henderson's Mill. The train started from the Auckland station at half-past 10 o'clock, with a good row of carriages and a large crowd of passengers. On leaving the Newmarket station there were nine carriages attached to the engine, and as these were filled, and extra passengers were taken up at the intermediate stations, the load became a trying one. After passing the Whau this fact became manifest sensibly, for it was found necessary to detach a portion of the carriages, and go on with the remainder. Fortunately, the distance was short, so that those left in waiting were, after all, in good time to witness the races. The return journey was accomplished without interruption.

On 17 March 1881 (St Patrick's Day), the first section of the railway to the North was opened.[842] The occasion was made more memorable by the fact that passengers were being taken to the Henderson Mill Races. With a large crowd and nine full carriages, the engine soon found the load too difficult. After passing the Whau several carriages had to be detached and the passengers were required to walk the rest of the way. This happened at a steep incline between New Lynn and Waikomiti (Glen Eden), known locally as Scroggy Hill, which remained a major obstacle until a diversion was dug in the 1930s. Thankfully the passengers were not far from their destination!

This, unfortunately, was not the only incident that occurred on the railway bridge. At 6:50am on May 28, 1913, a passenger train from Henderson and a train from Auckland collided on the bridge.[843] Two carriages were telescoped, and both engines were badly damaged. The first reports indicated that the signals were obscured by heavy fog and were not visible until the train was right upon them. The driver of the Henderson train quickly applied the brakes, resulting in the passengers being thrown from their seats. Because of the steep grade and the frost, the train did not have time to slow down before crashing into the Auckland train in the middle of the bridge. The first carriage of the Henderson train was not damaged, but the next two were completely telescoped, and 'crumpled like a concertina.'[844] Both carriages left the railway lines, and were hanging over the side of the bridge.[845] There were between 70 to 100 passengers on the Henderson train and a few workmen on the other. Many passengers sustained slight injuries, cuts and bruises. However, a resident of Oratia, Hurst Stone, was so severely crushed and injured internally that small hopes were held for his recovery. Several other men and women were also badly hurt, mostly with facial lacerations.[846] Mr Farrell, a passenger on the Henderson train gave an account of his ordeal:[847]

A MIRACULOUS ESCAPE FROM A GREATER CATASTROPHE: A GENERAL VIEW OF THE TELESCOPED CARS WHICH REMAINED ON THE BRIDGE, 60ft ABOVE THE CREEK.

Photo:' Sir George Grey Special Collections, Auckland Libraries, AWNS-19130605-11-2'
Taken from the supplement to the Auckland Weekly News 5 June 1913, p11.

[841] *Auckland Star,* July 10, 1878, p3; *Auckland Star, July 19, 1878, p2; New Zealand Herald,* March 13, 1879, p2.
[842] *Auckland Evening Star,* Wednesday, March 18, 1881.
[843] *Evening Post,* May 28, 1913, p7.
[844] Ibid.
[845] Ibid.
[846] Ibid.
[847] *Otago Daily Times,* May 29, 1913, p8.

It makes me shudder to look at it. I can't for the life of me make out how I got clear. The first I knew of anything unusual was at the bend, a few chains before reaching the bridge, when the Westinghouse brake went on very suddenly, and jolted the train so much that I was lifted off the seat and thrown forward.

I had no sooner recovered, when a terrible crash occurred. I was dashed to the floor. There was a great crunching of timber. As I looked up I saw the buffers and floor of the carriage ahead shooting over the top of me. Although I felt that my end had come, I decided to make a last effort. Groping for the door at the rear of the carriage, I managed to crawl from among a heap of splintered timber and broken glass while the crash was still going on.

This took me to the dividing corridor beyond the door. I was almost in the act of jumping for my life to the creek below, when the smashing seemed to cease. I scrambled down to the sleepers on the bridge. The train was at a standstill, and the passengers all around were inquiring after anyone who might have been in the telescoped car. I did not see Stone. I don't know what happened then, because I lost my head for about 20 minutes, like a good many more who were in the smash.

Amazingly, Mr Farrell was not hurt at all but he was very shaken up.[848]

An enquiry was held by the Department of Railways on December 9, 1913, to ascertain the cause of the accident.[849] Residents of New Lynn had asked for a Parliamentary investigation into the causes leading to the accident. Mr J F McDermott, an ex-railway employee, who was stationed at New Lynn from June to December 1911, expressed the opinion that the yarding and engine watering accommodation were at the time of the accident quite inadequate.[850] He also contended that the lack of shunting facilities for trains going north was a source of danger if trains were crossing there. In the case in question, only six minutes were allowed for the actual crossing of the trains, including all incidental work.[851] Mr McDermott contended that although the Department was aware of these disabilities, it had failed to remedy them. He also stated that home signals only existed at New Lynn, while a bad curve increased the difficulties. As to the fog signalling regulations, McDermott had not seen any fog signalling done or instructed during his service. He regarded the regulations as 'a dead letter.'[852] He expressed the opinion that railway examinations were not sufficiently thorough.[853]

Another resident of New Lynn, Mr O Grandison, expressed the opinion that the practice of shunting trains from sidings on to the main line after the signalling of an approaching train from Henderson was a dangerous one. He had been told, however, that it was necessary to keep the timetable. [854]With four passenger trains crossing at New Lynn daily, along with regular shunting operations throughout the day, the station had become a dangerous place for passengers. The tablet porter had too much to do, and the public felt unsafe in travelling from New Lynn.[855]

A Margin, manager of the New Lynn brickworks, pointed out that during the last six years the traffic had increased there enormously. The whole of the various brickworks output

[848] Ibid.
[849] *Evening Post,* September 9, 1913, p8.
[850] Ibid.
[851] Ibid.
[852] Ibid. A fog signalman was only appointed at New Lynn two months after the accident.
[853] Ibid.
[854] Ibid.
[855] Ibid.

went through New Lynn, and the amount handled daily was enormous. He agreed with McDermott that the accommodation and facilities were totally inadequate.[856] An island platform was badly needed and had long been sought by residents. Following the hearing of all evidence (over the period of several days), the Railway Committee appointed by the House of Representatives reported on its findings:[857]

> That there was a slight fog in the morning, when the collision occurred, but not sufficient to warrant the use of the fog signals. That the porter was not to blame. That driver Corich was guilty of an error in judgment in not slowing down early enough to avoid passing the danger signal. That railway facilities at New Lynn are sufficient to carry out the work with safety.

The committee recommended that Porter Mortimer be exonerated and that the driver Corich, owing to his youth, and not being of ripe experience, be retained in the service at lower capacity for a time.[858]

Railway bridge over Whau River, New Lynn, November 1960.
J. T. Diamond Collection, West Auckland Research Centre, Waitakere Central Library.

The line was upgraded between 2008-2010 and the original timber railway bridge was replaced by a double concrete crossing.

[856] *Evening Post,* September 10, 1913, p8.
[857] *Auckland Star,* September 12, 1913, p6.
[858] Ibid; *Thames Star,* October 24, 1913, p5; *Bay of Plenty Times,* October 24, 1913, p5.

The Taonga

Chapter Eight

Te Whau – A Treasured Taonga

The Whau River is a taonga to be treasured by all New Zealanders. As a taonga, it requires ongoing support through community participation and kaitiakitanga (guardianship and protection) in order for it to once again become the healthy and beautiful waterway it once was. Although it is the responsibility of all, several groups have taken on the commendable task of the river's ecological restoration and conservation. The Whau River Catchment Trust (WRCT) is the principal environmental umbrella organisation for the Whau River catchment and together with Friends of the Whau (FOW) and other entities, is working towards this united goal. The WRCT looks after the governance and management of projects, while FOW takes care of the needs of FOW members and volunteers.

The Whau River Catchment Trust (WRCT)

The WRCT (established in 2012) evolved out of the Friends of the Whau Inc 2000 and is a charitable entity based in New Lynn, Auckland.[859] It delivers a wide range of community-based environmental projects, principally in collaboration with the Auckland Council and other key stakeholders within the catchment. The programmes and projects are focused in the areas of ecological restoration and conservation.[860]

The key purposes of the Trust are as follows:[861]

a) To provide leadership by adopting an Ecosystem-based Management approach with the aim of restoring and sustaining ecosystems within the Whau River catchment to meet both ecological and human needs now and in the future. Ecosystem Management aims to conserve major ecological services and restore natural resources while meeting the socio-economic, political and cultural needs of current and future generations. Approaches to effective ecosystem management engage conservation efforts at both a local or landscape level and involves: adaptive management, natural resource management, strategic management, and command and control management;

b) To maintain, enhance, protect, restore, monitor and nurture the natural ecology and its environment, the support of revegetation and conservation projects with particular emphasis on the Whau River, its tributaries, margins and catchment areas;

c) To promote community accessibility to and involvement with the Whau River, its tributaries, margins and catchment areas including but not limited to the development of

[859] The Whau River Catchment Trust at www.whauriver.org.nz/the-whau-river-catchment-trust.
[860] Ibid.
[861] Ibid.

Greenways incorporating walkways and cycle ways to and along the Whau River, its tributaries, margins and catchment areas;

d) To promote local environmental leadership, augment knowledge, mentor, educate and raise public awareness amongst local communities living within the Whau River catchment of the principles and practices of ecological restoration;

e) To work with citizens, communities, organisations, iwi, businesses, local and central government and other voluntary and statutory organisations fostering community involvement and kaitiakitanga on projects carried out within the Whau River catchment as well as to ensure the ecology, history and cultural associations of the Whau River are protected and enhanced, including encouragement of appropriate public access to the Whau;

Tree plantings an Earth Day present

By SARAH LAWRENCE

Giving nature a helping hand was the order of Earth Day.

Little armies of volunteers last Saturday planted trees and cleaned up areas to beautify west Auckland and undo some of the human impact.

Avondale Community Board member Catherine Farmer says the tree and shrub planting at Heron Park in Avondale attracted families and Minister of Conservation Sandra Lee. Around 50 trees and shrubs were planted including three puriri by the minister.

"We are not just planting and doing this for now but for tomorrow and future generations to enjoy and appreciate," Ms Farmer says.

Around 30 families also turned up at Shadbolt Park to plant 400 native trees.

Friends of the Whau spokeswoman Lyn Poynter says people made the dirty work quite enjoyable.

Ms Poynter says they have trees left and are planning another planting day from 1pm on May 14 in Olympic Park.

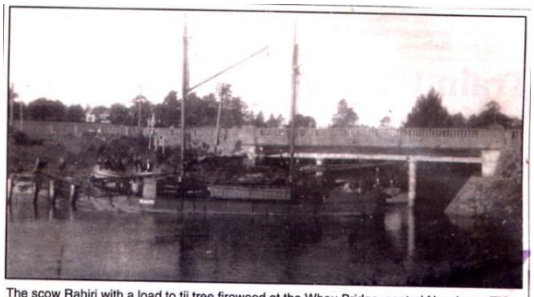
Certificates were given to the children who helped plant the Shadbolt Park trees.

WESTERN LEADER, Friday May 5, 2000

f) To interact with, provide for forums, and co-ordinate with other organisations, with positive initiatives for the ecological restoration of the Whau River, its tributaries, margins and catchment areas.

Friends of the Whau (FOW)

Friends of the Whau Inc. (pronounced 'foe') are a community-based ecological restoration organisation based in New Lynn, West Auckland. FOW was established in July 2000 in response to local concerns over activities that were having adverse environmental effects on the health and well-being of the Whau River. The entity was formed after a report was released by the (former) Waitakere City Council on the degraded condition of the Avondale Stream and also after a major pollution incident occurred in the Whau River estuary from an adjoining business area.[862]



The scow Rahiri with a load to tii tree firewood at the Whau Bridge, central New Lynn. This was the last scow to use the landing, and the picture dates from about 1948.

Retracing friends of the Whau

Friends of the Whau want people to wow them with their memories of the river. Written anecdotes of the brick works, farms and fishing are some suggested topics.

This will help Friends of the Whau (FOW) find out what role the river played in west Auckland communities' development.

"We think there are some very interesting stories out there," says FOW spokesperson Lyn Poyner.

Anecdotes from both long ago and recent times are sought, and some may feature in the *West Weekly*.

Yesterday FOW held its inaugural meeting where members signed their constitution.

"The aim is to raise awareness and encourage communities to actively preserve and restore the river's ecology, history and cultural associations", says Ms Poyner.

The group's first big event was celebrating worldwide Earth Day on April 29. They planted 1500 native trees in Shadbolt Park, which will help the Avondale Stream's health.

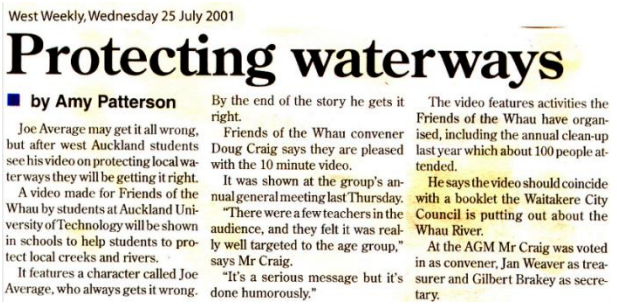
Plants alongside waterways help filter excess water, and prevent weeds from spreading, says Ms Poyner.

FOW is a pilot group for the council's Waicare programme, which encourages people to get involved in monitoring their local waterways.

West Weekly, Wednesday 10 May 2000

[862] The Whau River Catchment Trust at www.whauriver.org.nz/the-friends-of-the-whau-inc. Friends of the Whau has received various awards, including the Ministry for the Environment's Green Ribbon Award, June 2002 (Urban Conservation category), Infratil Waitakere City Community Awards 2010 (Heritage and Environmental Friends of the Whau and New Lynn Sea Scout Group), Wai Care Awards 2011 (Community

FOW's purpose is to raise awareness and encourage the community to actively participate in the protection and restoration of the Whau River catchment's ecology, history and cultural associations. This is realised by supporting volunteers through education and practical action to restore the Whau River systems' natural ecology - by promoting the reduction of pollution and by encouraging the natural regeneration of the native flora and fauna. To promote ecological health FOW organises regular community-based activities. These instrumental activities include monitoring the biodiversity and ecosystems of the catchment, managing weed and animal pests (biosecurity), reducing pollution and removal of litter, undertaking eco-sourced planting programmes on the margins of riparian areas and elsewhere within the catchment, and wildlife habitat restoration.



West Weekly, Wednesday 25 July 2001

Protecting waterways

by Amy Patterson

Joe Average may get it all wrong, but after west Auckland students see his video on protecting local waterways they will be getting it right.

A video made for Friends of the Whau by students at Auckland University of Technology will be shown in schools to help students to protect local creeks and rivers.

It features a character called Joe Average, who always gets it wrong. By the end of the story he gets it right.

Friends of the Whau convener Doug Craig says they are pleased with the 10 minute video.

It was shown at the group's annual general meeting last Thursday.

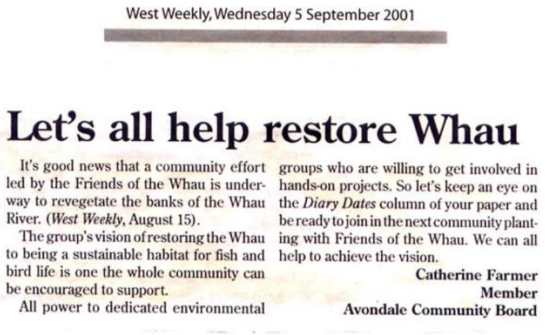
"There were a few teachers in the audience, and they felt it was really well targeted to the age group," says Mr Craig.

"It's a serious message but it's done humorously."

The video features activities the Friends of the Whau have organised, including the annual clean-up last year which about 100 people attended.

He says the video should coincide with a booklet the Waitakere City Council is putting out about the Whau River.

At the AGM Mr Craig was voted in as convener, Jan Weaver as treasurer and Gilbert Brakey as secretary.



West Weekly, Wednesday 5 September 2001

Let's all help restore Whau

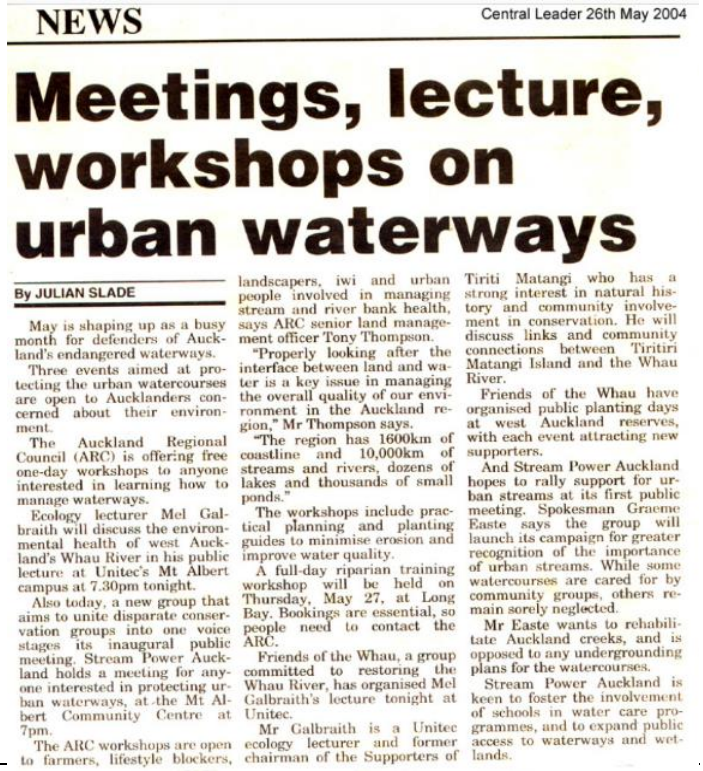
It's good news that a community effort led by the Friends of the Whau is underway to revegetate the banks of the Whau River. (*West Weekly*, August 15).

The group's vision of restoring the Whau to being a sustainable habitat for fish and bird life is one the whole community can be encouraged to support.

All power to dedicated environmental groups who are willing to get involved in hands-on projects. So let's keep an eye on the *Diary Dates* column of your paper and be ready to join in the next community planting with Friends of the Whau. We can all help to achieve the vision.

Catherine Farmer
Member
Avondale Community Board

The FOW work closely with schools, community groups and local businesses in order to raise community awareness of the environmental threats and opportunities facing the Whau Catchment. Information is distributed largely by using social media to inform FOW members and the wider public of the current work underway. They also inform residents about what they can do on their own private properties and in their communities (for example, through the Sustainable Neighbourhoods Program). They encourage the collection of historic, cultural and natural associations of the communities within the catchment, and make these resources available to the public through libraries, workshops, meetings and other public presentations. FOW talk with developers and property owners about the need to minimise environmental impacts upon the



NEWS

Central Leader 26th May 2004

Meetings, lecture, workshops on urban waterways

By JULIAN SLADE

May is shaping up as a busy month for defenders of Auckland's endangered waterways.

Three events aimed at protecting the urban watercourses are open to Aucklanders concerned about their environment.

The Auckland Regional Council (ARC) is offering free one-day workshops to anyone interested in learning how to manage waterways.

Ecology lecturer Mel Galbraith will discuss the environmental health of west Auckland's Whau River in his public lecture at Unitec's Mt Albert campus at 7.30pm tonight.

Also today, a new group that aims to unite disparate conservation groups into one voice stages its inaugural public meeting. Stream Power Auckland holds a meeting for anyone interested in protecting urban waterways, at the Mt Albert Community Centre at 7pm.

The ARC workshops are open to farmers, lifestyle blockers, landscapers, iwi and urban people involved in managing stream and river bank health, says ARC senior land management officer Tony Thompson.

"Properly looking after the interface between land and water is a key issue in managing the overall quality of our environment in the Auckland region," Mr Thompson says.

"The region has 1600km of coastline and 10,000km of streams and rivers, dozens of lakes and thousands of small ponds."

The workshops include practical planning and planting guides to minimise erosion and improve water quality.

A full-day riparian training workshop will be held on Thursday, May 27, at Long Bay. Bookings are essential, so people need to contact the ARC.

Friends of the Whau, a group committed to restoring the Whau River, has organised Mel Galbraith's lecture tonight at Unitec.

Mr Galbraith is a Unitec ecology lecturer and former chairman of the Supporters of Tiriti Matangi who has a strong interest in natural history and community involvement in conservation. He will discuss links and community connections between Tiritiri Matangi Island and the Whau River.

Friends of the Whau have organised public planting days at west Auckland reserves, with each event attracting new supporters.

And Stream Power Auckland hopes to rally support for urban streams at its first public meeting. Spokesman Graeme Easte says the group will launch its campaign for greater recognition of the importance of urban streams. While some watercourses are cared for by community groups, others remain sorely neglected.

Mr Easte wants to rehabilitate Auckland creeks, and is opposed to any undergrounding plans for the watercourses.

Stream Power Auckland is keen to foster the involvement of schools in water care programmes, and to expand public access to waterways and wetlands.

Group Involvement in Action – 1st Place), and the Auckland Council Infratil Community Awards 2011 (Heritage and Environment Recognition award).

Whau River and strongly advocate for better access to waterways (eg. Greenways, walkways and cycleways). They collaborate with other environmental organisations such as WaiCare, Keep Waitakere Beautiful, Weedfree Trust, Project Twin Streams, and Forest and Bird. FOW members liaise and negotiate with Council, Local Boards and water supply authorities to ensure their programs and policies support ecological goals. They encourage new skills such as plant propagation and maintenance, water quality monitoring, weed identification and control, and pest monitoring for best ecological outcomes. Members also undertake site analysis and design for ecological plantings within public reserves and on private land areas.

Te Whau Pathway

Te Whau Pathway originated out of a concept put forward by the WRCT in early 2012 to the Whau Local Board and Portage Licencing Trust (refer to the WRCT website "Whau West Greenway). It takes the pedestrian or cyclist on a scenic journey beside the beautiful banks of the Whau River. It lazily snakes its way through both parks and reserves – hugging the water's edge to provide the best views of this historically important taonga. And yet, the pathway does much more than merely providing a means of traveling from Point A to Point B. More than anything else, it provides a valuable link between the past and the present, the old with the new, and it links people to people. It allows imaginative minds to recreate scenes of Maori waka gliding through the mirror-like, calm waters, or to imagine the buzz and excitement of watching or taking part in a whaleboat race of the 1880s, or even simply to reminisce childhood days of swimming and catching fish in the river.

Imagining a future where communities can once again swim in the Whau River, fish from its banks and walk along its edge is the vision of the many community groups, councillors and local board members who have united to form the Whau Coastal Walkway Environmental Trust.[863] Their one desire is to bring a focus back into the "neglected" area.[864] Steering group co-chairperson Iris Donoghue has stated the infrastructure will be an asset to the area for future generations. "It will be great for our grandchildren."[865]

PRESERVING RESOURCES:

Members of the Whau Coastal Walkway steering group in New Lynn's Olympic Park, where the boardwalk will start.

Photo and caption source: Monica Tischler, Big Plans for Boardwalk, *Western Leader,* August 7, 2014.

The approximately 15.5km of shared pathway, once complete, will fully link the Manukau Harbour at Green Bay Beach to the Waitemata Harbour at Te Atatu Peninsula along the rivers western edge. The pathway will link 30 reserves, esplanade strips, sports parks, streets and cul-de-sacs, utilising sustainable design and environmental accountability. Where possible, bridges will be

[863] Monica Tischler, Big Plans for Boardwalk, *Western Leader,* August 7, 2014.
[864] Ibid.
[865] Ibid.

constructed that allow access up estuaries for small boats. Spaces for education, break-out areas and learning opportunities will be provided along with interpretive signs, strategically placed at different points along the pathway. These signs will enable brief insights of local heritage. Cultural heritage will also be recognised – celebrating both Maori and European history in the area. More passive recreation, such as fishing and bird watching will make the pathway a popular destination for young and old – for locals and for visitors from further afield.

This aspiring project is a collaboration between Auckland Council, the Whau and Henderson-Massey Local Boards, Auckland Transport, Te Kawerau a Maki, Ngati Whatua Orakei, the Whau Coastal Walkway Environmental Trust and philanthropic trusts such as the Trusts Community Foundation. Environmental groups, including the Whau River Catchment Trust and Eco Matters, are also involved.

These partners embrace engagement with local communities and groups who volunteer to help in the development and restoration works on a regular basis. For example, help with weed removal and planting of native trees and shrubs; regular clean-ups of the water's edge and removal and restoration of areas in order to open up viewing shafts. These works have made steady progress in recent times, entirely due to the tireless efforts of the keen volunteers who attend these periodic events. The project is planned to be staged over 5 – 8 years which will be dependent on funding for the physical works.

Stage 1

Stage One of Te Whau Pathway was completed in 2015, giving walkers and cyclists the beginnings of a great new route between Kelston and New Lynn. Three sections of the pathway, totalling 1.6km, run through Archibald Park in Kelston, and Ken Maunder Park and Olympic Park in New Lynn. The 3-metre-wide pathway, with both timber boardwalk and concrete paths, allows for shared use by cyclists and pedestrians and also provides entry and exit points for kayakers. With easy gradients to navigate, the pathway is also very accessible for wheelchair users and prams.

The opening of the first sections of the pathway was celebrated with a community event held at Archibald Park on 18 October 2015. Local families brought along their bikes, scooters and skateboards. The pathway was officially opened with speeches from Deputy Mayor Penny Hulse, Councillor Ross Clow, Whau Local Board Chair Catherine Farmer, Whau Coastal Walkway Environmental Trust Chair Iris Donoghue, and Cycle Action Auckland representative Phil Robinson. The Deputy Mayor was joined by local children to cut the ribbon.

"The pathway will be used by a great variety of people, and we are delighted that it is fulfilling a need and showing off the beautiful river."

Whau Coastal Walkway Environmental Trust Chair Iris Donoghue

"The pathway showcases some of the river's unique environmental and historical features and we encourage the community to head along to enjoy a walk or cycle."

Whau Local Board Chair Catherine Farmer

"To be able to travel between the Waitemata and Manukau harbours by cycling or walking is an exciting prospect. This project is about giving people more options to be active and to get out of their cars while enjoying the beautiful scenery of the Whau River. I look forward to the completion of the next stage."

Mayor Len Brown

"Te Whau is a special place with a unique history. For too long the Whau has been treated like a rubbish tip - the walkway will make it possible for more of Auckland citizens to appreciate and cherish one of the great natural features of Auckland."

Whau River Catchment Trust Chair Gilbert Brakey

"*The boardwalk's purpose is to encourage communities to take pride in their environment and appreciate the water – not just treat it like a "rubbish tip".*

Portage and Licencing Trust president and Whau Councillor Ross Clow

Quotes extracted from Te Whau Pathway website at www.tewhaupathway.org.nz**.**

Councillor Ross Clow, Mayor Len Brown, Whau Coastal Walkway Environmental Trust Chair Iris Donoghue and Whau Local Board Chair Catherine Farmer return a sod to the ground at Olympic Park to mark the completion of construction of Stage One of the pathway.

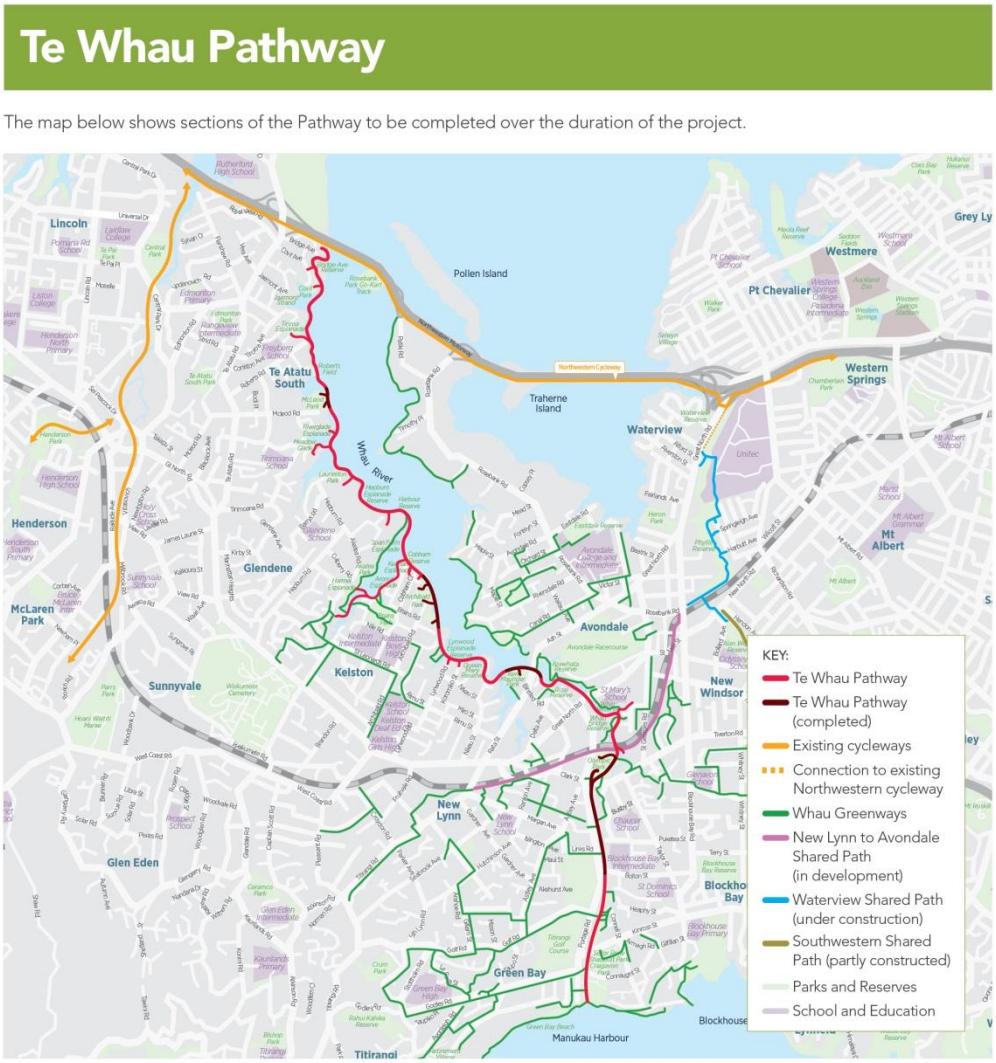
Te Whau Pathway will provide an aesthetically pleasing panorama to be admired by many. On completion, it will feature strategically placed seating, viewing and rest areas, artwork and links to residential cul-de-sacs. It will bring real benefits to communities along the Whau River such as improving connectivity (especially with schools) and social cohesion, as well as providing health enhancing recreational opportunities.[866]

Some of the people behind Te Whau Pathway project. In this photo, standing from left to right: Peter Chan (Henderson-Massey Local Board and Whau Coastal Walkway Environmental Trust), Ross Clow (Councillor, Whau Ward), Andreas Lilley (Auckland Council Parks), Catherine Farmer (Chair, Whau Local Board), Helen Biffin (Auckland Council Parks), Kyle Kaliniak (Stellar Projects), Iris Donoghue (Chair, Whau Coastal Walkway Environmental Trust), Penny Hulse (Deputy Mayor), David Nelson (Auckland Transport), Earl Barretto (Auckland Transport), Katharine Black (Auckland Council Parks), David Kenkel (Whau Coastal Walkway Environmental Trust), Emily Harris (EcoMatters Environment Trust), Grant Jennings (Auckland Council Parks). Seated at front: Sharon Davies (EcoMatters Environment Trust), Bob Mohammed (Auckland Council Parks).

Missing from the photo: Gilbert Brakey (Whau Coastal Walkway Environmental Trust), Tony Miguel (Whau Coastal Walkway Environmental Trust), Derek Battersby (Whau Local Board and Whau Coastal Walkway Environmental Trust), Tim Livingstone (Whau Coastal Walkway Environmental Trust), Greg Presland (Whau Coastal Walkway Environmental Trust), Ian Lamont (Auckland Council Parks), Wolfgang Kanz (Auckland Council Stormwater), Eruera Wilton (Ngati Whatua Orakei), Edward Ashby (Te Kawerau a Maki).

[866] Iris Donoghue, *Celebrating the Whau,* at www.tewhaupathway.org.nz/news/media-release/celebrating-the-whau, July 1, 2015.

Map of Te Whau Pathway



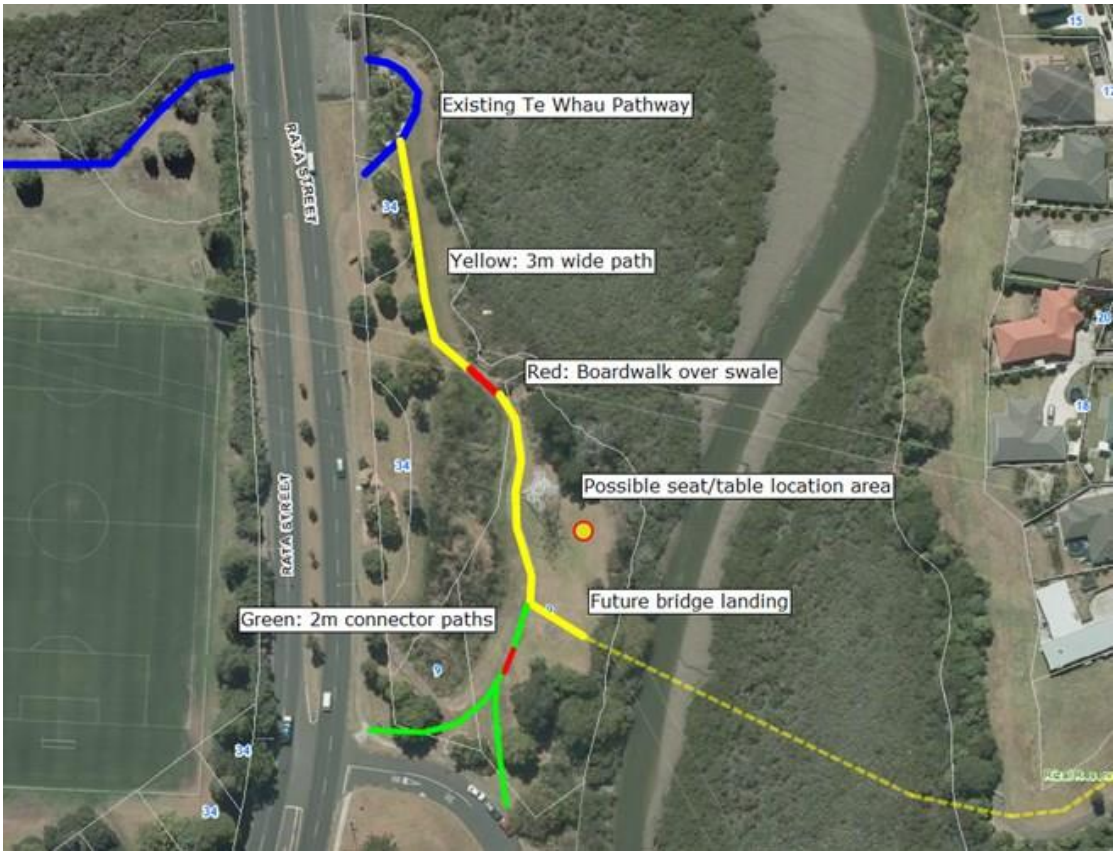
Stage 1A

Stage 1A involved creating additional linkages to the main pathway at McLeod Park, Archibald Park, Ken Maunder Park and Olympic Park. The main section of Te Whau Pathway is three metres wide. The perimeter paths, and connections to nearby streets, linking to the main pathway are two metres wide. The Whau Local Board has funded consultation, design, consenting and project management for Stage 1A. The Whau Coastal Walkway Environmental Trust, with grants from The Trusts Community Foundation, is funding the construction. Whau Local Board Catherine Farmer says, “As each stage of the pathway is constructed, we are able to provide a bit more access to the Whau River, enabling people to enjoy this fantastic local treasure.” Public consultation is an important part of the process therefore the community is provided the opportunity to give feedback on the design of the pathway.

The following diagrams have been sourced from Te Whau Pathway website.[867]

Archibald Park: Existing Te Whau Pathway and new connector paths to be constructed.

[867] Te Whau Pathway website: Sourced online at www.tewhaupathway.org.nz/project/timeline/stage-1a.



Ken Maunder Park: Existing Te Whau Pathway and new connector paths to be constructed.

Ken Maunder Park: Existing Te Whau Pathway and new perimeter path to be constructed.

McLeod Park: Existing pathways and new paths to be constructed.

Olympic Park: Existing Te Whau Pathway and new connector path to be constructed.

Stage 1B will involve creating the main pathway at Queen Mary Reserve, Rizel Reserve, Roberts Field and Tiroroa Esplanade. It is hoped to be completed by June 2018, although progress will depend on the weather. Further stages of the pathway will be completed as funding becomes available.[868]

[868] Ibid.

Chapter Nine

Flora and Fauna of Te Whau

The Whau River begins where the Avondale Stream and Whau Stream meet up. In fact, all of the smaller streams in the Whau catchment eventually join up with the Whau – they are the beginning of the river. Some streams are unassumingly piped underground. Like blood vessels pumping blood to the heart to keep it alive, these smaller streams with their riparian verges greatly influence the life of the Whau. It is crucial for the water quality to remain high so that the river can flourish and in turn provide a good habitat and feeding grounds for the many fish, birds, shellfish, and other wildlife that rely on it for survival.

Although many plants and animals living in the Whau have adapted to the changing environment of the river, the pressures from land and sea are increasing. Over the course of nearly two centuries, the estuary verges have been progressively filled in or drained for farms, factories and housing. These activities have increased sedimentation and exposed the soil to rain, thus increasing the amount of water and sediment going into the river and its tributary streams. Other changes in land use have also resulted in higher nutrient levels which smother plants and animals living in the estuarial area. Extra sediment and nutrients have ultimately made the water murky – which is a big problem for plants that need a lot of light and for animals that need to 'breathe' the water. Weeds also smother native plants and animals in the Whau estuary. If the Whau is to be rejuvenated, some critical questions are required to be answered first. What flora and fauna live in and around the Whau? Are they producing good or bad results for the river? What must be done to provide conservationists with the best way forward?

These questions have been answered to some extent. In March 1999 for example, a group of landscape ecologists led by Mary Gardner completed the first holistic assessment of the health of Avondale Stream, in the Whau River Catchment.[869] The study confirmed the need to seriously address sustainability issues in the area, and prevent the Whau River from slipping into an irrecoverable state of pollution and degradation. Throughout the course of the study the authors compiled a vegetation list for the Avondale Stream and Whau estuary. The list has been recompiled here – listing first the native flora with general descriptive narratives (sourced from www.terrain.net.nz with some citations added), [870] followed by a list of names of introduced trees and shrubs.

[869] M Gardner, M Varaine and T Atkinson 'The Avondale Stream/Wai Tahurangi Today: An ecological assessment' A paper for Project Whau (a joint venture of Waitakere City Council, Auckland City Council, Auckland Regional Council, Avondale Community Board, New Lynn Community Board) March 1999.
[870] T.E.R.R.A.I.N Taranaki Educational Resource: Research Analysis and Information Network at www. Terrain.net.nz).

Flora of Te Whau

Native Flora

Five finger, whauwhaupaku (*Pseudopanax arboreus*) – The whauwhaupaku or five finger is one of the most common native trees found in lowland forests throughout New Zealand. It grows into a small stout tree up to 8 metres high and grows well in most soils and situations. It has glossy, five to seven fingered leaves along with quick and luxuriant growth. It produces small purplish black berries in autumn. The leaves are a favourite food of the possum, the main forest pest of New Zealand.

Haloragis (*Haloragis erecta*) – Haloragis is a plant herb species that is endemic to New Zealand - the Kermadec, North, South, Stewart and Chatham Islands. It is found up to an altitude of 500 metres and grows on the edges or forest clearings, on cliffs, banks, roadsides, gardens and wasteland within urban areas. It has coarsely toothed leaves up to 3 cm long. Stems are square and reddish in colour. The red or pink flowers are insignificant and appear throughout the year. Haloragis is often confused as a weed.

Hangehange (*Geniostoma ligustrifolium*) – Hangehange is a bushy shrub up to 4 metres in height with slender brittle branches found mainly in lowland and coastal forests from the North Island to Marlborough. It has tiny greenish white perfumed flowers in spring. Each flower has five, 3 mm long sepals that alternate with five petals that are joined into a 6 mm long green-to-white tube with spreading, hairy lobes. Five short stamens surround a single ovary. The black fruit that develops in late summer comprise a 4-6 mm diameter dry capsule which splits into valves. When the seed capsule opens it reveals seeds that are held within an enlarged pulpy placenta exposing only their dark tips. The leaves of the hangehange were traditionally used by Maori to wrap around food steamed in the hangi, to add flavour. Its sap was applied to the skin and the bark was used to stop itching.[871]

Kahikatea, white pine (*Dacrycarpus dacrydioides*) – The Kahikatea tree is a coniferous tree endemic to New Zealand. Until recently, the tree was more likely to be referred to as 'white pine' even though it is not a pine tree. It is the oldest member of the ancient Podocarp family and has been around for more than 160 million years. The tree grows to a height of 55 metres with a trunk exceeding one metre in diameter. It can live to over 500 years old. It is dominant in lowland forest and wetlands throughout the North and South Islands. The tree produces scaly cones which swell at maturity into an orange to red fleshy aril with a single apical seed. The seeds are dispersed by birds which eat the fleshy scale and pass the seeds in their droppings. For Maori, the kahikatea had many uses. The fleshy aril or koroi was an important food resource and was served at feasts in great amounts. Waka were also constructed from the wood and soot obtained from burning the heartwood supplied a pigment for traditional tattooing (ta moko). The wood was also favoured for making bird spears.

[871] T.E.R.R.A.I.N Taranaki Educational Resource: Research Analysis and Information Network at www. Terrain.net.nz). Cited from Richard Taylor, *A Leaf from the Natural History of New Zealand* (2nd ed) (New Zealander Office, Auckland, 1870).

Kanuka, tea-tree (*Kunzea ericoides*) – The kanuka tree is found throughout New Zealand and varies in size from a shrub to a tree 10 m or more in height. Its bark is light brown and thicker than the more common manuka (*Leptospermum scoparium*). The wood is white with small needle-like leaves. Kanuka flowers are small and white and tend to grow in bunches, and the small seed capsules are shed within the year. The alternative name 'tea-tree' comes from the early bushmen who used kanuka leaves to brew a drink like tea – but not so flavourful. The tree had a vast range of medicinal uses. The leaves, brewed in water, helped urinary complaints and reduced fevers. The Maori and early settlers used to chew young shoots or swallow a drink made from seed capsules as a cure for dysentery and diarrhoea. The liquid from boiling the bark was used to treat constipation, as a sedative to promote sleep and reduce fever, for bathing sore eyes, treating colic, inflamed breasts, and scalds and burns. The white gum was applied to scalds and burns and was taken by adults and children to relieve coughing. The tough wood was used by Maori for implements such as fern root beater, mauls, paddles, weapons, spade blades, weeders, digging sticks and bird spears. The timber was noted for its straight grain, durability and strength by early European settlers, and was in demand for wheel-spokes and tool handles.

Kapuka, broadleaf (planted) (*Griselinia littoralis*) – The kapuka is a native evergreen tree found throughout New Zealand in forests from sea level to 1000 m. It is a dense bushy tree with deep green oval leaves. It grows up to 20 m tall, though often much smaller, particularly in coastal areas. It produces male and female flowers on separate trees. The fruit is a small blackish berry and in times of food shortages was eaten, despite its bitter taste. Its traditional Maori use was as a medicine. The inner bark was used on scrofula (a tuberculous infection of the skin on the neck) and to treat venereal disease.

Karaka *(Corynocarpus laevigatus)* – The karaka tree (broadleaf) is a tree endemic to New Zealand and the Kermadec and Chatham Islands. It grows to a height of 30 - 40 feet high and fits into the general level of the low canopy of coastal forest. It sometimes occurs sparsely further inland in lowland forest. It has bold, glossy leaves and produces masses of large orange fruits in autumn. The leaves grow up to 20 cm long and are generally elliptic in shape.
Berries are 2.5-3.8 cm long and oval with a pulpy exterior and a harder internal seed. The seed contains an alkaloid, "karakine", that is highly poisonous. Even so, the berries were a valued source of food for Maori people. They discovered that they could make karaka berries safe for eating by first baking them, and then soaking them in water.

Karamu (*Coprosma robusta)* – Coprosmas are identified by the domatia (tiny holes at the junction of the veins on the underside of the leaf), their stipules, small flowers and colourful berries. Coprosma robusta is found in lowland forest or shrub throughout New Zealand. It has dark green leaves approximately 5-13cm long and 3-4 cm wide. The main vein is raised on the under surface. The tree itself is either a shrub or small tree that can grow up to 6m tall. The stipules have a single, shiny black gland at the tips. The karamu produces many orange berries in late summer which grow to 8-9mm long and can take up to a year to ripen.

Karo (*Pittosporum crassifolium*) – Karo is a small native tree or shrub that occurs in lowland and coastal forests. Mature trees grow to approximately 5 metres in height. It has dense

dark grey-green leathery leaves that are furry underneath. Clusters of small red-purple flowers appear in spring, developing into seed pods that split to expose the sticky seeds which are easily spread by birds.

Kawakawa (*Macropiper excelsum*) – Kawakawa is a small, densely branched, aromatic tree with large heart shaped fleshy leaves growing up to 5 metres. It has tiny flowers which are on upright catkin-like spikes and occur on separate male & female plants. The fruit which are only on female trees (2 to 5 cm) long are a whole lot of little fruit clustered on a central stem, green at first but changing to orange when ripe. The seed in the soft, orange spikes that are a favoured food of many birds in late summer and are dispersed by them. The root, fruit, seeds and especially the leaves of the Kawakawa plant were favourite medicinal remedies of the New Zealand Maori. Externally, kawakawa was used to heal cuts and wounds, as an ingredient in vapour baths, and as an insect repellent. Internally, it was found to be effective as a blood purifier in cases of eczema, boils, cuts, wounds, rheumatism, neuralgia, ringworm, itching sore feet, and all forms of kidney and skin ailments. The leaves were chewed to alleviate toothache. The bruised leaves drew pus from boils and skin infections. A drink made from the leaves helped stomach problems and rheumatics when rubbed on joints. The leaf, if dried and burnt is an insect repellent. It is one of the only plants still used by Maori people today. The name Kawakawa in Maori refers to the bitter taste of the leaves.

Kohuhu (variegated – planted) (*Pittosporum tenuifolium*) – Kohuhu is a small native evergreen tree (up to 10 metres) with wavy silvery green, glossy leaves. The flowers generally go unnoticed because of their colour – a dark reddish-purple - which are only scented at night. The Kohuhu is found growing wild in coastal and lower mountain forest areas up to an altitude of 900 metres. It hybridises easily, resulting in plants with very variable foliage. It provides food for native birds with nectar availability during October through to January. It fruits/seeds from February through to June and is attractive to bees.

Lacebark (*Hoheria spp*) – The lacebark shrub/small tree is found naturally in lowland forests found in the north and west of the North Island, Three Kings Island, Great Barrier Island, and on the Kermadec Islands. It has evergreen oval pointed leaves with serrated edges up to 12 cm in length. It develops multiple white scented flowers in late summer/autumn. The bark was used by early Maori, and early European settlers as a source of fibre, particularly used as cordage. The timber was used for furniture-making.

Mahoe, Whitey wood (*Melicytus ramiflorus*) – Mahoe is ubiquitous throughout lower altitude New Zealand forests and is often seen in areas of regenerating forest. It grows up to 10 metres high with a trunk up to 60 cm in diameter. It has smooth, whitish bark and brittle twigs. The dark green leaves are 5-15 cm long and 3-5 cm wide and their edges are finely serrated. The small yellowish flowers with a pleasant fragrance occur in fascicles, growing straight out from naked twigs. The berries are a striking violet colour when ripe and are spherical in shape (3-4mm). The tree flowers in late spring and summer while the berries appear in summer and autumn. The berries are eaten by many native birds, including

Kereru, Tui and geckos. The Mahoe is insect pollinated with midges, gnats, hover flies, butterflies, bees and ants. Mahoe was one of the two woods Maori used to create fire through friction. Mahoe was the lower stick - kauahi – generally 14 to 18 inches long, 2 or 3 inches wide, and 1 to 2 inches thick. As this was very soft wood, the stick could be used on both sides. The other piece of wood used – te hika - was made from the very hard compact and durable kaikomako.

Manawa, mangrove (*Avicennia marina subspecies australasica)* – Manawa is New Zealand's only species of mangrove and it is indigenous. It is a small yellowish-green tree or shrub of intertidal zones forming dense groves on coastal mudflats in the upper North Island. The leaves are leathery, tapering to a pointed tip and are a pale brown underneath. It has inconspicuous flowers which develop into large, yellowish, leathery fruit. These mangrove propagules (baby mangrove plantlets) fall from the tree and float on the tide until washed ashore where they will then germinate. Mangrove live in a salt water environment and exclude salt by having significantly impermeable roots which are highly suberized, acting as an ultra-filtration mechanism to exclude sodium salts from the rest of the plant. Mangroves provide an important habitat and nursery area for juvenile fish and crustaceans. The leaves, fruit and twigs that drop into the water are a source of food. The roots, pneumatophores (breathing roots) and overhanging branches provide shelter and protection from predators. Mangrove swamps protect coastal areas from erosion, storm surge and even tsunamis. The mangroves' massive root systems are efficient at dissipating wave energy. Likewise, they slow down tidal water enough so its sediment is deposited as the tide comes in, leaving all except fine particles when the tide ebbs. In this way, mangroves build their own environments. Because of the uniqueness of mangrove ecosystems and the protection against erosion they provide, they are often the object of conservation programs.

Mapou (*Myrsine australis*) – Mapou is an endemic shrub and found throughout the country and offshore islands. It has crinkly-edged leaves and reddish bark and stems. The bark on a mature trunk is grey. Growing to around 6 metres in height, it inhabits bush margins. Mapou produce very small black fruit in summer (popular with birds) these grow directly on the stem of the plant, not at the end of branches and twigs. Maori boiled mapou leaves to make an infusion (tea) for toothache. The leaves were also used as relief for arthritic problems, as a remedy for skin disease, intestinal worms and as a general tonic. The branch wood was used for digging sticks and adze handle sockets.

Mingimingi (*Leucopogon fasciculatus*) – Mingimingi is an open-branched, spreading shrub or small tree up to 5-6 metres tall, varying in habit according to exposure. It grows in coastal to lower montane shrubland, light forest and in rocky places up to 1150 metres from the Three Kings Islands to Canterbury. The trunk has flaky bark that peels off in thin strips. The leaves are thin and narrow with a sharp point and are arranged in bundles on slender black stems. It has small creamy greenish flowers with many tiny hairs on the petals in drooping racemes of 6 to 12 flowers in spring. They have a sweet fragrance. The small mostly red oblong berries (2-4mm long) occur in autumn, with one seed per berry.

Porokaiwhiri, Pigeonwood (*Hedycarya arborea*) – Porokaiwhiri is a small upright fragrant tree that grows to a maximum height of 12 metres and is common on forest margins. It has ascending branches with a trunk of smooth bark up to 50cm in diameter. The leaves are bright green and are thick and leathery with saw toothed margins and distinct veins. The leaves range from 5-12cm x 2.5-5cm with a shiny upper surface and dull underside. For most of the year it is a dull-looking plant, with dark grey twigs and leathery leaves. In spring, however, it has green-tinged, hairy, fleshy flowers and in summer it is brimming with bright orange berries grouped on radiating stalks. Male and female flowers appear on separate plants. The male flowers are sweet-smelling and short-lived. The female flowers are 6mm across and the male flowers are 10mm across. The fruit are a favourite of wood pigeons and possums.

Puriri (*Vitex lucens*) – Puriri is one of the few native trees with large colourful flowers. The tubular flowers of the puriri are like snapdragon flowers and can range from fluorescent pink to dark red, rose pink (most common) or sometimes even to a white flower with a yellow or pink blush. The bright colour, the tube shape, copious nectar production and the hairs at the base of the flower tube all point towards birds pollinating this flower (the hairs stop insects from taking the nectar). Maori traditionally infused the leaves from the puriri as they contained a powerful germicide which aided ulcers and sore throats. The puriri leaves were also boiled and used for bathing sprains and backache while the bark was a source of dye.

Tarata, lemonwood (*Pittosporum eugenoides*) – The tarata tree naturally occurs throughout New Zealand from sea level to 600 metres. It has a conical shape that broadens and spreads with age to 20 metres in height. The trunk of 60 cm is encased in bark. The small yellow flowers which appear from October to December grow in terminal clusters and have a pleasant smell. The leaves are yellow green with undulating margins and a lemon scent can be smelt if crushed. The Maori used the gum from the bark in complex scent formula with parts of other plants.

Totara (*Podocarpus totara*) – Totara is a conifer reaching 30 metres high and has a diameter of up to 2.5 metres. It has a wide distribution in lowland to montane forests of the North, South, and Stewart Islands. It has thick, stringy bark and its leaves are a very dark green-brownish colour, linear and sharp pointed. The totara is a podocarp with separate sexes. The male tree has pollen cones, which develop in October at the ends of the old stems and are in groups of 1 to 3. New cones are green, but turn brown as they open and release pollen. New leaves, with a lighter green colour develop from the tips of the stems, just beyond the cones. The female fruit is a rounded green seed (4-5mm) which sits on a red smooth succulent receptacle. Maori prized the totara tree more highly than any other because of the remarkable qualities of its timber. The heartwood is very durable and Maori found the wood could be readily split and shaped with primitive stone tools for canoes, building, and carving. The same properties made it a valuable timber to the first European settlers for house and wharf piles, house frames and for durable things such as fence posts, bridges and railway sleepers.

Twiggy coprosma (*Coprosma rhamnoides)* – Twiggy coprosma is mostly an understory plant. It has stiff interlaced reddish-brown barked branches and branchlets which have fine hairs on them. Some plants even have brown or grey new growth, giving a dead like appearance. It has been suggested that this may have been a defensive growth mechanism to deter visits from browsing moa. The leaves can be variously shaped from narrow to almost round, typically on the same bush but occasionally some plants have all the same shaped leaves. In October, the plants develop small pale cream flowers. These flowers are wind pollinated. Drupes appear on the female plant in March-April - small (3-4mm) red berries, turning dark red or black as they ripen.

Introduced Trees and Shrubs

Acacia	*Acacia sp*
Australian gum	*Eucalyptus spp*
Black wattle	*Acacia mearnsii*
Boneseed	*Chrysanthemoides monilifera*
Brush wattle	*Paraserianthes Iophantha*
Chinese tree privet	*Ligustrum sinense*
Common alder	*Aluns glutinosa*
Cotoneaster	*Cotoneaster spp*
Crack willow	*Salix fragilis*
Douglas fir	*Pseudotsuga menziesli*
Elaeagnus	*Elaeagnus x reflexa*
Flowering cherry	*Prunus sp*
Gorse	*Ulex europaeus*
Green cestrum	*Cestrum parqui*
Himalayan honeysuckle	*Leycesteria Formosa*
Japanese cedar	*Cryptomeria japonica*
Japanese spindle tree	*Euonymus japonicus*
Liquidambar, sweet gum	*Liquidambar styraciflua*
Loquat	*Eribotrya japonica*
Macrocarpa	*Cypressus macrocarpa*
Monkey apple	*Acmena smithii*
Norfolk Island pine	*Araucaria heterophylia*
Oak	*Quercus spp*
Oleander	*Nerium oleander*
Other than radiata	*Pinus sp*
Poplar	*Populus sp*
Pussy willow	*Salix x reichardtii*
Radiata pine, Monterey pine	*Pinus radiata*
Sheoke	*Casuarina sp*
‘Tortosa’ – twisted willow	*Salix matsudana*
Velvet groundsel	*Senecio petasitis*
Weeping willow	*Salix babylonica*
Woolly nightshade	*Solanum mauritianum*

Climbers and Scramblers

Banana passion fruit	*Passiflora mollissima*

Blackberry, bramble	*Rubus fructicosus*
Bush lawyer (native)	*Rubus cissoides*
Clematis sp. (native)	
Climbing asparagus	*Asparagus scandens*
German ivy	*Senecio mikanioides*
Honeysuckle	*Lonicera japonica*
Jasmine	*Jasminum polyanthum*
Nasturtium	*Tropaeolum majus*
Pink-flowered bindweed	*Calystegia sepium*
Rambling/climbing rose	*Rose sp*
White-flowered bindweed, convolvulus	*Calystegia sylvatica*

Herbs

Alligator weed	*Alternanthera philoxeroides*
Black nightshade	*Solanum nigrum*
Broad-leaved dock	*Rumex obtusifolius*
Broad-leaved plantain	*Plantago major*
Climbing dock	*Rumex sagittatus*
Creeping buttercup	*Ranunculus repens*
Fat-hen	*Chenopodium album*
Fennel	*Foeniculum vulgare*
Hemlock	*Conium maculatum*
Inkweed	*Phytolacca octandra*
Lotus major, birdsfoot trefoil	*Lotus pedunculatus*
Mistflower	*Ageratina riparia*
Oxeye daisy	*Leucanthemum vulgare*
Oxtongue	*Picris echioides*
Plectranthus	*Plectranthus ciliatus*
Purple top	*Verbena bonariensis*
Scarlet pimpernel	*Anagallis arvensis*
Scotch thistle	*Cirsium vulgare*
Self-heal	*Prunella vulgaris*
Wild carrot	*Daucus carota*
Willow weed	*Polygonum sp.* (an unnamed species, according to Esler, pers. comm.)
Yellow flowered weed	*Senecio bipinnatisectus*

Monocots – Introduced

Agapanthus	*Agapanthus orientalis*
Arum lilly	*Zantedeschia aethiopica*
Bamboo	*Phyllostachyos spp.*
Banana palm	*Musa spp.*
Elephants ear	*Alocasia macrorrhizos*
'hopeless menace' grass'	*Oplis menus* – (named by A.E. Esler's children)
Kikuyu grass	*Pennisetum clandestinum*
Montbretia	*Crocosmia x crocosmiiflora*
Palm grass	*Setaria palmifolia*

Pampas grass	*Cortaderia spp.*
Umbrella sedge	*Cyperus eragrostis*
Wild ginger	*Hedychium spp.*
Wandering Jew	*Tradescantia fluminensis*

Monocots – Native

Blueberry	*Dianella nigra*
Bulrush, raupo	*Typha orientalis* (native)
Cabbage tree, ti kouka	*Cordyline australis*
	Carex sp.?
Glossy-leaved sedge	*Lepidosperma laterale* (native)
Hook grass	*Uncinia sp*.
Lowland flax, harakeke	*Phormium tenax*
Marsh clubrush / kukuraho	*Bolboschoenus fluviatilis*
Nikau palm	*Rhopalostylis sapida*

Ferns

	Asplenium oblongifolium, Asplenium flaccidum (native)
Blechnum	*Blechnum procerum* (native)
Bracken, rahurahu	*Pteridium esculentum* (native)
Mamaku, black tree fern	*Cyathea medullaris* (native)
Silver fern, ponga (native)	*Cyathea dealbata*
Wheki	*Dicksonia squarrosa?* (native)

Bryophytes

	Lycopodium deuterodensum (native)
African club moss	*Selaginella kraussiana*

Water Plants

Oxygen weed	*Lagarosiphon or Egeria sp?*
	Potamogeton spp.?
Swamp lily	*Ottelia ovalifolia?*
Watercress	*Rorippa nasturtium-aquaticum*

Marine Species of Te Whau

There is a variety of marine species living on or near the Whau River. For example, there are several species of large fish which live in the streams and main Whau waterway, including kokopu, common bullies, eels and inanga. There is also a large range of invertebrates comprising of various insects, crustaceans, snails and worms. Mud crabs, flounder, kahawai, parore, snapper and sprats are among the smaller fish and sea creatures that dwell in the mudflats in tidal areas. This next section provides further information on some of these species.

Large Fish

Kokopu

Kokopu is the Maori name for the three species of fish of the genus *Galaxias* and endemic to New Zealand. As its name implies, the giant kokopu is the largest member of the Galaxiidae family. They have been reported to reach up to 450 mm in size, but are usually in the 200-300 mm range. The larger fish have a profusion of distinctive golden spots and other shapes on their bodies, although smaller specimens may be difficult to distinguish from banded kokopu. Giant kokopu are primarily a coastal species and do not usually penetrate too far inland. They prefer the slow flowing waters that occur in lowland runs and pools. They are also usually associated with some form of instream cover like overhanging vegetation, undercut banks, logs, or debris clusters. Their prey ranges from koura to terrestrial insects such as spiders and cicadas.[872]

The banded kokopu occurs in the whitebait runs that enter New Zealand's rivers each spring. Banded kokopu are generally the smallest of the species when they are whitebait and have an overall golden colour. Adult banded kokopu can be distinguished from the other galaxiid species by the presence of the thin, pale, vertical bands along the sides and over the back of the fish. These bands develop early, but similar bands also appear on juvenile giant kokopu, making it easy to confuse young fish of these species. They commonly grow to over 200 mm. Adult banded kokopu usually live in the pools of very small tributaries where there is virtually a complete overhead canopy of vegetation of native bush or under exotic pine plantations – so long as overhead shade is present. They depend on terrestrial insects for a large proportion of their diet and can detect the small ripples made by moths and flies that become stuck on the water surface of the pool.[873]

The shortjaw kokopu has an undercut jaw, with the lower jaw being shorter than the upper jaw. It has a distinctive dark blotch on each side just behind the gills. Otherwise, the fish is essentially brownish with faint bands and blotches. Although the shortjaw kokopu penetrate well inland in many catchments, it appears to be restricted to streams with native forest vegetation. Although it is widespread, it is probably the rarest of the whitebait galaxiids as it is unusual to capture more than a few fish at a given site. It is usually found in streams with large boulders in pools and is difficult to catch. Because this fish has been so rarely encountered, little is known about its life history. In 2009, the first landlocked population was discovered in an Auckland reservoir.[874]

Common bullies

Common bullies are found everywhere in New Zealand. Sea-going populations occur in rivers and streams near the coast and land-locked populations have become established in many of New Zealand's lakes where they are an important prey species for trout and eels. In rivers, they mainly inhabit still or slow-flowing waters. In lakes, the larvae are planktonic and

[872] NIWA *Taihoro Nukurangi* website. Sourced online at https://www.niwa.co.nz/freshwater-and-estuaries/nzffd/NIWA-fish-atlas/fish-species/giant_kokopu.
[873] NIWA *Taihoro Nukurangi* website. Sourced online at https://www.niwa.co.nz/freshwater-and-estuaries/nzffd/NIWA-fish-atlas/fish-species/banded_kokopu.
[874] NIWA *Taihoro Nukurangi* website. Sourced online at https://www.niwa.co.nz/freshwater-and-estuaries/nzffd/NIWA-fish-atlas/fish-species/shortjaw_kokopu.

feed on zooplankton. Eggs are laid on the undersides of hard substrates (wood, rock) in both lakes and rivers and the egg patches are guarded by a male.[875]

Eels (Maori word – Tuna)

The ancestors of modern New Zealand eels (like *Anguilla dieffenbachia*) had been swimming up and down New Zealand waterways since at least the early Miocene (23 million years ago). Now New Zealand is home to two types of eel – the shortfin (*Anguilla australis*) and the longfin (*Anguilla dieffenbachii*). Although they are similar in appearance, the longfin's skin forms big, loose, obvious wrinkles when bent, whereas a shortfin's skin wrinkles are much smaller. They migrate up streams as elvers to find suitable adult habitat. After many years (15-30 years for shortfins, 25 years for longfins, and sometimes up to 80 years) they migrate 5000 km to the tropical Pacific Ocean to breed. When they reach their destination, the females lay millions of eggs that are fertilised by the male. The adults die after spawning. The larvae (leptocephalus) are transparent, flat and leaf-shaped. The larvae reach New Zealand by drifting on ocean currents. Before entering fresh water, the larvae change into a more familiar eel shape, although they remain transparent for up to a week after leaving the sea. These tiny 'glass' eels enter fresh water between July and November each year, often in very large numbers.[876]

The longfin eel is one of the largest eels in the world and it is found only in the rivers and lakes of New Zealand. Longfins are ranked, 'At risk, declining' in the New Zealand Threat Classification System listings (2009). There are fewer eels today because of the loss of wetlands and historical commercial fishing practices. Longfin eels, as well as being rare, are less able to cope with changes to their environment than their shorter-finned relative. They are heavily impacted by human activities such as pollution, the building of dams, loss of vegetation near their habitat, drainage and irrigation schemes and river diversions, and overfishing. They are secretive, mostly nocturnal and they prefer habitats with plenty of cover.[877]

When eels begin life, they are a tiny one millimetre in length and they can grow up to two metres long. Compared with many other fish, eels are slow-growing. A longfin, for example, may grow only between 15-25 mm a year. However, they can also live for up to 60 years of age. The biggest eels are usually old females that have been slow to reach sexual maturity and have not migrated to sea to breed. The biggest longfin eels reported have weighed as much as 40 kg – but most weigh up to 10 kg. They are elongated, slender-bodied fishes, almost tubular. When they are small, they have relatively smooth heads but as they grow the head becomes bulbous, with a prominent muscular dome behind the eyes. They change shape again when they get ready to migrate to their breeding grounds. The head becomes

[875] NIWA *Taihoro Nukurangi* website. Sourced online at https://www.niwa.co.nz/freshwater-and-estuaries/nzffd/NIWA-fish-atlas/fish-species/common_bully.
[876] Department of Conservation *Te Papa Atawhai* website. Sourced online at http://www.doc.govt.nz/nature/native-animals/freshwater-fish/eels/.
[877] Ibid.

much slenderer and tapered, almost bullet-like and the eyes enlarge to up to twice their normal size.[878]

Like all fish, eels have scales and fins. The longfin eel is so named because its top (dorsal) fin is longer than its bottom fin. While they have the appearance of being scaleless, tiny scales are embedded deeply within their thick, leathery skin. The eel's skin is very sensitive to touch. This helps it to "see" in its watery environment. Longfins are usually dark brown to grey black. Very occasionally, longfin eels found in the wild are partially or even wholly bright yellow in colour. Eels eat "live" food. Small longfin eels living amongst the river gravels will feed on insect larvae, worms and water snails. When they get bigger, they begin to feed on fish. They will also eat fresh-water crayfish and even small birds like ducklings. Eels hunt by smell rather than sight. Longfin eels have a well-developed sense of smell. They have tube nostrils that protrude from the front of their head, above their upper lip. They also have a very large mouth with rows of small, sharp, white teeth. The top teeth form an arrow shape on the roof of the eel's mouth.[879]

Inanga

Five separate galaxiid species make up the whitebait catch - inanga, banded kokopu, koaro, shortjaw kokopu, and giant kokopu. Inanga are one of the most widespread galaxiids. They occur throughout New Zealand and its offshore islands, as well as in South America and Australia. In most river systems, the inanga makes up the majority of the whitebait catches, thus this fish is probably encountered more often than other members of the Galaxiidae family. Adult inanga are the smallest of the five whitebait species, rarely exceeding 110 mm in length. Their silvery belly and forked tail make them easily distinguishable from the other galaxiids. Inanga inhabit open rivers, streams, lakes and swamps near the coast and can often be seen shoaling in open water. They are very poor climbers however, and do not travel any distance inland unless the river gradient is very gradual.[880]

Historically, their numbers have been greatly reduced by swamp and wetland drainage. Introduced fish such as trout and gambusia are also thought to have reduced Inanga numbers. However, a reduction in spawning habitat is thought to be the major limiting factor. Inanga spawn on river and stream banks among vegetation inundated by spring high tides. The eggs remain above the water level until the next spring tide when they hatch and are washed out to sea. Modification of the tidally affected regions of stream and river banks by browsing cattle and flood control works have destroyed much spawning habitat. Because they cannot climb small falls, inanga are restricted to the lower reaches of rivers and stream and their access to good habitat can be significantly reduced by poorly designed culverts.[881]

[878] Ibid.
[879] Ibid.
[880] NIWA *Taihoro Nukurangi* website. Sourced online at https://www.niwa.co.nz/freshwater-and-estuaries/nzffd/NIWA-fish-atlas/fish-species/inanga.
[881] Ibid.

Freshwater Invertebrates

Freshwater invertebrates (insects, crustaceans, snails, and worms) are a useful measure of the state of our streams – but the identification and interpretation of the range of invertebrates living in any stream can be difficult. There are at least 10 species of large invertebrates living in the freshwater areas of the Whau and these are described below.

Freshwater shrimps

Freshwater shrimps, particularly the widespread Paratya live in coastal and slow-flowing streams and rivers, and they are known to occur in streams with only moderate water quality. The first walking legs lack the large chelipeds (pincers) of crayfish, instead the ends of these legs are covered in tufts of hairs. Unlike crayfish, Paratya can hover in the water by beating paddle-like appendages under their abdomen. The body is almost transparent. They feed by collecting fine organic matter or by shredding plant matter. They also eat invertebrates like chironomid midges. They are constant feeders.[882]

Damselfly larvae

Damselfly larvae (Xanthocnemis) are aquatic and live in slow-flowing waters often amongst weed beds. These insects are predators that catch prey with their extendable jaws. Being larger than most aquatic insects, damselflies are favourite food items for fish. Damselfly larvae can be found in clean and not-so-clean waters and they are quite tolerant of low dissolved oxygen and warm water temperatures.[883]

Freshwater snails

The most common freshwater snail in New Zealand is the pond snail Potamopyrgus. It is very hard to control because it reproduces quickly and the chunky shell makes it of little food value to fish. Potamopyrgus is an important grazer in New Zealand rivers as it can control the amount of green or brown algae on riverbeds. As it can't hang on to the riverbed in fast-flowing waters it is not found in rapid currents or after floods.[884]

The snail Physa is one of the common introduced invertebrates in New Zealand streams. This small

[882] Landcare Research *Manaaki Whenua* website. References and
http://www.landcareresearch.co.nz/resources/identification/ani
legs/crustaceans/shrimps/freshwater-shrimp.
[883] Auckland Council *Te Kaunihera o Tamaki Makaurau* Website (
information on macroinvertebrates sourced online at
http://www.waitakere.govt.nz/abtcit/ei/ecowtr/macroinv/bugsa
[884] Auckland Council *Te Kaunihera o Tamaki Makaurau* Website (
information on macroinvertebrates sourced online at
http://www.waitakere.govt.nz/abtcit/ei/ecowtr/macroinv/bugsadultinfo.asp#physa.

snail is more rounded than the native Potamopyrgus, and the opening (aperture) is on the opposite side of the snail to Potamopyrgus. The shell of Physa is often so thin that you can see right through into the body inside. Physa thrives in streams that are heavily enriched with organic matter. Their numbers can increase rapidly as they mature in only ten weeks. This snail may be found in high abundance with oligochaete worms downstream of treated sewage discharges. Physa grazes the prolific algae and other microscopic life forms attached to the streambed or to plants in such enriched waters.[885]

Isopods

Freshwater paranthurid isopods have elongated bodies, making them look quite unlike the more familiar slater-shaped isopods. Paranthura is easily distinguished from the similar-shaped Cruregens by the presence of eyes (not visible in Cruregens). Paranthura usually has some speckled grey pigmentation, while Cruregens has little or no body pigmentation. Paranthura is usually found in or near estuaries, and may therefore not be a true freshwater species. Related isopods are known to feed on algae and other components of biofilms.[886]

Sphaeromatids are small, fast swimming isopods found in the estuarine reaches of streams and rivers. They are sometimes known as “pillbugs” because of their ability to roll up into a pill-sized ball when threatened. They are shorter and more compact than most other freshwater or estuarine isopods. These are more marine than freshwater species, but they can be found in streams towards the upper limit of tidal influence. Sphaeromatids may feed on a range of estuarine foods including marine and freshwater algae, decomposing plant matter and other invertebrates.[887]

Midge larvae

Midges are members of the "true flies" which have adults with only two wings (most other flying insects have four wings). The larvae of the true flies are generally simple in design, being often worm-like in shape. Orthoclad larvae typically have a green worm-like body with a head that contains the only hard body parts. Midge larvae (juveniles) are among the most widespread and abundant of all freshwater creatures.[888]

---

[885] Ibid.

[886] Landcare Research *Manaaki Whenua* website. References and photograph sourced online at http://www.landcareresearch.co.nz/resources/identification/animals/freshwater-invertebrates/guide/jointed-legs/crustaceans/isopods/estuarine-isopods2.

[887] Landcare Research *Manaaki Whenua* website. References and photograph sourced online at http://www.landcareresearch.co.nz/resources/identification/animals/freshwater-invertebrates/guide/jointed-legs/crustaceans/isopods/estuarine-isopods3.

[888] Auckland Council *Te Kaunihera o Tamaki Makaurau* Website (former Waitakere City Council page). *More information on macroinvertebrates* sourced online at http://www.waitakere.govt.nz/abtcit/ei/ecowtr/macroinv/bugsadultinfo.asp#orthoclad.

Freshwater leeches

Leeches are common in New Zealand, particularly in slow flowing, still or weedy streams. Native New Zealand leeches are small, pale-coloured species that prey on other stream invertebrates but are not likely to attempt to feed on humans. Their bodies are very flexible and they move like caterpillars. Leeches have strong suckers under the body and they can be difficult to remove from stone or plant surfaces. Because leeches are usually found in slow-flowing waters, and these habitats are more likely to have poor water quality, the leeches are often associated with "tolerant" invertebrate species. They do not necessarily indicate poor water quality however, and probably occur in such waters because their food sources (possibly aquatic worms and snails) live in these habitats.[889]

Aquatic true worms and flatworms

Aquatic oligochaetes (segmented worms) can be found in almost all streambeds, particularly where there is abundant organic matter for food. Some oligochaetes are extremely abundant in waters polluted by organic wastes such as treated sewage. Some very small oligochaetes live amongst mats of algae on the streambed. It is often considered to be a sign of poor stream health when oligochaetes are the most abundant invertebrates in a streambed community, especially when there are few or no sensitive insect groups. The presence of a few oligochaetes in a diverse community is not a sign of poor stream health however, because some oligochaetes can live in the most pristine habitats. The large earthworm-like Eiseniella can be found in both high quality and low-quality waters.[890]

Flatworms are among the most common creatures in many streams. The common freshwater species usually have two distinct eyes that have a cross-eyed appearance. Most flatworms are shaped like flat slugs and live on stones and plants, but one species, which lives on the skins (especially claws) of freshwater crayfish, is shaped like a small, round hand complete with fingers. Some flatworms are quite tolerant of poor water quality and they can be among the most common creatures in city streams and enriched farmland streams.[891]

---

[889] Auckland Council *Te Kaunihera o Tamaki Makaurau* Website (former Waitakere City Council page). *More information on macroinvertebrates* sourced online at http://www.waitakere.govt.nz/abtcit/ei/ecowtr/macroinv/bugsadultinfo.asp#glossiphonia.

[890] Auckland Council *Te Kaunihera o Tamaki Makaurau* Website (former Waitakere City Council page). *More information on macroinvertebrates* sourced online at http://www.waitakere.govt.nz/abtcit/ei/ecowtr/macroinv/bugsadultinfo.asp#eiseniella.

[891] Ibid.

Insects

Damselflies

Damselflies (Xanthocnemis) are often seen hovering over streams and ponds. Adult damselflies are similar to small dragonflies, but only damselflies can fold their wings back along their body when they land. They have thin bodies, extendible jaws and three tail gills. They prey on other bugs.[892]

Mosquitos

New Zealand has an unusual and interesting mosquito fauna. All New Zealand mosquitos are in the subfamily Culicinae. In 2004, there were 16 species (in 6 genera) noted. 13 species are native and 12 of these are endemic to New Zealand only. Two of the three introduced species have been in New Zealand a long time, probably arriving with whalers on sailing ships in the 19th century. The third introduced species (*Ochlerotatus camptorhynchus*) arrived about 1998 and was first found in swamp land near Napier. Some species are widespread geographically, while others are found in only parts of the country.[893] The culicids are the well-known mosquitoes with biting adults. Their swimming larvae are distinguished from other true flies by their wide thorax (the widest part of the body) and the presence of a breathing siphon at the end of the abdomen. They use brush-like mouthparts to collect organic matter or to scrape organic slimes from submerged surfaces. Culicid larvae and pupae can be abundant in stagnant fresh water, including ponds, drains, house gutterings or anywhere rain water collects.[894]

Midges

Orthoclads are one of the larger groups of midges in New Zealand. They are often found amongst thick algae growths in streams that have high levels of nutrients (such nutrients may be of natural or unnatural sources). Some can tolerate warm water temperatures and quite low levels of dissolved oxygen. Midges can be the most abundant creatures in streams that are in quite poor condition.[895]

Small Sea Creatures/Fish living on Mudflats in Tidal Areas

Mud crabs

Estuarine mud crabs (*Varunidae: Helice*) are the most common crab found in New Zealand's upper estuaries. They are much more strongly armoured than the freshwater crab

Tamaki Makaurau Website (former Waitakere City Council page). *More* ourced online at t/ei/ecowtr/macroinv/bugsadultinfo.asp#xanthocnemis.

[893] Landcare Research *Manaaki Whenua* website. Sourced online at http://www.landcareresearch.co.nz/science/plants-animals-fungi/animals/invertebrates/invasive-invertebrates/mosquitoes.

[894] Landcare Research *Manaaki Whenua* website. Sourced online at http://www.landcareresearch.co.nz/resources/identification/animals/freshwater-invertebrates/guide/no-jointed-legs2/true-fly-larvae/other/mosquito.

[895] Auckland Council *Te Kaunihera o Tamaki Makaurau* Website (former Waitakere City Council page). *More information on macroinvertebrates* sourced online at http://www.waitakere.govt.nz/abtcit/ei/ecowtr/macroinv/bugsadultinfo.asp#orthoclad.

Amarinus, and the cephalothorax is roughly rectangular (round in Amarinus). The mud crab is more likely to be found in areas of regular tidal salinity than the freshwater crab. It is found in abundance in muddy estuaries, (pristine estuaries as well as estuaries with sediments contaminated by urban runoff) and the tunnels of these crabs can be used as an indication of the extent of saltwater influence into streams and rivers. They are opportunist detritivores, scavengers and predators with the ability to feed on many forms of organic matter settling on mudflats.[896]

Flounder

The yellow belly flounder (*Rhombosolea leporina*) are found in New Zealand harbours, estuaries and muddy bars, particularly in the north. They are a shallow-water fish found at depths of up to 50 metres. They have a dark olive-green body above with yellow or white on the belly and dark spots. The body is oval. Yellow belly flounder are plumper, have smaller eyes and larger, dark-edged scales than sand flounder.[897] In 2000, researcher, Dr Irene Nenadic, embarked on analysis of flounder caught in in the Whau River and Henderson Creek after previously discovering an orange chemical spill in Henderson Creek.[898] The flounder caught by Dr Nenadic and others exhibited markedly high cases of disease - tumours and other abnormalities in the internal organs. This indicated the growths could have been caused by toxic pollution of the waterways from nearby industries or urban runoff.[899] Compared to other specimens caught around the Whangaparaoa Peninsula, the Waitemata flounders had tumours in their livers, kidneys and gills and abnormal red blood cells and eggs in their gonads. Dr Nenadic stated that authorities should take note of the research because of the need to maintain New Zealand's clean and green image.[900]

Kahawai

Kahawai (*Arripis trutta*) are a schooling pelagic species belonging to the family Arripididae. Kahawai are found around the North Island, the South Island, the Kermadec and Chatham Islands. They occur mainly in coastal seas, harbours and estuaries and will enter the brackish water sections of rivers. Kahawai feed mainly on fishes but also on pelagic crustaceans,

[896] Landcare Research *Manaaki Whenua* website. References and photograph sourced online at http://www.landcareresearch.co.nz/resources/identification/animals/freshwater-invertebrates/guide/jointed-legs/crustaceans/crabs/estuarine-mud-crabs.
[897] Wildfish website. Reference and photograph sourced online at http://wildfish.co.nz/portfolio/yellowbelly-flounder/.
[898] Philip English, *New Zealand Herald*, 'Researcher suspects toxin in Waitemata flounder,' Friday, 30 June 2000.
[899] Ibid.
[900] Ibid.

especially krill (Nyctiphanes australis). Kahawai smaller than 100 mm mainly eat copepods. Although kahawai are principally pelagic feeders, they will take food from the seabed.[901]

The spawning habitat of kahawai is unknown but is thought to be associated with the seabed in open water. Juvenile fish (0+ year class) can be found in shallow water over eelgrass meadows (Zostera spp.) and in estuaries. Kahawai grow rapidly, attaining a length of around 15 cm at the end of their first year, and maturing after 3–5 years at about 35–40 cm, after which their growth rate slows. The maximum recorded age of kahawai is 26 years.[902]

Parore

Parore (*Girella tricuspidata*) occur along both east and west coasts of the North Island, from North Cape to Cook Strait. They usually occur in schools, ranging from half a dozen to several hundred individuals. Parore can grow to a maximum size of approximately 600 mm, but most adult fish are around 300 – 400 mm in length. The maximum age for Parore on the North Island east coast is ten years. Growth is relatively rapid in the first year of life, with fish reaching a size of 100 mm at age one. Fish reach a length of 300 mm by age five, at which time growth slows. Growth rates between males and females and open coast and estuarine populations are similar. Parore reach sexual maturity at a length of 280 mm and spawning takes place in late spring to early summer. Larvae are neustonic, occurring near the ocean's surface, often in association with drifting material such as seaweed clumps. Juveniles enter estuaries in January at a length of about 11 mm. They are initially found on seagrass meadows and beds of Neptune's Necklace (Hormosira banksii) on shallow reefs, but after 3–4 months move down the estuary to other habitats e.g. brown kelp beds. At approximately one year of age they swim out to coastal reefs in the immediate vicinity of estuary mouths and over the following two to three years move to reef systems further off and along-shore. Parore are important herbivores in coastal systems and may play a significant role in structuring algal assemblages.[903]

Snapper

Snapper (*Pagrus auratus*) are also known by the Maori name Tamure. They live in a wide range of habitats in New Zealand's warmer coastal waters, around the North Island and the top of the South, and prefer depths of 5-60 metres. They can grow up to 105 cm in length. They are distinctive with electric blue dots, with a contrasting light copper-pink colour and a silver-white underside. Although they can live up to 60 years of age, most usually live between 30 and 50 years old. What snapper eats changes considerably with the size of the fish. For example, juveniles eat crustaceans which they find just above the sand. As they grow, they eat a wider range of invertebrates, including crabs, worms, and shellfish. Larger snapper have powerful teeth and can easily cope with hard-shelled animals such as paua,

[901] 'Kahawai (Kah)' Paper (2008) accessed online at http://fs.fish.govt.nz/Doc/5483/KAH_FINAL%2008.pdf.ashx.
[902] Ibid.
[903] 'Parore (Par)' Paper (2008) accessed online at http://fs.fish.govt.nz/Doc/5548/PAR_FINAL%2008.pdf.ashx.

mussels, limpets and sea urchins. As they have no eyelids, the fish sleep on the sea floor with their eyes open. Snapper all start their lives as females but during their third or fourth years of life, approximately half of them change sex, going through a hermaphroditic stage to become males. By the time they mature, at about 23 to 26 cm and 3 to 5 years old, the population consists of about half males and half females.[904]

Sprats

There are two species of sprats in New Zealand, *Sprattus antipodum* (slender sprat) and *S. muelleri* (stout sprat). They can be distinguished by body shape, colour, and some morphological features, but are very similar. They are also known by the Maori name Kupae. Sprats occur in coastal waters from the Bay of Islands to Stewart Island, and are also present at the Auckland Islands. Spawning occurs in areas of reduced salinity when water temperatures are coolest (9-10.5°C). This results in regional differences in spawning season with spawning occurring between June and November. The eggs are pelagic. Sprats are assumed to feed on zooplankton and are preyed upon by larger fishes, seabirds, and marine mammals.[905]

Birds of Te Whau

There is a variety of birdlife living around and along the length of the Whau. Native bird species living around the streams include the fantail, kereru, pukeko and tui. Seabirds that frequent the Whau Estuary consist of terns, godwits, shags, seagulls and herons.

Native Forest Birds

Fantail (piwakawaka) – *Rhipidura fuliginosa* (Sparrman, 1787)

There are about ten sub-species of fantail, three of which live in New Zealand: The North Island fantail, the South Island fantail and the Chatham Islands fantail. It is easily recognised by its long tail which opens to a fan. The fantail has a small head and bill and has two colour forms, pied (grey-brown with white and black bands) and melanistic or black. It is widespread throughout New Zealand and its offshore islands. It is one of the few native bird species that has been able to adapt to an environment greatly altered by humans. Originally a bird of open native forests and scrub, it is now also found in exotic plantation forests, in orchards and in gardens. At times, fantails may appear far from any large stands of shrubs or trees, and it has an altitudinal range that extends from sea level to the snow line.[906]

[904] NIWA *Taihoro Nukurangi* website. News and Publications, 'Summer Series 10: Super snapper' (29 April 2010) accessed online at https://www.niwa.co.nz/news/summer-series-10-super-snapper-delicious.
[905] Sprat (Spr) Paper (2006) accessed online at http://fs.fish.govt.nz/Doc/5638/SPR_06.pdf.ashx.
[906] Department of Conservation *Te Papa Atawhai* website. References and photograph sourced online at http://www.doc.govt.nz/nature/native-animals/birds/birds-a-z/fantail-piwakawaka/.

Fantails use their broad tails to change direction quickly while hunting for insects. They sometimes hop around upside-down amongst tree ferns and foliage to pick insects from the underside of leaves. Their main prey are moths, flies, spiders, wasps, and beetles, although they sometimes also eat fruit. They seldom feed on the ground. They use three methods to catch insects. The first, called hawking, is used where vegetation is open and the birds can see for long distances. Fantails use a perch to spot swarms of insects and then fly at the prey, snapping several insects at a time. The second method that fantails use in denser vegetation is called flushing. The fantail flies around to disturb insects, flushing them out before eating them. The third way fantails find food is by feeding associations. The fantail follows another bird or animal to capture insects disturbed by their movements. Fantails frequently follow feeding silvereyes, whiteheads, parakeets and saddlebacks, as well as people.[907]

The fantail lifespan is relatively short in New Zealand (the oldest bird recorded here was three years old). Fantails stay in pairs all year but high mortality means that they seldom survive more than one season. The success of the species is largely due to the fantail's prolific and early breeding. Juvenile females can lay as many as 5 clutches in one season, with between 2-5 eggs per clutch. Both adults incubate eggs for about 14 days and the chicks fledge at about 13 days. Both adults will feed the young, but as soon as the female starts building the next nest the male takes over the role of feeding the previous brood. Young are fed about every 10 minutes – about 100 times per day![908]

Cats, rats, stoats and mynas are as great an enemy to fantails as they are to other native birds. Of all the eggs and chicks' fantails produce, only a few survive and grow up.

Everyone can help with the fantail's survival in the Whau estuary area by: (1) planting a variety of native trees and shrubs to provide a year-round food supply. Plants need to be carefully selected so there are flowers and fruit at different times; (2) Volunteer with the Department of Conservation (DOC) or other groups to control predators and restore bird habitats; (3) Don't throw rubbish into water ways or storm drains; and (4) Put a bell on cat's collars, feed them well and keep them indoors at night.[909]

Kereru (Native pigeon) - *Hemiphaga novaeseelandiae*

The Kereru (also known in Northland as kuku or kukupa) are large birds and can measure up to 51 cm from tail to beak, and weigh about 650 g. Since the extinction of the moa, the kereru and its relative, the Chatham Island pigeon (*Hemiphahga chathamensis)* or parea, are now the only seed dispersers with a bill big enough to swallow large fruit, such as those of karaka,

[907] Ibid.
[908] Ibid.
[909] Ibid.

miro, tawa and taraire. The birds also eat leaves, buds and flowers with the amount varying seasonally and regionally. The disappearance of these birds could be a disaster for the regeneration of our native forests.[910]

The birds live for a long time and thus bred slowly. Key breeding signals are spectacular display flights performed mainly by territorial males. They nest mainly in spring/early summer producing only one egg per nest, which the parents take turns to look after during the 28-day incubation period. The chick grows rapidly, leaving the nest when about 40 days old. It is fed 'pigeon milk', a protein-rich milky secretion from the walls of the parents' crops, mixed with fruit pulp. When much fruit is available, some pairs of kereru will have a large chick in one nest and be incubating an egg in another nearby. Fledglings spend about two weeks with their parents before becoming fully independent, but have remained with their parents during autumn and winter in some cases.[911]

Although quite widespread in areas with large tracts of forest, its numbers are in gradual decline through habitat loss, predation, competition and illegal hunting. The decline has been offset due to recovery on predator-free offshore islands, or from large-scale recovery at sites with widespread pest control. Although the kereru was traditionally hunted for its meat and feathers, hunting the bird is now illegal.[912]

The most serious threat to the kereru comes from predators. Recent studies in several parts of the country have found that many nests produce no chicks at all. Rats, stoats, cats and possums eat the eggs and young. Possums also compete with adult kereru for food (leaves, flowers, fruit) and devastate trees by consuming new shoots. Stoats and cats will attack and kill adult kereru. Forest clearance and poaching are also threats to its survival.[913]

The Department of Conservation (DOC) carries out large scale pest control operations. These assist the recovery of kereru by killing the predators that prey on the eggs and chicks. By controlling rats and possums, kereru populations can increase by 50 per cent in two years. DOC is also involved in educating the public about the plight of the New Zealand pigeon and encouraging local initiatives to save it.[914]

Individuals can help protect kereru in the Whau area by (1) controlling predators (by trapping or poisoning); (2) banding trees and interconnecting trees around an occupied nest to keep predators away; (3) planting trees to feed the kereru. Tree Lucerne is useful in the short-term as it flowers prolifically in winter and grows quickly. For a long-term solution, plant miro, titoki, tawa, fuchsia, kowhai, five-finger, pate, pigeonwood, taraire, puriri and wineberry.[915]

[910] Department of Conservation *Te Papa Atawhai* website. References and photograph sourced online at http://www.doc.govt.nz/nature/native-animals/birds/birds-a-z/nz-pigeon-kereru/.
[911] Ibid.
[912] Ibid.
[913] Ibid.
[914] Ibid.
[915] Ibid.

Pukeko - *Porphyrio porphyrio melanotus*

Pukeko is the New Zealand name for the purple swamphen (*Porphyrio porphyrio*). There are many subspecies of the purple swamphen. The New Zealand species is thought to have landed here around a thousand years ago from Australia. They are commonly seen along marshy roadsides and low-lying open country. The pukeko's range has increased with agricultural development. Unlike many other native birds, the pukeko has adapted well to new habitats, such as grassed paddocks, croplands and even city parks. However, the pukeko is essentially a bird of swampy ground, lagoons, reeds, rushes and swamps.[916]

The birds are approximately 51 cm long and have distinctive colourings: a deep blue colour, with a black head and upper parts, white feathers under their tail, and a red bill and legs. Although they are reluctant flyers, they are good waders, swimmers and runners. They are very territorial creatures and can get quite aggressive. They are mostly vegetarian, but also eat invertebrates, eggs, frogs, small fish, chicks and mammals, especially in breeding season where chicks are fed protein-rich animals. Pukeko are cooperative breeders, with multiple male and female birds often sharing a nest and responsibility for incubation of eggs and the guarding and feeding of chicks. They are protected but can be shot for sport during the shooting season. They have also been culled in the past to protect threatened species.[917]

Tui - *Prosthemadera novaeseelandiae* (Gmelin, 1788)

Tui are endemic to New Zealand and belong to the honeyeater family, feeding mainly on nectar from flowers of native plants such as kowhai, puriri, rewarewa, kahikatea, pohutukawa, rata and flax. They occasionally eat insects. Tui are recognised by their distinctive white tuft under their throat. This tuft contrasts dramatically with the metallic blue-green sheen to their underlying black colour. They can be found throughout the three main islands of New Zealand. They are important pollinators of many native trees and will fly a long way, especially during winter for their favourite foods. Tui live where there is a balance of ground cover, shrubs and trees. They are quite aggressive, and will chase other tui and other species (such as bellbird, silvereye and kereru) away from good food sources. Tui have also been known to defend themselves against magpies and even 'mob' harriers.' The tui has suffered in the past with

[916] Department of Conservation *Te Papa Atawhai* website. References and photograph sourced online at http://www.doc.govt.nz/nature/native-animals/birds/birds-a-z/pukeko/.
[917] Ibid.

the introduction of predators such as possums, feral cats, rats, stoats, and ferrets, along with the destruction of their habitat.[918]

Everyone can help with the Tui's survival in the Whau estuary area by: (1) planting a variety of native trees and shrubs to provide a year-round food supply. Plants need to be carefully selected so there are flowers and fruit at different times; (2) Volunteering with the Department of Conservation (DOC) or other groups to control predators and restore bird habitats; (3) Don't throw rubbish into water ways or storm drains; and (4) Put a bell on cat's collars, feed it well and keep it indoors at night.[919]

Seabirds of the Whau Estuary

Terns

The white-fronted tern (*Sterna striata*) is the most common tern on the New Zealand coastline, with flocks of many hundreds or even thousands of birds. It is seldom found far from the coast and feeds on small and larval fish at sea, in lagoons or up rivers. It is pale grey above and white below, with a black cap that is separated from the bill by a white band (or by an entirely white fore-crown in non-breeding plumage). The tail is white and forked with the length of the tail and depth of the fork decreasing in size outside of the breeding season. The outer edge of the first primary has a narrow black or brownish-black band. In the breeding season, the black cap extends from the white frontal strip down to the back of the neck. Outside of the breeding season the cap recedes, leaving the forehead white. The eyelids, eyes and bill are black and the legs vary from black to dull red-brown. Sexes are similar but females are slightly smaller. Immature birds are similar to non-breeding adults with a black nape streaked with white, wing coverts and distinctive light brown mottling. Recently-fledged birds have fine blackish barring (striations) over the back and wing coverts.[920]

Breeding occurs mainly on the coast of New Zealand and its outlying islands, Stewart, Chatham, and Auckland Islands, and off northeast Tasmania at Flinders and Cape Barren Islands**.** Most of the terns remain in New Zealand during the winter, but in autumn some white-fronted terns - mostly immatures, disperse to south-eastern Australia. White-fronted terns often breed in transient sites such as river beds, estuaries or river mouths that are subjected to frequent flooding**.** They tend to arrive at a prospective nesting location only a few days before laying. The 1-3 (usually 1) eggs are laid in a slight depression on the bare ground without any nesting material. Often small stones are brought in to line the bottom of the nest. Pair-bonds are retained from one season to the next. Before laying, the male courtship-feeds the female, presenting small fish to her.[921]

---

[918] Department of Conservation *Te Papa Atawhai* website. References and photograph sourced online at http://www.doc.govt.nz/tui.
[919] Ibid.
[920] New Zealand Birds Online: The digital encyclopaedia of New Zealand Birds website. Sourced online at http://www.nzbirdsonline.org.nz/species/white-fronted-tern.
[921] Ibid.

Terns nest in dense colonies which provide little protection against predation by introduced mammalian predators such as stoats, ferrets, cats, and rats. White-fronted terns often nest adjacent to red-billed gull colonies but some gulls, especially males, specialise in preying on the eggs and chicks of terns. Colonies of nesting terns are also vulnerable to disturbance by people and their dogs. The New Zealand population has declined markedly over the last 40 years and is currently regarded as threatened.[922]

The white-fronted tern is easily distinguished from the other two New Zealand tern species - the much larger Caspian tern (found throughout New Zealand) and the smaller, darker black-fronted tern (mostly found in the eastern South Island). The white-fronted tern is the largest and palest of the three species.

The Caspian tern (*Sterna caspia*) is a large distinctive gull-like tern of shallow coastal waters and, particularly outside of the breeding season, inland lakes and rivers throughout New Zealand. It is the largest of all species of terns. With its one metre wingspan, it is similar in size to a black-backed gull. Caspian terns are silver-grey above and white below, with dark wing tips. The tail is relatively short and only slightly forked compared to other terns. The large bill is mostly bright red in adults, becoming dark near the tip, with the extreme tip yellowish. Adults have black legs and a black cap to below the eye during the breeding season. The cap becomes speckled with white and less sharply delineated at other times of the year. Juveniles have some brown mottling on the back that is lost during the first autumn moult, while the diffuse brown cap is retained for longer. The bill is orange and smaller than adults at first. The legs and feet may be dull orange or black.[923]

In New Zealand, Caspian terns frequent sheltered bays and harbours of the main islands, but are also seen regularly at inland lakes and rivers of Canterbury, the central North Island and Waikato. Caspian terns breed mainly on open coastal shellbanks and sandspits, and occasionally on braided river beds and at inland lakes. Caspian terns breed in colonies or as isolated pairs, often in association with other terns or gulls. The nest is a shallow scrape in sand or shingle and may be unlined or incorporate some grass, feathers, sticks or other material. The two parents share incubation of a clutch of 1 to 3 dark speckled light grey or olive-brown eggs for three to four weeks. Eggs are laid from late September through to late December. Chicks are fed whole regurgitated fish by both parents. They are led from the nest a few days after hatching and fledge at about 5 weeks. They continue to be fed by the adults for several more months and may accompany them to wintering sites. Caspian terns first breed when 3-4 years old. After breeding, North Island birds tend to stay within 100 km of their breeding places; birds banded in Northland feed and roost on such harbours as the Kaipara, Manukau and the Firth of Thames.[924]

Caspian terns feed mostly on small surface-swimming fish such as yellow-eyed mullet, piper and smelt. Fish are caught by plunge-diving and usually swallowed in flight. They have also

[922] Ibid.
[923] New Zealand Birds Online: The digital encyclopaedia of New Zealand Birds website. Sourced online at http://nzbirdsonline.org.nz/species/caspian-tern.
[924] Ibid.

been recorded feeding on crickets and marine worms caught by probing in soft mud and wading in shallow water.[925]

There is little evidence of Caspian terns in coastal deposits of subfossil bones in New Zealand, indicating that they may have colonised recently or had a very restricted distribution here until the early 20th century. Although widespread now, Caspian terns remain uncommon in New Zealand, with around 1300-1400 breeding pairs estimated. They are susceptible to nest disturbance by people, dogs, and off-road vehicles. Southern black-backed gulls and red-billed gulls may attack eggs and chicks following disturbance by people. Like other shore-nesting birds, chicks and eggs are vulnerable to predation by introduced mammalian predators such as cats, stoats and ferrets.[926]

Godwits

The bartailed godwit (known by Maori as kuaka) have a brown and grey plumage that echo the intertidal mudflats where they forage - predominantly on soft intertidal substrates. At low tide godwits either forage individually dispersed or in loose formations and at high tide they congregate in flocks at high tide roosts. In parts of Auckland, flocks are commonly seen commuting between the Manukau and Waitemata Harbours. Godwits occur on almost any harbour or estuary, although the bulk of the population occur at larger sites (such as the Manukau). They are large long-legged waders, predominantly brown above, pale below, with a long tapering and slightly upturned bi-coloured bill, pink at the base and black towards the tip. Males are markedly smaller with shorter bills than females. While some overlap in size and bill-length does occur, most of the time sexes can be separated in the field. In non-breeding plumage both sexes are alike – the crown and hind neck is pale brown with dark streaks; the scapulars and coverts are brown with dark centres and pale fringes giving a streaked appearance; the lower back, rump and tail is barred with brown. Their underparts are pale with a grey-brown wash with fine streaking on the neck and flanks. In breeding plumage, most males undergo a complete transformation, becoming bright rufous on the head, neck, breast and belly, with strongly contrasting upperparts – dark feathers with buff fringes and notches. Females are considerably less colourful, becoming strongly streaked and barred on the neck, breast and flanks, sometimes with a pale rufous wash. Juveniles that have recently arrived in New Zealand are recognisable by the broader buff margins to their scapular and back feathers, making then appear more mottled than adults; this plumage is rapidly moulted and replaced.[927]

Godwits hold cultural significance for many New Zealanders. For Maori, they were birds of mystery, and were believed to accompany spirits of the departed; but they were also a source of food. They are the most numerous tundra-breeding shorebird species to occur in

[925] Ibid.
[926] Ibid.
[927] New Zealand Birds Online: The digital encyclopaedia of New Zealand Birds website. Sourced online at http://nzbirdsonline.org.nz/species/bar-tailed-godwit.

New Zealand, with around 90,000 here each year. Virtually all New Zealand birds are from the *baueri* subspecies breeding on upland and coastal tundra on the western rim of Alaska, from the coast to up to 200 km inland, from the Gulf of Alaska to North Slope. A clutch of four eggs is laid in a shallow bowl often lined with lichen. Parents share incubation and brooding post-hatching, but one parent may depart for the migration staging area earlier. Young are fully developed at hatching, and fledge after 28-30 days. Juveniles arrive in New Zealand after their first trans-Pacific flight when barely four months old.[928]

They do not breed until their fourth year, so each southern winter there are hundreds of non-breeding birds remaining in New Zealand. Following the breeding season, birds generally begin arriving from early September. They depart on their northern migration from early March, in flocks varying between less than ten birds to over a hundred, heading for refuelling sites around the Yellow Sea. Their non-stop eight to nine day migratory patterns are the longest nonstop flights of any seabird.[929]

Bar-tailed godwits are fully protected in New Zealand. Although their population is stable, it is known to have declined at some sites where expansion of mangroves may be reducing the area available for foraging. Godwits tend to be wary and easily scared, and so preventing or minimising disturbance at high tide roost sites is an important conservation consideration.[930]

Shags

Pied shags (*Phalacrocorax* varius) (Maori names include karuhiruhi or kawau) mostly inhabit coastal habitats around New Zealand. Adults have the crown, back of the neck, mantle, rump, wings, thighs and tail black, (although the upper wing coverts are grey-black with a thin black border). The face, throat, sides of neck and underparts are white. The long, hooked beak is grey, the iris is green and legs and feet are black. On breeding adults, the skin in front of the eye is yellow, the base of the beak is pink or pink-red, and the eye-ring is blue. Non-breeding adults have paler skin colours than breeders. The upperparts of juveniles and immatures have dark and pale brown tones. Their underparts are white but with varying amounts of brown mottling, from almost entirely brown to little at all. The skin in front of the eye is pale yellow, at the base of the beak it is grey - pale pink, and the eye-ring is grey.[931]

The pied shag has a mainly coastal breeding distribution, occurring in three separate areas of New Zealand. Northern North Island: colonies on the western and eastern coasts of Northland and Auckland, and extending down to East Cape. Central New Zealand: Wellington, Nelson, Marlborough and Canterbury as far south as Banks Peninsula. Southern South Island: Fiordland and Stewart Island. Pied shags mainly forage in coastal marine

[928] Ibid.
[929] Ibid.
[930] Ibid.
[931] New Zealand Birds Online: The digital encyclopaedia of New Zealand Birds website. Sourced online at http://nzbirdsonline.org.nz/species/pied-shag.

waters, harbours and estuaries, but occasionally also in freshwater lakes and ponds close to the coast.[932]

Pied shags mainly nest in trees along coastal cliffs, with a few colonies in trees in or about freshwater lakes near the coast. Clutches are laid in all months, with peaks during February-April and August-October. Clutch size is typically 2-5 eggs, and both sexes share incubation and care of young. Chicks start flying at 7-8 weeks of age, and remain at or near the colony to be fed by their parents for a further 10-11 weeks.[933]

Adult pied shags appear to be sedentary, but some juveniles disperse widely. When resting during the day, birds occur on undisturbed beaches, shoreline rocks, trees and artificial structures. During the late afternoon or evening, pied shags return to nesting colonies or favoured roosts in trees near water for the night. They are generally a solitary forager, but occasionally small groups gather where prey is readily available. When swimming slowly at the surface, they use alternate feet, but when foraging underwater they use both feet at the same time for propulsion. Pied shags generally forage in water less than 10 m deep and feed mainly on fish (6-15 cm long), and occasionally on crustaceans. Prey species include flounder, mullet, eel, goldfish, perch, goatfish, kahawai, wrasse and common trevally.[934]

There are a variety of threats to pied shags. Some have drowned in craypots, set-nets and on inshore longlines. Some birds have been affected by oil spills, including following the grounding of the container ship *Rena* off Tauranga in October 2011. During the recent population expansion in central New Zealand, pied shags have established colonies in trees adjacent to peoples' homes. The noise and smell of such colonies has resulted in a few nesting trees being felled. It is unknown whether changes in prey abundance because of commercial fishing or climate change, has impacted, positively or negatively, on the pied shag.[935]

Seagulls

The southern black-backed gull (karoro in Maori) is one of the most abundant and familiar large birds in New Zealand. It is the only large gull found in New Zealand and is one of only two native bird species not afforded any level of protection under the Wildlife Act (as the birds are often considered pests). They can be found on all non-forested habitats from coastal waters to high-country farms, and are common in estuaries and harbours, rocky and sandy shores and riverbeds. They can also more sparsely be found inland over farmland, and even subalpine tussock land and herb fields.[936]

The largest breeding colonies are on islands, steep headlands, sand or shingle spits, or on islands in shingle riverbeds. The nest is a bulky collection of grass, small sticks or seaweed,

[932] Ibid.
[933] Ibid.
[934] Ibid.
[935] Ibid.
[936] New Zealand Birds Online: The digital encyclopaedia of New Zealand Birds website. Sourced online at http://nzbirdsonline.org.nz/species/southern-black-backed-gull.

or a simple scrape in sand or shingle. The clutch contains two to three large grey-green eggs with dark brown spots and blotches with incubation shared by both parents. Laying is mainly from October through to January. The incubation period lasts from 23 to 26 days with chicks fledging at about 7-8 weeks old. They are fed by adults for at least another month.[937]

Adults have a white head and underparts with a black back, yellow bill with a red spot near the tip of the lower mandible, and pale green legs. Juveniles are dark mottled brown with a black bill and legs; their plumage lightens with age until they moult into adult plumage at 3 years old.[938]

The noisy black-backed gulls are often attracted to food sources provided inadvertently or deliberately by people. In cities, they often roost and even nest on roofs. They are common in urban parks, seeking hand-outs and scraps, or harvesting earthworms from water-logged playing fields. Black-backed gulls are often seen on the water's edge where they scavenge corpses and fish frames washed up on the tide. They are both predators and scavengers and have been recorded catching and consuming a wide range of marine and terrestrial invertebrates, fish, small mammals, birds and their eggs and chicks. They consume large quantities of organic waste from landfills and farms, plus offal from fishing boats and processing factories.[939]

Herons

The white-faced heron (*Egretta novaehollandiae),* (matuku in Maori) is New Zealand's most common heron despite being a relatively new arrival to this country, having self-introduced in the 1940s. From the 1950s onwards numbers have grown rapidly and they are now widespread throughout the country, including the Chatham Islands. It is primarily a bird of rocky shores and estuary mudflats, but can also be found near the shallow edges of lakes up to 500 m altitude, and on farm ponds.[940]

The white-faced heron is a medium-sized heron with primarily blue-grey plumage. As the name suggests it has white on the face and the front of its neck. The back is medium blue-grey with the chest and underside more brown-toned. In breeding plumage, white-faced herons have strap-like grey plumes on the back, and shorter pinkish brown plumes on the breast. The dagger-like bill is dark grey, dull yellow at the base, and the legs are pale yellow. In flight, the white-faced heron usually tucks its head back towards its shoulders in the characteristic heron posture, but it will also fly with neck out-stretched. Its open wings show contrast between the pale grey fore-wing and dark grey main flight feathers on both the upper and lower surfaces. Immature birds lack the white face.[941]

---

[937] Ibid.
[938] Ibid.
[939] Ibid.
[940] New Zealand Birds Online: The digital encyclopaedia of New Zealand Birds website. Sourced online at http://www.nzbirdsonline.org.nz/species/white-faced-heron.
[941] Ibid.

White-faced herons are tree-top dwellers, favouring the tops of large pine trees or macrocarpa growing near water. They build a loose platform nest where three to five eggs are incubated by both parents. There is usually only one nest per tree, but some breed in loose colonies. In northern areas, nesting starts as early as June, but is later further south. Laying peaks around October. Incubation takes about 26 days. It is unusual for more than two chicks to be raised per brood.[942]

Foraging white-faced herons walk slowly with long, controlled steps, watching for any signs of prey, which is grabbed with lightning speed. They catch and consume a wide range of prey, including small fish, crabs, worms, insects, spiders, mice, lizards, tadpoles and frogs. In places where many herons congregate at one time (for example on mudflats), aggressive displays may be directed to other herons that approach too close.[943]

The reef heron (*Egretta* sacra), (matuku moana in Maori) is a medium-sized dark grey wading bird with a long, greyish-yellow, heavy bill and greenish-yellow legs. It is most often seen in coastal areas in the north of the North Island. The reef herons' prevalence in northern New Zealand may reflect their preference for warmer climates. One or two birds may be found patrolling a rocky shoreline or nearby estuary where they stalk around rock pools and small rivulets of water that may carry fish. They can also be seen on estuary mudflats feeding at low tide and may occasionally be seen wading in the shallow waves on sandy beaches. The reef heron is rarely seen inland. Although similar to the common white-faced heron it is not seen as frequently and has slightly different feeding habits. The dark grey colour provides the bird with excellent camouflage when it is patrolling the shoreline rocks that are its main habitat.[944]

During the breeding season it develops long plumes, mainly on its back but with some also on its chest. It has no white face but a small streak of white may sometimes be seen on the throat. In flight, it tucks its head back into its shoulders so that the length of its neck is hidden, giving it a hunched appearance. It stays low unless travelling a significant distance when it may fly higher. Immature birds are brownish.[945]

Reef herons are usually solitary birds, and they occur at low densities, with territories of adjacent pairs often many kilometres apart. They nest in dark places that are low to the ground, e.g. in rocky caverns and under old bridges, etc. Nesting is usually September to December with the two to three eggs incubated by both parents. Hatchlings have dark grey down and are fed partially-regurgitated food from both parents. They start wandering near the nest after about three weeks, and continue to be cared for by the parents for a further

[942] Ibid.
[943] Ibid.
[944] New Zealand Birds Online: The digital encyclopaedia of New Zealand Birds website. Sourced online at http://nzbirdsonline.org.nz/species/reef-heron.
[945] Ibid.

two to three weeks. The family group may either break up at this point, or stay together through to at least February.[946]

Daily feeding routines are influenced by tide cycles, with birds feed on the falling or low tide, including at night. They catch and eat small fish, crustaceans and worms. They move stealthily to catch their prey by surprise, and sometimes crouch with outstretched wings to create a shaded area underneath to entice prey within reach, which is then rapidly stabbed or grabbed. Other foraging techniques include moving carefully along the water's edge looking for prey, or using a foot to stir up the substrate to catch any prey that is disturbed. Foraging reef herons generally ignore nearby birds of another species.[947]

The New Zealand reef heron population is estimated at only 300-500 birds, but they are regularly seen at the sites where they occur, and those populations surveyed appear to have been stable over the past 40 years. However, the shoreline habitat occupied by the reef heron has ongoing threats from encroachment by development, and the birds are vulnerable to disturbance by people and dogs. The conservation status of this species was changed from nationally vulnerable to nationally endangered in 2013.[948]

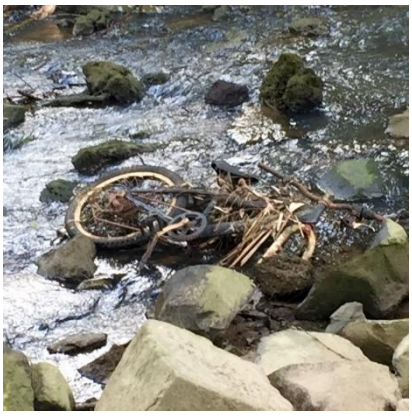
[946] Ibid.
[947] Ibid.
[948] Ibid.

Chapter Ten

Pollution and Degradation of the Whau

The following two chapters focus on pollution of the Whau and ultimately, its restoration and conservation. Much of the written material has been sourced and summarised from *"Our Streams, Our Future: The Whau River Catchment"* (Interactive CD). This is a community resource prepared for Friends of the Whau by Creative Designs Ltd, July 2005.

"The stinky old Whau!"



Many people think of the river as 'the stinky old Whau.' There is little care taken or admiration given as many people underestimate the value of the reaches of the river. Perhaps this is because the murky mud flats and dense mangroves prohibit easy access into the water, thus creating a visual, mental and physical barrier between the land, the people and the river. Cans, empty bottles, rubbish, nappies, old bicycles and even shopping trollies are wilfully and ignorantly tossed into its forlorn waters, thus adding to the already negative image. Although these aesthetically displeasing items detract from the beauty of the Whau – the deeper pollutant issues are more problematic. The Whau River, banks and land mass have gone through an extended process of changing land uses, forest and wetland removal, and loss through piping of many of the streams which feed its ecosystems. The spread of roads and other impervious areas,[949] piping of streams, and traditional wastewater and stormwater systems have collectively led to the pollution of the river and its tributaries. Diffuse, or non-point sources cause much of the pollutant load, although point sources associated with spills of industrial chemicals, for example, can lead to devastating effects on wildlife in streams. Projected increases in the number of motor vehicles point to even more pollution from one of the main diffuse sources, even as technology produces cleaner car engines. These point sources must be eliminated as concerns.

The first section of this chapter discusses the complex issues of stormwater contaminants and stormwater related issues, potentially contaminated sites in businesses, and waste management in households. The next section examines a new approach to handling the

[949] Impervious surfaces are increased areas of roofing, car parks, roads and other paved surfaces available for pollutants to accumulate onto and wash off in stormwater runoff. Rain falling onto impervious surfaces is much more likely to generate surface runoff and contribute to overall stormwater volumes. Stormwater warmed by impervious surfaces also degrades stream ecosystems and habitat.

rapid runoff of polluted surface water that comes from impervious areas - generally termed 'water sensitive urban design.' Discussion on the five standard approaches to reducing the impact of stormwater on natural environments details reducing site disturbances, reducing impervious surfaces, constructing biofiltration practices, creating natural areas and clustering development. A subsequent section serves to introduce the integrated design elements – describing the functions and application of ponds, wetlands, swales/filter strips, media filters, raingardens, riparian buffers and roof gardens. The final section of this chapter discusses Project Twin Streams, a test bed for collaborative innovation in addressing stormwater management problems.

Stormwater Contaminants

Stormwater contaminants result from everyday urban life. Impervious (water-resistant) surfaces collect these contaminants which are then washed off by surface water runoff. They are shifted off the surfaces through drainage pipes and into the Whau.

Contaminants take on many different forms. For example, 'suspended sediments' are soil and organic particles drawn in and transported through stormwater flow. They can be silt sized or smaller. Sediments reduce light transmission through water, clog fish gills, affect filter-feeding shellfish, smother benthic organisms, change benthic habitats and fill up estuaries. Larger soil particles, above silt sized, are also contaminants, but typically exhibit different physical characteristics and settle much more quickly. These particles are sometimes termed "bed load" sediment.

Other forms of contaminants include 'oxygen demanders'. These involve soil organic matter and plant debris which reduce the oxygen content of water when bacteria consume them.

Pathogens are disease-causing bacteria and viruses, usually originating from sanitary sewers. Organisms such as faecal coliform and enterococci are often used as indicators of the presence of pathogenic organisms. Levels of the indicator organisms in stormwater in the pipe prior to discharge may exceed Ministry of Health guidelines for contact recreation and shellfish collection but dilution with receiving waters will usually mean public health criteria are not exceeded.

Heavy metals are another form of worrisome contaminant. A variety of trace metal compounds are carried in stormwater in both solid and dissolved forms. Zinc, lead, copper and chromium are of most concern. Metals are persistent as they don't decompose and they accumulate in sediments, plants, and filter feeding animals such as shellfish. Elevated levels of metals cause public health issues and an avoidance of the affected habitat area (leading to a reduction in the number and diversity of fauna).

The hydrocarbons in stormwater are generally those associated with vehicle use. They may be in the form of a free slick, oil droplets, and oil emulsion, in solution or absorbed to sediments.

A large range of trace organic compounds has been found in stormwater in Auckland. Polyaromatic hydrocarbons (PAH's) are one major group. PAH's are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas (soot,

for example). Organo-chlorine pesticides such as Dieldrin, Lindane and Heptachlor constitute another main class of toxic organics.

Nutrients in stormwater are usually nitrogen and phosphorus compounds that stimulate plant and algae growth. Where concentrations are sufficient, aerobic decomposition occurs which removes dissolved oxygen from the receiving waters.

Motor vehicles are a source of high contamination, producing water pollution as well as air pollution. Much air pollution, such as particulates, returns to land and becomes water pollution if it falls on impervious surfaces. Other pollution, such as tyre wear and brake lining wear, which contribute heavy metals such as zinc, are discharged directly to the road surface and accumulate before being washed off by surface water runoff. Vehicle pollution is a principal contributor to pollution carried by stormwater. Copper is one further problem.

Stormwater Related Issues

Stormwater concerns arise from both environmental degradation and health hazards caused by excessive volumes of polluted surface water runoff from urban and peri-urban areas and the environmentally, socially, and economically insular practices that have been used to manage stormwater in past decades. For example, the condition of existing infrastructure in the Whau catchment is poor. Most of the city's urbanised catchments have a mix of reticulated and natural stormwater drainage, although in some areas all streams have been piped. In many older urban areas, the pipe network is in poor condition or is now inadequate to cope with demand. Existing infrastructure has almost entirely been constructed under an earlier and now outdated approach to stormwater management which treated stormwater as "waste" to be removed as quickly and efficiently as possible from human settlements. Unfortunately, there was no comprehension of the ecological damage being caused.

Altered streamflows (increased and reduced) from expanding impervious areas are also a cause for concern. For example, increased peak flows from expanding impervious areas leads to more effective generation of surface runoff. The resulting increased peak flows in streams wash out habitats and wash away aquatic life. It also degrades the receiving environment quality by diluting saline environments and physically changing habitats. Expanding impervious areas also leads to less infiltration of rainwater and faster passage of surface water to streams. Thus, less water is available to feed streams between rainfall events. These "ecological" or "low" streamflows would normally be maintained by slow seepage out from soil and subsoils, as well as recharge from deeper groundwater. Reduced low flows degrade and destroy stream habitat by making some small streams transient and by changing the habitat types in others.

Flooding is another area of concern. It impacts greatly on living and working areas and adds risk to human life, and public health. It also impacts on habitability and serviceability of buildings and there are costs of clean up and repair to both the private and public sector.

Roads function as supplementary watercourses during very intense rainstorms and flooding becomes excessive when impervious areas in the vicinity reach levels not considered when

pipe systems were designed. Blockage of drains further reduces capacity and increases the likelihood of surface flooding.

Historic land use change and associated urbanisation has caused significant alteration of existing stormwater flows through loss of vegetation cover, increased impermeable surfaces and loss of streams. It also causes significant effects on stormwater quality and habitat values through loss of streams, loss of vegetation cover and increased sedimentation from earthworks. New large-scale subdivisions will require significant stormwater infrastructure spending, e.g. construction of stormwater ponds and enlarging or laying new stormwater pipelines. Large scale earthworks have a very significant effect on stormwater and streams, with up to 25% of silt running off the land ending up in streams, smothering aquatic life and carrying contaminants to the coastal receiving environment. Construction of roading and other impermeable surfaces also causes shock loadings of sediment on stormwater and stream systems. The control and monitoring of earthworks associated with small scale building platforms or individual sites is currently not occurring. Cumulative effects of lack of silt control for such developments leads to significant sediment discharges and impacts on surface water quality.

Loss of stabilising tree cover, or poorly designed slopes and stormwater systems can lead to increased incidence of land instability, leading to increased volumes of sediment reaching the drainage network and thus degrading stormwater quality. Increased surface water flows can lead to increased surface erosion and increased sediment loads in streams. Increased risk of land instability can lead to threats to human safety and property where developments are sited in marginal areas.

Erosion of waterways is another matter of great concern. Increased storm flows in soft-bottomed streams cause down cutting and streambank erosion that results in increased sediment loads into stream waters and associated effects on water quality, habitat and aquatic life. It can also lead to widening of streams threatening existing development with potential slips.

Point source and non-point source contamination of water are major problems for the health of the Whau and its tributaries. Sewer overflows are a point source contamination of water resulting from inadequate pipe capacity entering aquatic environments in large volumes. It is often very difficult to clean up and mitigate impacts once they have occurred.

Non-point source contamination of water derives from a multitude of origins. Industrial areas are one example. The potential environmental impact from industrial sites far exceeds that of residential sites. Where highly toxic substances are present, even very tiny amounts can have a large impact on catchments. Road traffic volumes is another non-point source of contamination of water. The direct relationship between traffic volume and contaminants on roadways indicates a direct relationship between vehicle numbers and the quantities of contaminants in stormwater running off. Many of these contaminants are highly toxic in aquatic environments. Air pollution is yet another example. Particles from motor vehicle emissions, fires and industrial air discharges collect as dust on impervious surfaces and are

washed off and brought back to the land surface by rain, contributing to pollution of runoff from these impervious surfaces.

Habitat loss and degradation has become a major issue to many waterways, including the Whau and its tributaries. A reduction in riparian vegetation reduces the area of habitat. For example, a loss of shading of water results in less oxygen and growth of exotic weeds which also consume oxygen needed for other aquatic species. Loss of water/vegetation interface habitats means many species can no longer live or breed in the stream. Increased erosion of banks and stream bed destroys pools and other in-stream habitats. Increased sediment loads and turbidity of water because of destabilised banks means sensitive species can no longer live in the water.

Loss of aquatic habitat results from the piping of small and transient streams which are very important habitat for native fish. Reduction in base flows by increased impermeable surfaces can make permanent streams merely fleeting. Disruption of in-stream life occurs at outflow points of pipes because of peak discharges. Stream and stream habitat connectivity are critical for the migration of native aquatic species, many of which are migratory and need both streams and the sea to complete their breeding cycle. Specific concerns include fish passage being prevented by culverts and damming of streams; habitat being removed by piping streams which are replaced with reticulated pipe networks; increased impermeable surfaces reducing infiltration of rain into soils, thus reducing stream base flows so that some streams or stream sections become ephemeral, only flowing in winter.

Potentially Contaminated Sites in Businesses

Potentially contaminated sites include those that are known sources of pollution and those where pollution incidents may occur intermittently, or further information is required to clarify the risk. Examples include previously horticultural sites, landfill sites, dangerous goods areas, working environments, and wastewater overflows. An example of a water polluted site is the 40 ha Span Farm industrial area in Glendene. In November 2000, in association with Friends of the Whau, the Auckland Regional Council (ARC) conducted an intensive assessment of the pollution performance of the properties in the area. The aims of the project were to: (1) Identify and stop any actual sources of ground or water pollution on-site; (2) Assess any potential activities that could lead to pollution from the site in future; (3) Provide environmental education materials and management advice; (4) Extend and update ARC's pollution control database; and (5) Compare current performance with previous reports.

The Span farm area included 114 commercial and industrial sites. Each site was classified according to its pollution risk, based on the type of business carried out. High risk sites are large sites with potential for substantial discharges onto the ground or into the stormwater system. Medium risk sites can be the source of minor or occasional pollution incidents that collectively have potential for substantial impact on the environment. Low pollution risk sites have negligible or infrequent pollution incidents, such as car washing.

The industry in the area is mainly light industrial with most businesses being low or medium risk. However, several high-risk businesses were identified, including metal coating

workshops, boat builders, paint, textile, and plastic manufacturers, and an underground storage tank decommissioning yard.

West Weekly, Wednesday 12 December 2001

Whau polluters targeted

by Anna Rushworth

A pollution blitz has been declared on New Lynn.

Officers from the Auckland Regional Council and the Waitakere City Council swooped on around 120 industrial sites and business last Friday.

The blitz focussed on sites around the Delta Ave and Great North Rd industrial areas.

The exercise was aimed at informing businesses on stormwater issues, and the safe storage and disposal of chemicals.

The area was chosen because of the large number of motor vehicle industries operating there and because it's adjacent to the part of Whau River which has become more polluted as industry has increased around the catchment area.

Doug Craig, convener of Friends of the Whau, says the river was once an excellent fishing area.

"Around 50 years ago you could catch eels and flounder in the river, but you can't do that now," he says.

ON ALERT: Doug Craig of Friends of the Whau with Jane Puddephatt from the ARC and Michelle Dawson from Waitakere City Council at Whau River.

Thirty-two sites had at least one potential pollution source – including possible spills and leaks of raw materials. The main actual polluters were in the motor vehicle, manufacturing and engineering categories. Typical problems included washing equipment, floors and vehicles to the yard or stormwater system (a number of businesses regularly washed vehicles and equipment without a dedicated wash facility, and several disposed of internal wash water outside);[950] drums, tanks and containers of chemicals and oils stored inappropriately;[951] spillages to the yard and stormwater system;[952] contaminants leaking from waste bins outside;[953] uncovered or uncontained waste storage;[954] site contamination;[955] and companies lacking a spill plan or staff education on

[950] Disposing of wash water to an external yard or washing outside is a common source of pollution to the stormwater system. Often sites have hoses on the outside of the building for washing outside. Wash water almost always enters either the ground or the stormwater system and from there reaches the nearest watercourse.

[951] Waste oil is often associated with the automotive and engineering sector. It is often stored outside in an uncontained manner until removed. At a small number of sites waste oil containers had spilled or overflowed leaving contaminated and discoloured ground.

[952] Sites where there were spills of industrial materials were required to clean up residues and take measures to prevent further discharges. Past spills are not always easy to detect although some are associated with obvious site contamination or discolouration.

[953] These were a potential source of pollution at many sites. Waste bins were stored outside, uncovered, so that rain enters them, washing contents through holes in the bin onto the ground and into the stormwater system. Bin contents varied from relatively innocuous to highly polluting. Staff of many businesses, manage waste improperly, including placing liquids in bins. Waste compactors are also a source of pollution, as wastes may leak. Large companies with large waste streams use these compactors. Waste compactors are often stored outside and are often associated with mess from spillage.

[954] Several sites at Span Farm had volume of bulk liquids stored outside and/or unbunded. These may result in spills, leaks, or accidents that lead to soil and water contamination. Also, outside bunded storage areas which are uncovered have the potential for leaks or transfer spills to contaminate rainwater within the bund which flows out beyond the bund. Companies that store chemicals outside within bunds are advised to develop a procedure to identify leaks from containers into the bunded area, and to test for the presence of contaminants in the water collected in the bund, before releasing water to the stormwater system.

[955] Site contamination can result from numerous pollution problems – such as spills, leaks, or waste/raw product overflows. Three sites at Span Farm had potentially significant contamination and were required to investigate these further. Minor site contamination, e.g. associated with waste oil storage and equipment wash areas, could be dealt with simply. At some sites, contamination was caused from wastewater discharges or leaks and spills from stored wastes outside on unsealed ground.

environmental issues.[956] site contamination;[957] and companies lacking a spill plan or staff education on environmental issues.[958]

The McLeod Road industrial area and Cartwright and Sabulite Roads in Kelston (commercial and industrial areas) also have a history of water pollution like those found at Span Farm. These two sites are located on the Te Atatu Peninsula, adjoining the Whau estuary. Typical problems identified in these two areas included washing equipment, used parts, floors and vehicles to the yard or stormwater system; compressor condensate discharging to ground or stormwater system; contaminants leaking onto the ground from waste bins stored outside; poor housekeeping such as old/empty drums left outdoors; companies lacking a spill plan or staff education on environmental issues; drums, tanks and containers of chemicals and soils stored in an inappropriate manner; inadequate bunding;[959] spillages to the yard and into the stormwater system; uncovered or uncontained waste bins; and ground contamination.

Waste Management in Households

Whatever is poured down stormwater drains, and whatever hard surfaces are located on private land influences the water quality of the Whau and its tributaries. Any time something other than rainwater flows down a stormwater drain pollution is being caused. One household's bit of pollution may seem small but add that to thousands more little bits and it leads to a huge problem. Appendix A provides a list of ways Whau residents can help reduce stormwater pollution of the Whau.

A New Approach to Stormwater Issues

A new approach is emerging to handle urban stormwater, the rapid runoff of (usually) polluted surface water that comes from impervious areas. This approach is termed water sensitive urban design.[960] It involves insertion, or retention and restoration, of a wide variety of soil-plant systems in the flow path of surface waters. The water is slowed down, reducing flood flows in streams, and it is also cleaned through a range of filtering processes.

---

[956] Sloppy work practices are one of the main causes of industrial pollution. Numerous sites showed evidence of poor housekeeping habits – ranging from stockpiling empty containers on the yard to debris from site activities littering the entire yard area.

[957] Site contamination can result from numerous pollution problems – such as spills, leaks, or waste/raw product overflows. Three sites at Span Farm had potentially significant contamination and were required to investigate these further. Minor site contamination, e.g. associated with waste oil storage and equipment wash areas, could be dealt with simply. At some sites, contamination was caused from wastewater discharges or leaks and spills from stored wastes outside on unsealed ground.

[958] Sloppy work practices are one of the main causes of industrial pollution. Numerous sites showed evidence of poor housekeeping habits – ranging from stockpiling empty containers on the yard to debris from site activities littering the entire yard area.

[959] Bunding (or bund wall) is a constructed retaining wall around storage where potentially polluting substances are handled, processed or stored, for the purposes of containing any unintended escape of material from that area until such time as remedial action can be taken.

[960] Water Sensitive Urban design (or low impact urban design, LIUD) is a key mechanism for reducing demand for conventional stormwater services. It is a philosophy, a vision for the environment, that is neither pro-development or anti-development. LIUD asks for understanding of natural systems and making the commitment to work within the limits of these systems whenever and wherever possible.

The devices are designed around indigenous plant species to minimise weed risk and reduce maintenance requirements.

Stormwater management should be comprehensive in scope, with management techniques designed to achieve multiple stormwater objectives. These objectives include both peak rate and volume control as well as water quality control and temperature maintenance. Comprehensive stormwater management involves addressing these aspects of stormwater. Complicated site configurations with multiple structural techniques may be required in some situations but the objective of low impact design is simple solutions to complex problems.

Stormwater management, when it is provided, is often tacked on at the end of the site design process and almost always provides less than desirable results. For stormwater management objectives to be achieved, stormwater must be incorporated into site design from the outset and integrated into conceptual site planning, just as traffic considerations are. Stormwater impacts may, in some situations, even be a factor in determining the type and extent of a use which is to be developed at a site.

A key objective in stormwater management is minimisation of stormwater generating designs and avoidance of contamination occurring in the first place. This is a very different approach than the historic one. Historically, there has been a presumption that development must continue along traditional lines, and stormwater management has attempted to mitigate impacts to the greatest degree possible usually by use of a pond at the bottom of the hill or catchment. Prevention of impacts will lessen the reliance on mitigation practices to reduce or eliminate adverse impacts.

From both an environmental and economic perspective, minimising the concentration of stormwater and its conveyance in pipes costs less money and helps to maintain natural hydrology. Pipes, culverts, and elaborate systems of inlets to collect and convey stormwater, work against these management objectives and generally make stormwater management more difficult as such systems increase flows and rates of flows, with a result of worsening erosive stormwater forces.

The soil mantle offers critical contaminant removal functions through physical processing (filtration), biological processing (microbial action), and chemical processing. Plants similarly provide substantial pollutant uptake/removal potential, through physical filtering, biological uptake of nutrients, and even various types of chemical interactions.

Approaches to Reducing the Impact of Stormwater on Natural Environments

There are five standard approaches to reduce the impact of stormwater on natural environments. These include reducing site disturbances, reducing impervious surfaces, constructing bio filtration practices, creating natural areas and clustering development.

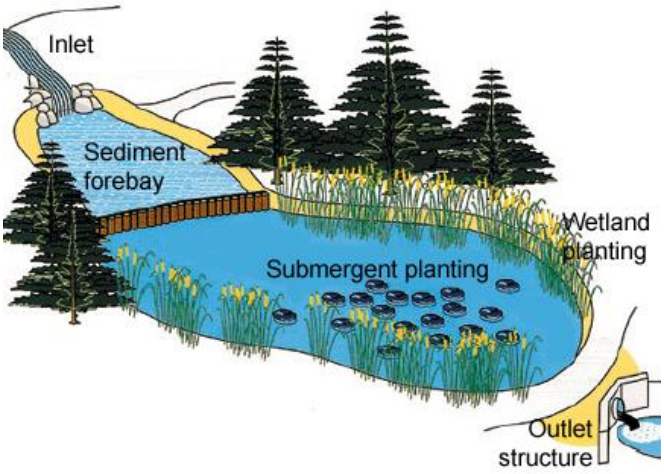
1. Reducing Site Disturbances: Many sites have existing resources which, in addition to other values, have soil retention and stormwater management benefits. These natural systems include forested areas, wetlands, and other areas of natural value. Forested areas provide for rainfall interception by leaf canopy. The organic forest

litter on the forest floor acts very much like a sponge to capture the water and prevent overland flow. Wetlands are valuable resources and provide numerous benefits including flood control, low streamflow augmentation, erosion control, water quality, and habitat. From a construction standpoint, leaving areas in natural ground cover can have a significant benefit by reducing downstream sediment delivery. Sediment yield from disturbed soils can be 2000 times greater than yields from forested areas.

2. Reducing Impervious Surfaces: Impervious surfaces (roads, roofs, footpaths) prevent the passage of water through their surface into the ground. Water must then be transported across the surface to a point of discharge. Roof down-drains may be directly connected to streets or reticulation systems when providing splash blocks and discharging the water across grass and away from impervious surfaces allows for a greater amount of water to infiltrate into the ground. Education of home owners is very important regarding their awareness and responsibility to ensure continued function of these practices. Community education and involvement is integral if programme implementation is to be effective.
3. Constructing Biofiltration Practices: The use of vegetative swales and buffer strips can provide a significant water quality benefit in addition to reducing the total volume of stormwater runoff. The primary processes involved in their performance are filtering of pollutants contained in stormwater runoff and infiltration of runoff into the ground. Even with kerbs being needed to prevent traffic movement off paved surfaces, kerb cuts or openings can be placed in the kerb to allow water to pass off the paved surface into a biofiltration facility.
4. Creating Natural Areas: In many site development situations, the predevelopment condition may be paddock or highly modified hydrological condition. Creation of a natural area as open space would have significant stormwater management benefits for both water quantity and water quality. The area, if well designed and constructed, could become an attractive amenity to a community and enhance the value of the properties.
5. Clustering Development: How a site is developed and to what degree the entire site must be utilised will have a significant impact on sediments and stormwater runoff from the site. Conventional land development encourages sprawl, while other approaches to land development can provide significant sediment control and stormwater benefits. Compact development encourages smaller lots on a portion of a site, allowing the same site density, but leaving more site area in open space or disturbing less of the natural ground cover. Open ground is shared rather than being largely private backyards. This development can provide for protection of site natural areas, while at the same time reducing total site imperviousness by reducing the road area.

PONDS

Ponds can be of two types: (1) Dry ponds which temporarily store stormwater runoff to control the peak rate of discharge and provide water quality treatment, primarily using extended detention. These ponds are typically dry between storm events. (2) Wet ponds, which have a permanent standing pool of water. They provide water quality through the permanent pond and in conjunction with detention provided through the additional temporary storage provided when the pond water level rises above the permanent pond level. They can also provide peak flow attenuation for flood protection and downstream channel protection in conjunction with extended detention. As an added benefit, they are visually appealing.



Dry ponds are not normally recommended for stormwater management systems, due to lower water quality performance than wet ponds, ongoing maintenance problems and less aesthetic appeal than wet ponds.

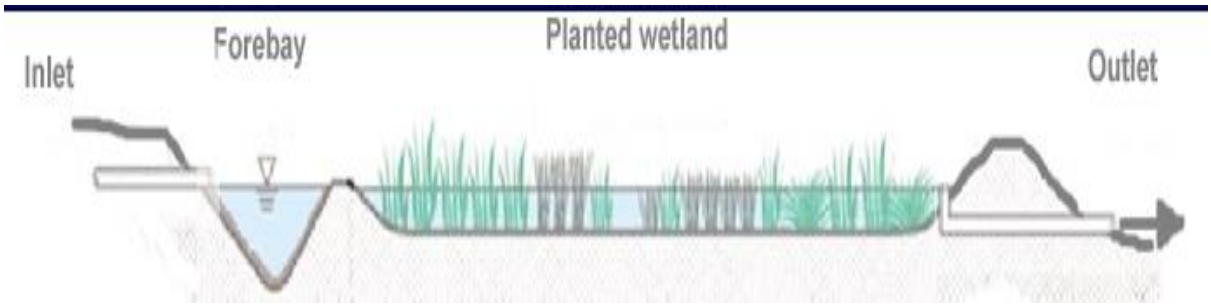
Wet ponds are primarily for large lots, including some industrial sites, or to serve several lots. They can be used upstream of wetlands to provide removal of coarse material. They require a significant contributing catchment area (2 to 3 hectares in the Auckland region) or continuous base flow to maintain a permanent pool of water. Ponds are not suitable on steep sites or on fill unless approved through geotechnical assessment. They may require a liner in porous soils to maintain a permanent water pool. They also may require civil and geotechnical engineering expertise for design, construction and maintenance.

Ponds may not be suitable if receiving water is temperature sensitive due to a warming of pond surface area and there is a need to address potential mosquito breeding both in design and operation and maintenance. Ponds can also have adverse effects if constructed on perennial streams due to impedance of fish passage and temperature effects on downstream receiving water. Safety issues are always required to be addressed when considering the construction of ponds.

WETLANDS

There are two general types of constructed wetlands, surface flow and subsurface flow. Surface flow wetlands mimic natural wetlands and are shallow open ponds with permanent water and submerged and emergent plants. Subsurface flow wetlands include a gravel substrate, which acts as a filter. They are prone to blockage and have high maintenance requirements. The following detailed discussion refers only to surface flow wetlands.

Stormwater flowing through a wetland provides treatment by a variety of mechanisms including settling, filtration, biological degradation, microbial uptake, adsorption, volatilisation and plant uptake. Wetlands can also provide peak glow attenuation and extended detention and landscape and wildlife habitat benefit. Wetlands have a permanent pool ponding volume and an associated permanent pool water level. When stormwater inflows occur, the wetland water level rises above the permanent pool level and the additional storage associated with this rise in water level achieves peak flow attenuation and if the wetland is appropriately designed, provides extended detention.



Wetlands can treat runoff from impermeable hardstand ground surfaces in commercial, residential and some industrial areas, including parking lot runoff. They are well suited for removal of sub 100-micron particulate matter and dissolved chemicals.

Expected contaminant removal rates are as follows:

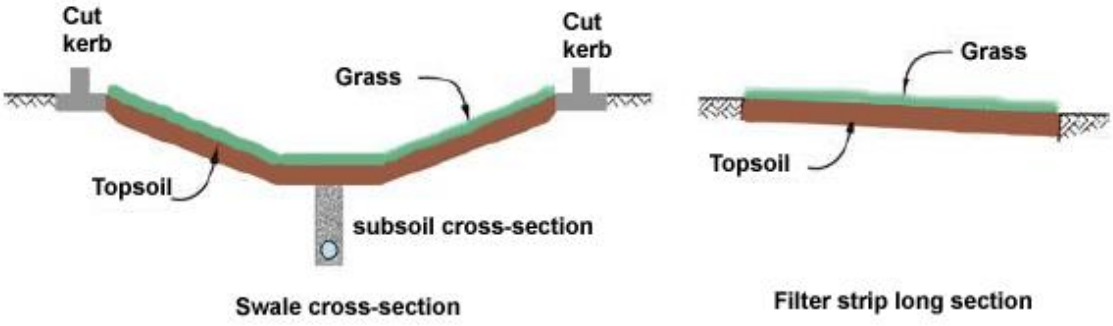
Sediment	60 to 80%
Trace metals	40 to 80%
Total phosphorus	40 to 805
Total nitrogen	20 to 60%
BOD	20 to 40%
Petroleum hydrocarbons	87%
Bacteria	60 to 100%

Wetlands can remove organic contaminants through adsorption, volatilisation, photosynthesis and biotic/abiotic degradation and can provide significant peak flow reduction and associated flood protection. As well as providing aesthetic benefits, wetlands can provide extended detention and thus can be used for stream channel protection.

The creation of wetlands requires a summer base flow or minimum catchment size to prevent the wetlands drying out in summer. The minimum catchment size for Auckland area is recommended to be 1 ha. It also requires an impermeable soil base or liner to prevent leakage and potential groundwater contamination. Wetlands require relatively flat, stable ground with a maximum ground slope of 5%. There must be adequate clearance to existing utilities and to site boundaries. The location of the piped outlet must discharge to pipe reticulation or surface dispersal.

SWALE/FILTER STRIPS

These devices use vegetation in conjunction with slow and shallow depth of flow to achieve treatment of stormwater. Removal of contaminants is achieved by a combination of filtration, adsorption and biological uptake. Vegetation also decreases flow velocity and allows settlement of particulates. The principal difference between swales and filter strips is that swales accept concentrated flow while filter strips accept distributed or sheet flow.



Swales and filter strips can treat runoff from impermeable hardstand ground surfaces in commercial, residential and industrial areas including roads and parking lot runoff. They provide aesthetic benefit.

Swales and filter strips are not able to treat sediment-laden water from construction sites. They must be installed after site works are complete and contributing areas have been fully stabilised to prevent excess sediment loading. Swale and filter strips provide significant peak flow or volume control. Expected contaminant removal rates for swales/filter strips are as follows:

Suspended solids	81%
Metals (cadmium, copper, zinc, lead)	50 to 90%
Total phosphorus	9%
Nitrate	38%
Oxygen demanding substances	67%
Hydrocarbons	62%

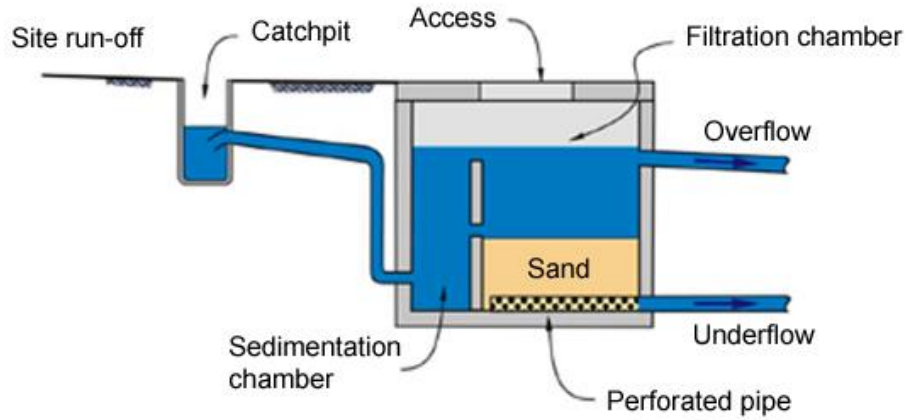
Swales and filters can be located in median strips in carparks or substitute for kerb and gutter at the side of the roads, with kerb cuts to allow entry of runoff. They may also be located adjacent to site boundaries. For impermeable subsoils, the minimum longitudinal slope should be 0.5% to avoid pugging of soil. For soil without erosion protection or check dams the maximum longitudinal slope should be 5%.

Swales require a minimum length of 30m. The maximum drainage flow path to a filter strip is 50m. The maximum longitudinal slope of a contributing slope to a filter strip is 5% unless energy dissipation is provided. The maximum lateral slope of a filter strip is 2%.

Swales require areas open to the sun, avoiding or minimising shading (to encourage vegetation growth). The device catchment area can be no more than 4 ha (ARC TP10). The time of concentration not to exceed 10 minutes. Care must be taken to ensure adequate subsoil drainage is provided in situations where additional infiltration into the subsurface may cause problems. For example, adjacent to parking areas or roads where infiltrating water may weaken the pavement. Use cut kerbs or other measures to prevent vehicles driving on swales.

MEDIA FILTERS

Filters are structures in which a bed of material such as sand traps and accumulates contaminants. Filters can include those with inert media in which only particulate pollutants are removed and those with absorptive media, which remove dissolved contaminants. Filters usually include a sedimentation unit to reduce sediment loads to the filter.



Filters are able to treat runoff from impermeable hardstand ground surfaces in commercial, residential and industrial areas. They provide significant peak flow or volume control. The most common filter is the sand filter. Expected contaminant removal rates for sand filters are as follows (ARC TP10, EPA 1999a):

Suspended solids	>75%
Metals (copper, zinc, lead) (total)	>75%
Total phosphorus	33%
Total nitrogen	21%
Biochemical oxygen demand	70%
Hydrocarbons	>75%

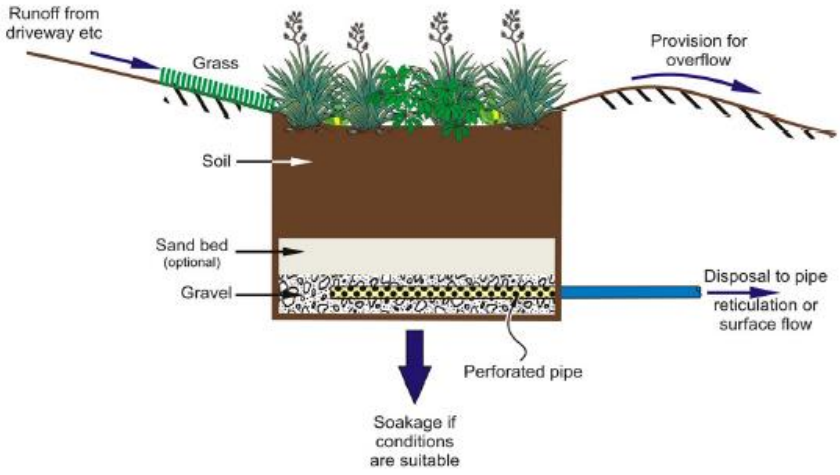
Alternative filter media include iron oxide coated sand, iron wool, polypropylene fabric, leaf compost, peat, sphagnum moss, limestone, waste wood fibre, bottom ash, perlite, zeolite, iron oxide coated sand, granular polymer, iron amended resin and proprietary filters with a variety of media, which can treat a variety of contaminants both particulate and dissolved

Specific applications include commercial and industrial parking areas or yards, service stations, high density residential housing and on line or off-line location. Filter media are suitable for retrofits and can be constructed completely underground with surface access lids or can be constructed using a pond or other structure that is open at the surface. The device catchment area is to be no more than 4 ha (ARC TP10).

RAINGARDENS

Also known as bio retention areas or stormwater planters, raingardens are an in-ground filter, with the upper surface of the filter medium exposed to allow infiltration of collected stormwater ponded on it. The filter medium is a specially selected soil/sand mix with a surface mulch or organic layer. Small, shallow-rooting plants protect this medium (the 'soil medium') and provide some evapotranspiration.

Stormwater is conveyed by surface flow to the raingarden, ponds on the surface and slowly infiltrates through the planting medium. Treatment is provided by filtration in the soil medium together with bio retention provided by the plants and organic/mulch layer. After infiltrating through the soil medium, water is discharged either by infiltration to underlying soil, or is collected in a pipe and discharged to a reticulated service or surface disposal.



Raingardens can treat runoff from impermeable hardstand ground surfaces in commercial, residential and industrial areas, including parking lot runoff. Expected contaminant removal rates are as follows (ARC TP10, EPA 1999c):

Sediment	90%
Metals (copper, zinc, lead)	93 to 98%
Total phosphorus	70 to 83%
Total kjeldahl nitrogen	68 to 80%
Organics	90%
Bacteria	90%
Hydrocarbons	>75%

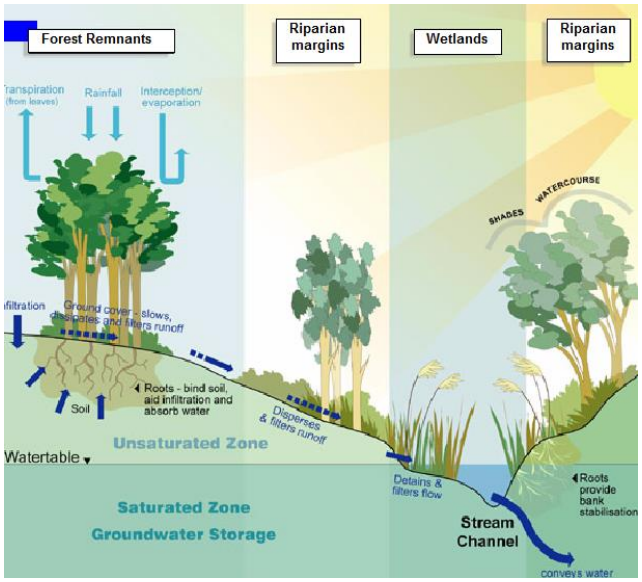
Raingardens may be able to be used for flow attenuation and extended detention thus may be used for stream channel protection. They provide aesthetic benefit.

Raingardens are not able to treat sediment-laden water from construction sites. They must be installed after site works are complete and contributing areas have been fully stabilised in order to prevent excess sediment loading.

They can be located in median strips and islands with a maximum ground slope of 20% (11°) from considerations of construction practicality. Unstable land must be avoided and a minimum separation distance of 600 mm between the bottom of the device and the seasonably high-water table. There must be adequate clearance to existing utilities and to site boundaries and inflow should be via shallow flow over grass, to prevent scour of the raingarden surface. An overland flow downhill path must be provided to avoid scour damage or flood damage to assets. The minimum head required between the inlet and outlet is 1.5m. The location of the piped outlet must discharge to pipe reticulation or surface dispersal. The device catchment area is to be no more than 1000 m^2.

RIPARIAN BUFFERS

Provided they are sufficiently wide, and not so steep that surface water flowing through them channelizes, riparian margins can act as surface runoff filters. In Auckland's variable stream margin settings, their greatest benefit is often enhancement of the local environment for streams, and reducing erosion of streambanks.

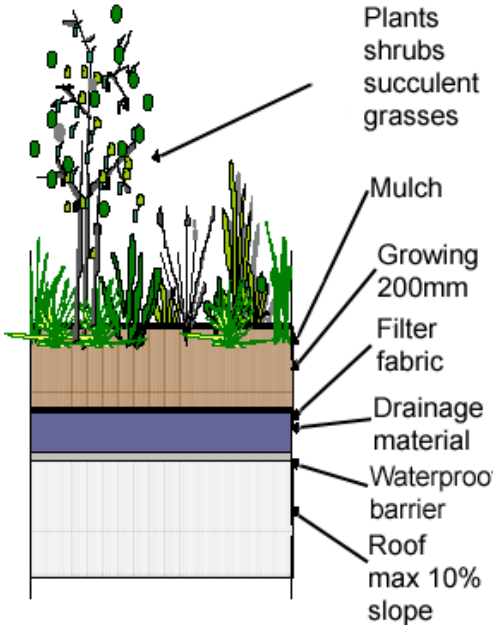


ROOF GARDENS

A roof garden is a roof with a soil and vegetation cover, used in place of a conventional roof to achieve quantity and quality control. In many ways, it is similar to a rain garden, but with negligible water storage capacity. It is also known by the terms "green roof" and eco-roof". It has three key features: (1) the roof structure is overlain by a waterproof membrane, (2) the soil, with an underlying drainage system (proprietary), supports vegetation, and (3) flow attenuation is achieved by evapotranspiration and soil capture.

Although quite novel in its concept, the roof garden is not only effective, but can also serve as an attractive landscaping feature (e.g. where viewable from adjacent deck or roof).

Roof gardens act like pervious areas, although there is no net loss of water to soil infiltration. They can replicate the "greenfield" regime with respect to peak flows but not flow volume. Correspondingly, there is not generally a need to analyse their peak flow control performance. Given that a roof garden only controls the roof runoff, there may be a need to use it in conjunction with another on-site device (eg controlling site runoff) to meet the overall performance standard.



Project Twin Streams

In a neighbouring catchment, Project Twin Streams[961] was a test bed for collaborative innovation in addressing stormwater management problems. The aim was to achieve sustainable development through integrated catchment management, addressing population growth, congestion, polluted waters, smog, and degraded ecosystems. The objectives were to improve water quality and help to secure the future health of the Waitemata Harbour and also to manage flood risks, including the risks associated with climate change. The project wished to establish a new New Zealand standard for urban community responsibility and environmental leadership. The project managers also wished to create a socially and economically beneficial culture of collective learning and technological innovation.

OBJECTIVES	ACTIONS TO BE EVALUATED
Restore the Mauri of the waterways and the related environment.	Work to reduce wastewater overflows and restore water quality. Improve habitat for native fish.
Protect and improve riparian and aquatic ecosystems and land stability in the catchment.	Remove weeds. Plant stream edges. Install fish ladders where necessary. Install devices to improve quality of stormwater. Encourage less vehicle use, and cleaner vehicle use. Stabilise stream hydrology. Regularly monitor progress against

[961] The Twin Streams catchment links the Waitakere Ranges in the west, to the mid-Waitemata Harbour in the east, via the Henderson Creek estuary. The foothills of the Ranges are currently zoned for countryside living. The boundary of this area with the urban lowland area coincides with the Auckland region Metropolitan Urban Limit (MUL). The area is a testbed for strategies for accommodating growth within the region.

	baselines.
Protect buildings and properties from flooding, and provide for ongoing sustainable development in accordance with the District Plan.	Purchase of flood-prone properties. Run water conservation and re-use campaigns. Encourage more planting in the catchment. Work with structure plan landowners to achieve appropriate planting and development.
Develop a framework for decision-making and action in the catchment, that includes and engages the community, Council, and other agencies.	Develop a steering Group with community membership. Support and encourage community nurseries. Rivercare and clean-up groups. Hold events, competitions and celebrations. Provide education and information, work with schools, and business. Operate a model of community engagement that devolves responsibility for aspects of the Twin Streams programme, together with funding. Work with Auckland Regional Council's "Big Clean Up" campaign. Monitor the level of community engagement.
Develop environmental skills in the community and improve access to skills, to facilitate action.	Run and support training opportunities for community members. Encourage sharing of skills within the community. Undertake and/or encourage setting up effective communication channels for environmental skills and knowledge.
Protect and improve the amenity and landscape heritage and green network values, public access and connectivity in the catchment.	Build bridges, walkways and cycle ways. Protect and maintain archaeological and other heritage. Develop public access to and along the streams and coast.
Provide regional benefits for the Waitemata harbour receiving environment and a useful model and demonstration project for achieving integrated catchment management.	Document and publicise the Twin Streams process and methodology. Hold workshops and seminars and develop papers for conferences. Encourage more planting in the catchment. Keep the website updated.

The aim was to lessen the need for pipes, channels, impervious surfaces, quick-fix engineered solutions, high-impact urban designs, development of stream margins, reliance on cars, ignorance, apathy and shifted responsibility and waste of all kinds. Instead, there would be more restored bush and stream margins, wetlands, swales, on-site stormwater

solutions, use of soil and plants to clean and retain water, water conservation, ecologically-based, lower impact urban designs and community awareness, responsibility, care and action.

Project Twin Streams took an integrated, ecosystem-based approach to management of wastewater, stormwater and water supply. It worked in partnership with iwi, the community and other agencies and utilised decision-making processes that took account of social, economic, environmental and cultural outcomes. The people and groups involved included Council, environmental NGO's, iwi, business, education community, other groups (especially Asian and Pacific Islanders), sponsors (Ecowater, WCC Parks), funding agencies (Council, Infrastructure Auckland, other), contractors (technical, works), participating groups (schools, scouts, iwi, Probus, residents), collaborators (tertiary education agencies, research agencies, other collaborators).

In 2013, Project Twin Streams celebrated its tenth anniversary. During the years it has been in existence, the project has restored 56 kms of stream banks and created walk and cycleways, works of art, community gardens, a Maori medicinal garden, and a flax weaving garden. The success of the project was measured by several factors including active participation of tangata whenua in decision-making structures; the recognition of more pollution-sensitive fish found in the Oratia and Opanuku streams; riparian margins restored in native vegetation; more native birds counted in the riparian margins; and public access provided along the whole length of the Oratia and Opanuku streams from the sea to the Waitakere Ranges. There are at least ten strong, independent, active, knowledgeable and skilled community groups in the Twin Streams catchment set up to assist environmental improvement. Other territorial authorities now utilise the Twin Streams philosophy, structure and methodology in their catchment management.

Chapter Eleven

Rehabilitation & Restoration of the Whau

The rehabilitation and restoration of the Whau is a rewarding, yet very complex and onerous task. Thorough planning is an absolute as no one component can be considered without considering the needs of the entire ecosystem. Rebuilding ecosystems is therefore a challenging process. Ecosystems are continually evolving and interacting. They consist of communities of living things, including people and the physical environment with which they interact. Each component of the community is interconnected and all components are dependent on one another through food chains and nutrient cycles. An ecosystem's success very much depends on how it functions as a whole and on how well individual components function separately. An ecosystem's complexity and dynamism contributes to its productivity, resilience and stability, but also makes it more difficult to manage.

An Ecosystem Approach to Rehabilitating the Whau

Many needs of the Whau must be met before the area can regain resemblance to its former character, including the needs of the stream itself, the needs of birdlife, small creatures, shrubs and trees. These needs overlap and are reliant upon one another for ecosystem survival. For example, streams need shade to form a continuous edge of overhanging plants such as long grasses or native trees and shrubs. The shade keeps the water cool for stream life. Planting banks with suitable vegetation both binds the banks together and absorbs water from the soil which will prevent future slips. Water can be filtered through surface vegetation or sand filters before entering the stream, thus lowering amounts of sediment, nutrients and pollution. A buffer zone of native vegetation to stabilise the ground above the stream bank will protect the streamside vegetation, and provide more habitat for birds, skinks and other wildlife. The planting of invasive weeds should be avoided as they smother the native vegetation over time, endangering the stability of the whole ecosystem. Stream bottoms should not be concreted, bulldozed, straightened or filled, thus allowing the soil layers to remain well filtered and allowing ground water to seep in. Loose rocks, leaves and twigs (on the banks, in the water, under the trees and shrubs) will provide homes and food for water creatures. Birds need food such as insects, fish, berries and nectar (depending on what species of bird and the time of year). Loose bark, soft ground and rotten branches provide homes for insects the birds eat. They also require perching sites, shade and cover from which to look for food and to build their nests. Pests that prey on birds, such as possums should be removed. Small creatures such as lizards and insects need rotten wood, loose rocks, soft ground, mulch and loose leaves on the ground to live in, burrow through, and to find shelter in. They also require continuous passageways to move from one bush

area to another. Trees and shrubs require fertile soil (soil mixed with leaf litter that has been broken down to form humus). An abundance of moisture in the ground is necessary along with other plants as close neighbours to help with shelter, shading the ground, stopping the soil drying out, pollinating each other, and providing places for new seedlings to grow. The trees and shrubs should always be native plants as they provide a food source and habitat for native birds and other wildlife.[962]

It is not only the needs of the river itself that must be met. The needs of the human community must be considered also. An ecosystem approach combines the ecological protection and restoration of the Whau with the needs of the human community to strengthen the connections between economic prosperity and environmental wellbeing. Social and economic sustainability are dependent on ecological sustainability.

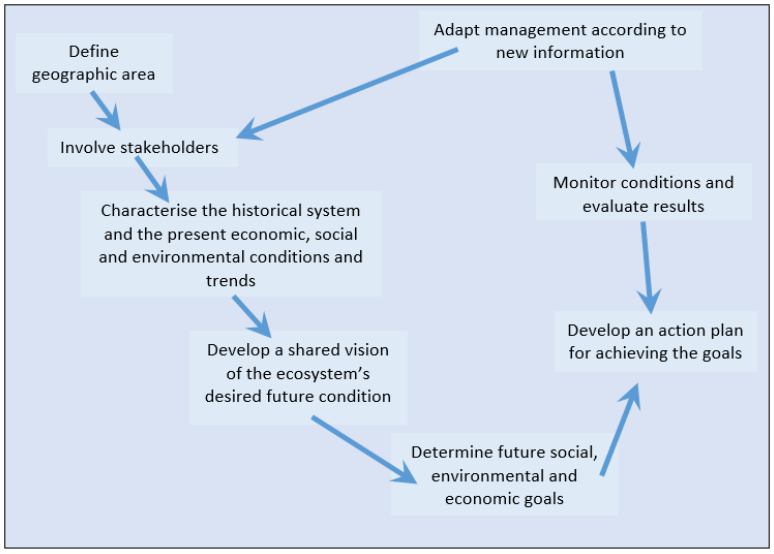
Regional authorities, organisations and individuals from the Whau Catchment area ardently share this ecosystem approach to restoration and rehabilitation. Together they envision a future where people understand how their own futures are interwoven with the future of the aquatic ecosystems on their doorsteps. They foresee the dumping of rubbish on the margins of streams and wetlands ceasing as communities tune in to the ecological and social value of these systems. These conservationists have proposed and planned a network of walkways that follow riparian margins of streams to join communities together and to encourage a sense of pride in the Whau (this process has already encountered much success e.g. the Kurt Brehmer Walkway which opened in 2002 and the present Te Whau Pathway project which is well underway). They dream of a time when riparian margins of backyard streams will be ecologically restored and become a source of community pride and involvement. Discharge of stormwater pipes directly into streams will become uncommon, and stormwater will enter aquatic systems only after passing through a water quality treatment device that regulates flows and removes pollutants. Restored vegetation in

[962] Native plants are simply those plants that grew, evolved or migrated here without the help from people. Nearly 80 percent of New Zealand's native plants live nowhere else in the world, and some are facing extinction. Weeds should be removed as they tend to take over natural systems.

riparian margins will provide the food sources, clean water inputs, shading and habitat for invertebrates that will support healthy aquatic ecosystems.

Integrated Catchment Management (ICM)

To ensure these visions become a reality requires a coordinated approach throughout the catchment. Dealing with problems at their source involves changing people's behaviour, which in turn requires that people become more directly involved with the environment and the solutions to ecological problems. This process of coordinated change with high levels of community participation is known as integrated catchment management (ICM). Integrated catchment management addresses problems whose causes are scattered throughout the catchment. Solutions must therefore be spread throughout the catchment and coordinated to achieve wider objectives.



Elements of the Ecosystem Approach

There are many important elements to consider in an ecosystem approach.

(1) Involvement of the local community. Examples from across the globe make it clear that local communities are often the best ecosystem managers. Their knowledge of the ecosystem and their direct stake in its health can be important assets that improve the chances for long-term stewardship. Involving local communities in ecosystem management can also yield a more equitable distribution of the benefits and costs of ecosystem use.

(2) Integrating urban planning with ecosystem needs. Urbanisation and urban consumers are among the most significant pressures on global ecosystems. Ecosystem management should be at the centre of urban planning and management, rather than at the periphery of concerns. Although gaps in knowledge may deter an outcome-focused planning approach, adaptive management should be used to alter goals and objectives as new knowledge becomes available.

(3) Informed public discussion on what is wanted and needed from ecosystems, how the benefits should be distributed, and what can be tolerated in costs and trade-offs.

(4) Valuing ecosystem services explicitly. Undervaluing ecosystem services has been one of the main causes behind short-sighted planning and environmental management in the past. Communities, governments, and industries must assign more accurate values to ecosystem services, so these can be factored into planning processes.
(5) Parks, protected areas and ecological corridors must fit within an overall strategy of landscape management that includes compatible human activities. In some instances, these sites may be able to be physically linked through landscape corridors so that the original spatial character of the ecosystem can continue to function.
(6) The ecosystem approach encourages efforts towards ecosystem restoration while maintaining a concern about how much urban degradation can be addressed through restoration efforts.
(7) Detailed knowledge of ecosystems. Managing ecosystems effectively requires knowing how they function and what their current condition is. This knowledge enables communities to judge the ecosystems productive capacity, to see the trade-offs being made through managing them, and to assess the long-term consequences of those trade-offs.
(8) Social and economic benefits accompany ecosystem health. An ecosystem approach views production of goods and services as the natural product of a healthy ecosystem, not as an end in itself. Therefore, management is not successful unless it preserves or increases the capacity of an ecosystem to produce the desired benefits in the future.
(9) Including people. The ecosystem approach explicitly links human needs to the biological capacity of ecosystems to fulfil social, economic and environmental needs. Although it recognises ecosystem processes and biological thresholds, it acknowledges an appropriate place for human modification of ecosystems.
(10) Collaboration. The holistic nature of the ecosystem approach demands contributions from multiple disciplines, and collaboration between management areas that might otherwise not be brought together. It challenges traditional definitions of problem boundaries, and leads to involvement of multiple agencies and stakeholders, leading inevitably to challenges to established paradigms and ultimately a shared view.
(11) Long term view. Although concerned about current ecosystem processes, the ecosystem approach sees them in the larger frame of landscapes and decades, working across a variety of scales and time dimensions.
(12) An integrated approach. The ecosystem approach considers the widest range of catchment outcomes, thus reducing the possibility of unforeseen consequences that could result from policies and plans focusing on a few key outcome areas. In a traditionally segmented approach, single issues may dominate catchment planning. The ecosystem approach, in contrast, provides a basis for making informed, sustainable trade-offs.

Whau River Conservation and Rehabilitation

Whau River Catchment Trust along with Friends of the Whau members and volunteers have vigilantly focused on improving the health of the Whau River following the ecosystems

approach. For example, at one of the very first planting sessions held on International Earth Day, in April 2000, Lyn Poyner (then FOW co-convenor) stated that, "improving the health of the river doesn't just rely on the quality of the water, or centre around the Whau. …it is part of a programme of weed clearance and tree planting throughout the Whau Catchment area."[963] Karaka, puka, manuka, and pohutukawa were planted during this early practical session. These native trees are important for aiding in enticing back the birds and other river bank life. The trees also provide shelter to lower the temperature of the water which, in turn, encourages the return of native water life and fish. The trees act to bind river banks together, prevent silt build up, filter out toxins from the soil and prevent weeds from spreading.[964]

Many local businesses have also been involved in weeding and planting sessions for many years. For example, in June 2000, Avondale company Novartis supplied 120 trees and enthusiastic employees to help plant at Olympic Park. A challenge was then sent out to other local companies to take part in river clean-ups and planting sessions.[965] Ever since, a multitude of local businesses have taken part in practical sessions including tree planting, mulching and river clean-ups. Parks and reserves in the Whau area have received particular attention over the past fifteen years or so. Examples of a small portion of the work carried out is detailed below.

Kurt Brehmer Walkway

Located on the western margin of Rosebank Peninsula, Kurt Brehmer Walkway has become a key site for FOW's efforts to combine community involvement with ecological rehabilitation and education. The walkway is named after Kurt Brehmer, a local resident, and supporter of FOW, who had a long history of involvement in environmental and conservation issues. The work on the walkway arose after removal of wattles that were potential host plants for the Australian Painted Apple Moth (PAM) pest. The PAM was a significant threat to New Zealand's biosecurity, and eradication involved removal of its evident preferred hosts, as well as an extensive programme of aerial spraying along the margins of the Whau River, and elsewhere. In 2003 samples were taken at four quadrats (small areas of habitat, selected at random to act as samples for assessing the local distribution of plants or animals) along the walkway. The quadrats were placed specifically to sample different vegetation zones.

During the months of March and April 2004 pest control was undertaken. Traps were laid out along the walkway targeting possums, hedgehogs and rats. Fortunately, no birds were harmed during the trapping process. Fifty-five possums and two rats were captured as a result. Continued pest control is desirable to prevent infestation of the planted area by possums or other pests. Predator control and monitoring is ongoing.

---

[963] *Western Leader,* 20 April, 2000, p8.
[964] Ibid.
[965] *Western Leader,* 16 June, 2000.

In February 2016, staff from Bunnings volunteered to help keep native plants in good shape (part of the walkway is directly below Bunnings Trade premises). This direct connection aids in forging a relationship between business and the local environment whereby staff get out on a regular basis to support the work of the local community in keeping the ecosystem healthy and sustainable.

Another example of supporting the regeneration of the local ecosystem is the planting of native nettles along the walkway. The nettles are important larval food for the red and yellow admiral butterflies which are now regularly seen flying amongst them. It is hopeful that by planting native nettles numbers of these species will grow.

In March 2016, Dr Grace Hall (Arachnologist/Entomologist) from Landcare Research led a walk along the Kurt Brehmer Walkway to discover spiders and other creatures that only come out at night. A bat detector was also on hand! In May 2016, a 'fabulous fungal foray' was held. Dr Peter Buchanan, mycologist at Landcare Research and volunteers discovered many fungal species along the walkway.

For the last two years a section of the Kurt Brehmer Walkway has been closed off due to a massive slip. However, with permission from private landowners and Auckland Council, a team from Friends of the Whau and the Green S Welfare Force planted the area up. For safety, fences were erected around the hazardous area of slumping and cracks. FOW members and Friends of the Western Buddhist Order helped to lay the plants. Over two weekends, the area was planted with species best suited to slope stabilisation.

This area has been successfully restored over the last several years but ongoing maintenance with the help of eager volunteers is the key to overall success in rehabilitation of these areas.

Olympic Park Revegetation

The primary objective of this project was to restore the riparian margin of the Avondale Stream and its confluence with the Whau River within the passive recreational areas of Olympic Park. Restoration plantings representative of the original ecosystem vegetation in combination with various education and interpretation nodes provided an ecological linkage with the surrounding environment and improved indigenous habitat and ecosystem functioning. The project also provided primary stormwater treatment through soft engineering solutions using low impact design techniques. It succeeded in reducing streambank erosion, reduced flooding and improved the quality of the water. The project provided safe public access, improved the amenity value for park users and promoted multiple usage. Throughout the process opportunities arose for community participation (celebrating local Maori and European history and culture), creating a platform for community awareness on ecosystem values and functions whilst creating a community ownership and pride towards the Park.

The site was divided into four planting zones based on the land's contour and the existing vegetative cover. The planting has recreated riparian and lowland/broadleaf forest ecosystems that will reconnect the landscape. Zone A incorporated stream margins and

terraces, with canopy trees selected to reflect the original treeline form and dense plantings of grasses and sedges to buffer the stream edge. Zone B was situated the annual floodplain. The existing community plantings were supplemented with appropriate pioneer and climax species. Zone C consisted of path margins which were planted with mostly amenity plantings (specimen trees) and incorporated interpretative signage and lookout points. Zone D entailed the upper bank with plant selection imitating natural succession. Initial plantings consisted of manuka and kanuka interspersed with seedling shrub and canopy species suited to the drier conditions.

In 2007, Olympic Park was awarded the Outstanding Park Award by the New Zealand Recreation Association (NZEA). The park offers a state of the art playground, large open spaces and sports facilities.[966]

Busby Street Revegetation

One objective of this project is the revegetation of the 'paper road' end of Busby Street, Blockhouse Bay with species appropriate to the original warm lowlands forest ecosystem. A second objective is to improve public access and provide interpretation of revegetation stages. The benefits of restoration plantings include providing ecological links with the surrounding environment, improving indigenous habitat and ecosystem functioning, reducing streambank erosion, and improving water quality. Other benefits include providing safe public access, improving amenity value for park users (with multiple uses), and the creation of a pedestrian access way to McWhirter Road via a footbridge and to Wolverton Street by a path on the 6m contour.

The site was divided into five planting zones based on the land's contour and the existing vegetative cover. Zone 1 and 2 consisted of stream margins and terraces and trees were planted in the first year in final spacing and composition. Zones 3 to 5 entailed the banks which were planted with a nurse crop of 1-year-old ruderal species (manuka and kanuka) to mimic natural revegetation. These plants fix nitrogen and improve the soil fertility, stabilise the banks and attract seed carrying birds. After approximately two years, the nurse crop was thinned by half and interplanted with seral and climax species at double their final spacing.

Throughout the process, there has been active community participation and a heightened awareness of ecosystem values and functions.

Shadbolt Park Revegetation

The main objective of this project is to restore a representation of the original ecosystem vegetation within the passive recreation areas of Shadbolt Park. The project was developed in six phases. Phase One consisted of initial planting which provided an ecological linkage with increased wetland areas. Phase Two entailed a bush picnic area comprising a semi-woodland with open clearings for barbeque facilities and picnic tables. Phase Three involved the wetland/swale areas. These areas provided stormwater treatment. Phase Four provided another ecological link and sports field areas. Evergreen natives were planted amongst

[966] Auckland Council Parks, *Olympic Park.* Sourced online at http://www.aucklandcouncil.govt.nz/en/parksfacilities/premierparks/pages/olympic.aspx.

existing deciduous trees to provide further reconnection of the landscape. Phase Five was the car park area, redesigned using 'low impact methods'. The final phase entailed the removal of undesirable species and pines from the forested area and revegetation with lowland broadleaf species.

Phase One planting was divided into six zones based on the land's contour and existing vegetation cover. Zone A (amenity) were mostly specimen trees such as Pohutukawa. Zone B (grasses) consisted of existing species such as cutty grass and flax. Zone C (shrubs) entailed the planting of forest species, to supplement existing species. Zone D (riparian and path margins) consisted of dense plantings of grasses and sedges to buffer the stream edge from periodic inundations. Zone E (lower terrace revegetation) included grasses interspersed with kahikatea and tanekaha. Zone F (upper bank revegetation) was planted over more than one season and imitated natural succession.

The Whau River Catchment Trust and FOW have also been involved with many other community restoration and revegetation projects, including but not limited to Ken Maunder Park, Archibald Park, Craigavon Park, Brains Park, McLeod Park, Hamel Reserve, Tony Segedin Park, Miranda Reserve, and Rosebank Peninsula Coastal Restoration Project.

Whau River Clean-up

The history of the Whau river clean-up goes back to 1979 and the Scouts who were involved with the Kelston West Sea Scout Troop. The Troop was based in Albert Road in Kelston, and comprised a total of 48 Scouts and 4 adult Troop Leaders. There were five (youth) Patrol Leaders. The Patrol Leaders suggested that the troop undertake a Conservation Badge based on the newly completed park on Archibald Road. This reserve was once the local tip site and landfill. To undertake this project, the Patrol Leaders worked as a team with the Adult Leaders and the Group and Club Leaders. They arranged with the then Waitemata County Council to pick up the rubbish that they collected and placed on the edge of the reserve.

Clean up on river

By SARAH LAWRENCE

Hundreds of Scouts will be pulling rubbish from the Whau River while paddling their kayaks on Saturday.

The Archibald Park clean up day will see packs of scouts from Queen St to Kaipara fishing shopping trolleys, tyres and litter from the river.

The day is organised by the Friends of the Whau and members of the public are invited along to help.

Friends secretary Jan Weaver says it's part of community efforts to restore the health to the river and the land backing on to it.

Ms Weaver says the cleanup will go ahead rain or shine and gloves for volunteers will be provided.

Pedestrian access to the park is from the canal to Ash St boardwalks on the Auckland side and the Ken Maunder Park at the end of Archibald Rd in Waitakere.

The cleanup will start from 9am

Western Leader,
Friday May 26, 2000

The scouts undertook the project over a period of two weeks in the late summer months of daylight saving. The Troop would gather on the reserve at the Beaubank Road car park and walk slowly up the foreshore lifting out the plastic, glass, wood and paper that was washed up the river. When a large obstacle was encountered it was tied to a vehicle and slowly pulled out of the river onto the bank.

Between 1978 and 1981 several tonnes of rubbish were extracted. Groups that were involved in the early days were Kelston West, New Lynn, Laingholm, St Francis, Glen Eden and Titirangi, and the Kelston Girl Guides. In the 1980's Oratia joined the fold. In the late 1990s, Western Bays, Hawke, Owairaka, Swanson, and Edmonton were added. From 1979 to 2004, the clean-up was always based on Archibald Park and up to New Lynn. Since 2005, the emphasis has been on Archibald Park to Te Atatu. By 2005, more than 150 tonnes of rubbish had been extracted.

Cleaners thanked

We wish to express our gratitude to all the volunteers who participated in our recent Whau River cleanup. It was an extremely successful day, we removed nearly four tonnes of rubbish and everyone enjoyed themselves, safely.

Our "Golden Shopping Trolley" is jointly awarded to:

The local residents who took up the challenge.

Auckland Scouting for "Scout power", your young members are a credit to our community.

Metropolitan Waste Ltd for the skips and comic relief by Ian.

Waitakere Ladies Marching Team for the delicious sausage sizzle.

ATC Tools NZ Ltd for the Simple Green cleaning products to tackle the mud.

And Keep Waitakere Beautiful, the Waitakere City Council and Auckland City Council for assistance with equipment and organisation.

Thank you to all. We are making this an annual event from next summer and hope to see you again.

JAN WEAVER
Secretary
Friends of the Whau

West Views,Western Leader,
Tuesday June 27,2000

Flotilla Whau

Flotilla Whau has been operating since 2013. It is organised by HOOPLA, a collective of Avondale and New Lynn residents, and is supported by the Whau Local Board. There is a perception by many that the Whau is muddy, dirty and unusable but this event is trying to break down those barriers and help people connect with the river. Clubs such as the New Lynn Sea Scouts and Auckland University Canoe Club as well as private boats, dinghies, and paddle boarders enjoy the opportunity to get out on the river together and experience it from a totally new perspective. Even those without their own water transportation have an opportunity to join the fun by jumping aboard a vessel for an insightful and fun morning on the Whau.

As the many examples expounded in this book have illustrated, the Whau River is a precious taonga that must be cherished and cared for. Since humans first inhabited the area the river has provided an abundance of resources. It has afforded a mode of transportation and provided valuable food resources. It has been a place to enjoy water activities and a place to establish business and industry. Most of all the Whau has been a place to call home for generations of New Zealanders. Now is the time to give back to the Whau – to protect, rehabilitate and sustain its natural beauty. For only by taking great care of the river can we ensure future generations the opportunity of enjoying one of Tamaki Makaurau's treasured taonga.

This book should by no means be the end of enquiry or research on the Whau River. It is merely a starting point for further discussion and an opportunity for more detailed and substantive works to arise.

Appendix

Appendix A

Ways residents can help reduce stormwater pollution of the Whau

Check around the house making sure all drains are being used correctly.

Make sure stormwater from the roof is headed for a stormwater drain.

Used water from sinks, baths and showers should enter the wastewater (sewer) pipes.

Have a raised wall around the wastewater gully trap to keep stormwater runoff from the yard.

Wash vehicles on the grass so the soapy water doesn't run off into the stormwater system. Even if not using detergent, let the gritty water soak into the grass.

When changing car oil, always use drip trays and take the used oil to a service station with a facility for taking the oil (e.g. petrol stations) for recycling.

Wash out paintbrushes in an inside sink.

Wash out acrylic (water-based paint) containers onto the lawn so the water soaks into the ground.

Allow excess paint to dry and then place it in the bin.

Allow used brush cleaners to evaporate.

Avoid painting outside when it might rain.

Dispose of all dry paint flakes, sanding dust and spilt paint into your rubbish bin.

When water blasting the house, try to make the water runoff into the garden.

When doing concreting, don't let ANY wash water flow into the stormwater system – direct it all to the lawn or garden. This is a major cause of pollution from private properties. In 1999, there were several major fish kills in the area linked to cement being washed into our streams.

Take any unused household chemicals to a hazardous waste collection facility. Tip water containing cleaners into the laundry tub or the gulley trap.

Don't dump grass clippings and garden wastes or food scraps near the stream or river. Many weeds can sprout and spread from dumped garden wastes leading to a huge problem. Either compost it properly away from waterways, or dispose of it through the household refuse collection system. Take weeds to the local transfer station, or have them collected by a recycling service.

Sediment from a normal short cut lawn can measure half a tonne a year per lawn – so let the grass grow longer – it is healthier for the grass too!

Don't apply fertilisers or herbicides near streams. Don't spray them in wet or windy weather. Apply them at the correct rate so that no excess runs off.

Don't release swimming pool or spa pool water into waterways. Chlorinated or salty water released into streams will harm stream life. The water may also be too hot for the stream life. Let chlorinated water stand for at least seven days before releasing it, to allow the chemicals to vaporise. Let salty water drain onto the lawn.

Under the Resource Management Act, it is a landowner's right (and responsibility) to insist that contractors dispose of all water and wastes properly on the owner's behalf. Make sure they do.

For small scale earthworks, even small piles of soil can add large amounts of sediment to waterways when it rains.

Avoid exposing bare earth in winter when its wet.

Don’t leave large areas bare. Replant as soon as possible.

Cover stockpiles or earth during wet weather.

Trap sediment by filtering muddy runoff through sand or hay bales.

Don’t wash muddy water into the stormwater system.

About 40% of Auckland households own a dog – that’s 200,000 dogs in the region. Each dog produces about 100g of poo each day – collectively, 20 tonnes of poo. Clean up after your dog and dispose of the poo in dry bush areas where it can break down away from waterways.

Use public transport whenever possible. Pollution from vehicles that is washed off roads is huge. Every car on the road contributes to this problem.

Bibliography

BOOKS

Charles Graham, Jones Mark, Waters Marcus with Moodie Sarah. *The Frozen Coast: Sea Kayaking the Antarctic Peninsula,* (Craig Potton Publishing, Nelson, New Zealand, 2004).

Finkelstein David and McCleery Alistair (eds), *The Book History Reader,* (Routledge, London, 2002).

Gittos, Murray B *'Give Us a Pakeha': The 1830's Crusade of William White to supply eager Maori tribes on the west of the North Island with European Settlers* (Auckland, New Zealand, 1997).

Kohere, Reweti T *The Story of a Maori Chief* (Reed Publishing (NZ) Ltd, Wellington, 1949).

MacDonald, F and Kerr, R (eds) *West: The History of Waitakere* (Random House, Auckland, 2009).

Mackey, Jo *The Whau: our streams, our river, our backyards,* (Waitakere City Council, 2002).

Scott Dick, *Fire on the Clay: The Pakeha Comes to West Auckland*, (Southern Cross books, Auckland, 1979).

Sherrin, R A A and Wallace J H *Early History of New Zealand,* Auckland, 1890.

Stone, C J *From Tamaki-Makau-Rau to Auckland* (Auckland University Press, Auckland, 2001).

Taylor, Richard, *A Leaf from the Natural History of New Zealand* (2nd ed) (New Zealander Office, Auckland, 1870).

White, John "Revenge: A Love Tale of the Mount Eden Tribe" (Wellington, Reed Publishing (NZ), 1940).

CHAPTERS IN BOOKS

Biggs Bruce, "A Linguist Revisits the New Zealand Bush" in Andrew Pawley (ed) *Man and a Half. Essays in Pacific Anthropology and Ethnobiology in Honour of Ralph Bulmer.* Auckland: Polynesian Society, 1991.

Paterson Malcolm 'Ngati Whatua and West Auckland (Ko Nga Kuri Purepure o Tamaki, e kore e ngaro I te po)' in F MacDonald and R Kerr (eds) *West: The History of Waitakere* (Random House, Auckland, 2009).

Taua Te Warena, 'He kohikohinga korero mo Hikurangi,' in F MacDonald and R Kerr (eds), *West: The History of Waitakere* (Random House, Auckland, 2009) p26.

Wi Aoterangi, Ruarangi and Ohomata in *Fragments of Ancient Maori History,* collected by J McGregor and translated by G Graham, 1923, p11.

Williams H. W., M.A., Archdeacon of Waiapu *A Plea for the Scientific Study of Maori Names* Transactions and Proceedings of the Royal Society of New Zealand 1868-1961, Volume 45, 1912, ART. XLVII.

JOURNALS

Adam John P 'The Rosebank Peninsula: A landscape thematic study' (Avondale-Waterview Historical Society, Auckland, 2011).

Astley John E 'The Astley Saga, A Post-Pioneer Auckland Family,' *Journal of the Auckland Historical Society, [Part One]* October 1966.

Graham George, 'Mahuhu – the Ancestral Canoe of Ngati-Whatua (Kaipara)', *Journal of the Polynesian Society, Vol. 48,* 1939.

Harlow Ray, Keegan Peter, King Jeanette, Maclagan Margaret, Watson Catherine. Te whakahuatanga I te reo Maori: Kua ahatia e tatou I roto I nga tau 100 kua hipa nei? (The pronunciation of Maori: What have we done

to it in the last 100 years?) in He Puna Korero: *Journal of Maori and Pacific Development*, Volume 6, Issue 1, February 2005.

Truttman Lisa, 'From Derry to the Whau – the Archibald family of brick and pipe makers' in *The Avondale Historical Journal,* Official Publication of the Avondale-Waterview Historical Society Incorporated, Volume 15, Issue 89, May-June 2016.

Warne Kennedy 'The Wilderness Next Door' *New Zealand Geographic*, Issue 123, Sep-Oct 2013.

NEW ZEALAND LEGISLATION

Nga Mana Whenua o Tamaki Makaurau Collective Redress Act 2014.

WAITANGI TRIBUNAL REPORTS

Archie C, *Ngati Whatua o Kaipara Ki Te Tonga – Traditional History,* Wai 312.
Murdoch Graeme, *Te Kawerau a Maki and the Crown in Kaipara,* Wai 470, 2000.
Ngati Whatua o Orakei Deed of Settlement 5 Nov 2011.

NATIVE LAND COURT REPORTS

Native Land Court. Kaipara Minute Book 2. *Otene Kikokiko. (Transcription).*

REPORTS AND PAPERS

"Auckland Canals and Inland Waterways Commission (Report of the)." Appendix to the Journals of the House of Representatives, Session II. 1921, New Zealand.

Best, S B Clough R E, 8 March 2000 The Auckland Brick & Tile Co. Site, Whau Creek, Te Atatu, Auckland (R11/1724): Section 18 Investigation, Unpublished report prepared for Waitakere Properties.

Gardner M, Varaine M and Atkinson T 'The Avondale Stream/Wai Tahurangi Today: An ecological assessment' A paper for Project Whau (a joint venture of Waitakere City Council, Auckland City Council, Auckland Regional Council, Avondale Community Board, New Lynn Community Board) March 1999.

Hayward B. W. and Diamond J. T., Prehistoric Archaeological Sites of the Waitakere Ranges and West Auckland, New Zealand, Auckland Regional Authority, 1978.

'Kahawai (Kah)' Paper (2008) accessed online at http://fs.fish.govt.nz/Doc/5483/KAH_FINAL%2008.pdf.ashx.

Kawharu I H*, Orakei – a Ngati Whatua Community,* New Zealand Council for Educational Research, Wellington, 1975.

Lowe Jennifer, McCready Sarah and Clough Rod "Te Whau Coastal Pathway, Olympic Park (New Lynn) to Orangihina (Te Atatu): Preliminary Archaeological Assessment, Report prepared for Auckland Council, November, 15, 2015.

New Lynn Reserves Management Plan 2004 (PDF) Waitakere City Council. Sourced online at http://www.waitakere.govt.nz/Cnlser/pbr/plans/pdf/newlynn/part1-newlynn.pdf.

New Zealand Transport Agency (NZTA) *Waka Kotahi* 'Western Ring Route – Waterview Connection, Assessment of Archaeological Effects' prepared by Rod Clough, Sarah Macready and Simon Bickler – Clough & Associates Ltd, July, 2010, p23-26.

'Parore (Par)' Paper (2008) accessed online at http://fs.fish.govt.nz/Doc/5548/PAR_FINAL%2008.pdf.ashx.
NIWA *Taihoro Nukurangi* website. News and Publications, 'Summer Series 10: Super snapper' (29 April 2010) accessed online at https://www.niwa.co.nz/news/summer-series-10-super-snapper-delicious.

Sprat (Spr) Paper (2006) accessed online at http://fs.fish.govt.nz/Doc/5638/SPR_06.pdf.ashx.

THESES
Goodall Donald Harry "Manufacturing in the Western Districts of Auckland," unpublished thesis, University of Auckland, 1965.

Hargreaves Margaret 'Early Manukau 1820-65' MA Thesis, Auckland University College, 1943.
NEWSPAPERS

THE AUCKLAND EVENING STAR
The Evening Star, Wednesday, January 17, 1872.
The Auckland Evening Star, Wednesday, March 18, 1881.
The Auckland Evening Star, 20 July, 1882.
The Auckland Evening Star, Thursday, November 8, 1883.
The Auckland Evening Star, Saturday, April 26, 1884.
The Auckland Evening Star, Monday, 10 November, 1884.
The Evening Star, Tuesday, January 25, 1886.
The Auckland Evening Star, Tuesday, May 24, 1887.
The Auckland Evening Star, Saturday, January 28, 1888.
"Whau Bridge Maintenance. Court of Allocation" *The Auckland Evening Star,* Tuesday, May 27, 1890.
The Auckland Evening Star, 21 February, 1898.

AUCKLAND STAR
Auckland Star, 11 May, 1874.
Auckland Star, 12 May, 1874.
Auckland Star, June 2, 1876.
Auckland Star, August 11, 1876.
Auckland Star, January 5, 1877.
Auckland Star, 2 March, 1878.
Auckland Star, July 10, 1878.
Auckland Star, July 19, 1878.
Auckland Star, 19 July, 1879.
Auckland Star, 24 February, 1881.
Auckland Star, 15 March, 1881.
Auckland Star, 1 April, 1881.
Auckland Star, 1 October, 1881.
Auckland Star, 28 January, 1882.
Auckland Star, 4 November, 1882.
Auckland Star, 2 December, 1882.
Auckland Star, 9 February, 1883.
Auckland Star, 2 April, 1883.
Auckland Star, 3 April, 1883.
Auckland Star, Saturday Supplement, September 1, 1883.
Auckland Star, Saturday, 10 November, 1883.
Auckland Star, 23 June, 1884.
Auckland Star, 6 February, 1885.
Auckland Star, 15 August, 1885.
Auckland Star, 8 December, 1885.
Auckland Star, 23 December, 1886.
Auckland Star, January 25, 1887.
Auckland Star, 2 June 1887.
Auckland Star, 23 February, 1888.
Auckland Star, 1 October, 1888.
Auckland Star, 21 May, 1889.
Auckland Star, 25 January, 1890.
Auckland Star, 30 January, 1890.
Auckland Star, 4 June, 1891.
Auckland Star, 13 May, 1893.
Auckland Star, 3 September, 1895.

Auckland Star, 25 February, 1896.
Auckland Star, 18 May, 1896.
Auckland Star, 13 June 1896.
Auckland Star, 24 November, 1897.
Auckland Star, 23 December, 1898.
Auckland Star, April 3, 1901.
Auckland Star, Monday, April 8, 1901.
Auckland Star, Saturday, June 21, 1902.
Auckland Star, Wednesday, August 6, 1902.
Auckland Star, Thursday, May 7, 1903.
Auckland Star, Wednesday, July 29, 1903.
Auckland Star, Friday, December 9, 1904.
Auckland Star, 3 July, 1906.
Auckland Star, 3 May, 1907.
Auckland Star, Saturday, February 29, 1908.
Auckland Star, 1 November, 1909.
Auckland Star, 15 March, 1911.
Auckland Star, 22 July, 1911.
Auckland Star, September 12, 1913.
Auckland Star, 18 November, 1913.
Auckland Star, Tuesday, December 7, 1915.
Auckland Star, Volume XLVII, Issue 61, 11 March 1916.
Auckland Star, 17 December, 1917.
Auckland Star, 24 October, 1919.
Auckland Star, Tuesday, April 13, 1920.
Auckland Star, Saturday, May 15, 1920.
Auckland Star, 2 November, 1920.
Auckland Star, 8 February, 1921.
Auckland Star, Saturday, September 28, 1912.
Auckland Star, Saturday, April 19, 1913.
Auckland Star, Tuesday, August 4, 1914.
Auckland Star, Tuesday, June 20, 1916.
Auckland Star, Tuesday, July 29, 1919.
Auckland Star, Wednesday, March 3, 1920.
Auckland Star, Volume LI, Issue 181, 30 July 1920.
Auckland Star, Friday, December 17, 1920.
Auckland Star, Thursday, January 27, 1921.
Auckland Star, Volume LII, Issue 67, 19 March 1921.
Auckland Star, Volume LII, Issue 95, 22 April 1921.
Auckland Star, 14 May, 1921.
Auckland Star, Saturday, June 18, 1921.
Auckland Star, Tuesday, April 27, 1926.
Auckland Star, Wednesday, January 12, 1927.
Auckland Star, Friday, July 15, 1927.
Auckland Star, Wednesday, December 14, 1927.
Auckland Star, Tuesday, February 7, 1928.
Auckland Star, Wednesday, February 15, 1828.
Auckland Star, Friday, February 17, 1928.
Auckland Star, Monday, February 20, 1928.
Auckland Star, Wednesday, February 22, *1928.*
Auckland Star, Friday, February 1, 1929.
Auckland Star, Friday, February 22, 1929.
Auckland Star, Tuesday, March 12, 1929.
Auckland Star, Friday, August 2, 1929.
Auckland Star, Monday, November 25, 1929.
Auckland Star, Wednesday, May 28, 1930.
Auckland Star, 20 June, 1930.

Auckland Star, Wednesday, February 25, 1931.
Auckland Star, Friday, April 17, 1931.
Auckland Star, Thursday, October 29, 1931.
Auckland Star, Tuesday, 15 December, 1931.
Auckland Star, Tuesday, December 27, 1932.
Auckland Star, Saturday, October 7, 1933.
Auckland Star, Wednesday, March 14, 1934.
Auckland Star, Friday, September 21, 1934.
Auckland Star, Monday, March 4, 1935.
Auckland Star, Monday, March 23, 1936.
Auckland Star, Friday, February 5, 1937.
Auckland Star, Tuesday, May 2, 1939.

BAY OF PLENTY TIMES
Bay of Plenty Times, October 24, 1913, p5.

DAILY SOUTHERN CROSS
Daily Southern Cross, 23 December, 1843.
Daily Southern Cross, 21 August, 1847.
Daily Southern Cross, 22 March, 1853.
Daily Southern Cross, June 22, 1855.
Daily Southern Cross, 10 August 1855.
Daily Southern Cross, 1 April, 1856.
Daily Southern Cross, 10 November, 1857.
Daily Southern Cross, 14 September, 1858.
Daily Southern Cross, 3 May, 1859.
Daily Southern Cross, 27 September, 1859.
Daily Southern Cross, 7 February, 1860.
"Provincial Council. Thursday, February 9, 1860"; *Daily Southern Cross,* 14 February 1860.
Daily Southern Cross, 10 September, 1861.
Daily Southern Cross, 18 October, 1861.
Daily Southern Cross, 26 July, 1862.
Daily Southern Cross, 5 November, 1862.
Daily Southern Cross, November 23, 1863.
Daily Southern Cross, 28 October, 1864.
Daily Southern Cross, 21 November, 1864.
Daily Southern Cross, 1 March, 1865.
Daily Southern Cross, 6 April, 1865.
Daily Southern Cross, June 14, 1865.
Daily Southern Cross, 22 August 1867.
Daily Southern Cross, Saturday, September 10, 1870.
Daily Southern Cross, 18 August, 1871.
Daily Southern Cross, February 22, 1872.
Daily Southern Cross, 5 October, 1872.
Daily Southern Cross, March 24, 1873.
Daily Southern Cross, February 24, 1874.
Daily Southern Cross, 12 January, 1876.
Daily Southern Cross, June 2, 1876.
Daily Southern Cross, August 11, 1876.
Daily Southern Cross, 3 November, 1885.
"The New Whau Bridge" *The Daily Southern Cross*, Saturday, June 25, 1870.

THE EVENING POST
The Evening Post, May 28, 1913.
The Evening Post, September 9, 1913.
The Evening Post, September 10, 1913.
The Evening Post, Saturday, February 2, 1929.

The Evening Post, Saturday, March 29, 1930.
The Evening Post, Saturday, March 16, 1935.

THE HAWERA AND NORMANBY STAR
Hawera and Normanby Star, 5 November, 1902.

THE KAIPARA AND WAITEMATA ECHO
The Kaipara and Waitemata Echo, Thursday, September 9, 1920.
The Kaipara and Waitemata Echo, Thursday, October 21, 1920.
The Kaipara and Waitemata Echo, Thursday, November 11, 1920.

THE MANAWATU EVENING STANDARD
The Manawatu Evening Standard, Friday, September 6, 1912.

THE NELSON EXAMINER
The Nelson Examiner, 22 July, 1857.

THE NEW-ZEALANDER
The New-Zealander, 29 March, 1848.
The New-Zealander, 8 March, 1851.
The New Zealander, September 6, 1951.
The New-Zealander, 25 October, 1851.
The New Zealander, 30 July, 1853.
The New-Zealander, Saturday, November 12, 1853.
The New-Zealander, January 14, 1854.
The New Zealander, 4 February, 1854.
The New-Zealander, December 7, 1859.
The New-Zealander, January 7, 1860.
The New Zealander, 21 January, 1860.
The New-Zealander, June 19, 1863.
The New Zealander, April 22, 1864.
The New Zealander, 13 April, 1865.
The New Zealander, 1 December, 1865.

THE NEW ZEALAND HERALD
The New Zealand Herald, 1 March, 1865.
The New Zealand Herald, 22 March, 1865.
The New Zealand Herald, September 13, 1870.
The New Zealand Herald, Thursday, October 6, 1870.
The New Zealand Herald, February 12, 1872.
The New Zealand Herald, June 17, 1872.
The New Zealand Herald, January 29, 1873.
The New Zealand Herald, Wednesday, March 19, 1873.
The New Zealand Herald, 22 December, 1873.
The New Zealand Herald, 12 May, 1874.
The New Zealand Herald, May 25, 1874.
The New Zealand Herald, May 18, 1876.
The New Zealand Herald, June 2, 1876.
The New Zealand Herald, January 13, 1877.
The New Zealand Herald, 12 February, 1878.
The New Zealand Herald, March 13, 1879.
The New Zealand Herald, 16 March, 1881.
The New Zealand Herald, 6 October 1881.
The New Zealand Herald, 23 March, 1882.
The New Zealand Herald, 3 June, 1882.
The New Zealand Herald, Wednesday, October 25, 1882.
The New Zealand Herald, Tuesday, December 5, 1882.
The New Zealand Herald, 30 April, 1883.

The New Zealand Herald, 16 July, 1883.
The New Zealand Herald, November 2, 1883.
The New Zealand Herald, Auckland, Friday, November 9, 1883.
The New Zealand Herald, Saturday, November 17, 1883.
The New Zealand Herald, Saturday, May 3, 1884.
The New Zealand Herald, 7 August, 1884.
The New Zealand Herald, Tuesday, October 14, 1884.
The New Zealand Herald, Saturday, November 1, 1884.
The New Zealand Herald, Tuesday, November 11, 1884.
The New Zealand Herald, 15 November, 1884.
The New Zealand Herald, 3 November, 1885.
The New Zealand Herald, Saturday, January 9, 1886.
The New Zealand Herald, 28 July, 1886.
The New Zealand Herald, 11 October, 1886.
The New Zealand Herald, 18 December, 1886.
The New Zealand Herald, 26 February, 1887.
The New Zealand Herald, Wednesday, May 4, 1887.
The New Zealand Herald, Saturday, July 2, 1887.
The New Zealand Herald, 7 July, 1887.
The New Zealand Herald, 6 February, 1888.
The New Zealand Herald, 23 February, 1888.
The New Zealand Herald, 30 March, 1888.
The New Zealand Herald, 5 May, 1888.
The New Zealand Herald, 21 May, 1889.
The New Zealand Herald, 1 June, 1889.
The New Zealand Herald, 30 May, 1889
The New Zealand Herald, 1 June, 1889.
The New Zealand Herald, 3 June, 1889.
The New Zealand Herald, 5 October, 1888.
The New Zealand Herald, 28 March, 1890.
The New Zealand Herald, 19 December, 1889.
The New Zealand Herald, 7 February 1891.
The New Zealand Herald, 14 September, 1891.
The New Zealand Herald, 4 August, 1892.
The New Zealand Herald, 10 and 11 October, 1892.
The New Zealand Herald, 26 December, 1893.
The New Zealand Herald, 1 March, 1895.
The New Zealand Herald, 30 March, 1895.
The New Zealand Herald, 7 February, 1896.
The New Zealand Herald, 21 February, 1898.
The New Zealand Herald, 18 March, 1898.
The New Zealand Herald, 11 July 1899.
The New Zealand Herald, 29 March, 1900.
The New Zealand Herald, 2 May, 1901.
The New Zealand Herald, Tuesday, June 4, 1901.
The New Zealand Herald, December 30, 1901.
The New Zealand Herald, 7 January, 1902.
The New Zealand Herald, 9 January, 1902.
The New Zealand Herald, 11 January 1902.
The New Zealand Herald, 25 January 1902.
The New Zealand Herald, 30 May, 1903.
The New Zealand Herald, Thursday, August 6, 1903.
The New Zealand Herald, Monday, September 12, 1904.
The New Zealand Herald, 14 April, 1906.
The New Zealand Herald, Friday, November 9, 1906.
The New Zealand Herald, 22 January, 1907.
The New Zealand Herald, 3 May, 1907.

The New Zealand Herald, 7 May, 1907.
The New Zealand Herald, Wednesday, June 5, 1907.
The New Zealand Herald, 1 November, 1907.
The New Zealand Herald, Saturday, April 11, 1908.
The New Zealand Herald, 20 November, 1908.
The New Zealand Herald, 17 December, 1908.
The New Zealand Herald, 1 October, 1910.
The New Zealand Herald, 15 March, 1911.
The New Zealand Herald, 5 April, 1911.
The New Zealand Herald, 22 April, 1912.
The New Zealand Herald, Friday, January 30, 1914.
The New Zealand Herald, Thursday, May 21, 1914.
The New Zealand Herald, Friday, June 12, 1914.
The New Zealand Herald, 24 December, 1915.
The New Zealand Herald, Volume LIII, Issue 16127, 15 January 1916.
The New Zealand Herald, Saturday, May 15, 1920.
The New Zealand Herald, Saturday, January 29, 1921.
The New Zealand Herald, Saturday, February 19, 1921.
The New Zealand Herald, Volume LIX, Issue 18076, 28 April 1922.
The New Zealand Herald, Tuesday, November 13, 1923.
The New Zealand Herald, Monday, March 31, 1924.
The New Zealand Herald, Tuesday, March 22, 1927.
The New Zealand Herald, Volume LXIV, Issue 19736, 8 September 1927.
The New Zealand Herald, Friday, October 7, 1927.
The New Zealand Herald, 27 October, 1927.
The New Zealand Herald, 13 April, 1928.
The New Zealand Herald, 16 May, 1928.
The New Zealand Herald, Saturday, September 8, 1928.
The New Zealand Herald, Tuesday, February 12, 1929.
The New Zealand Herald, Wednesday, May 7, 1930.
The New Zealand Herald, Monday, June 16, 1930.
The *New Zealand Herald,* Wednesday, July 9, 1930.
The New Zealand Herald, Wednesday, November 5, 1930.
The New Zealand Herald, Saturday, February 14, 1931.
The New Zealand Herald, Monday, March 2, 1931.
The New Zealand Herald, Thursday, March 12, 1931.
The New Zealand Herald, Wednesday, July 22, 1931.
The New Zealand Herald, Tuesday, October 20, 1931.
The New Zealand Herald, 21 September, 1932.
The New Zealand Herald, November 24, 1932.
The New Zealand Herald, Wednesday, January 25, 1933.
The New Zealand Herald, Tuesday, January 16, 1934.
The New Zealand Herald, Monday, March 4, 1935.
The New Zealand Herald, Friday, March 8, 1935.
The New Zealand Herald, Wednesday, October 2, 1935.
The New Zealand Herald, Friday, March 20, 1936.
The New Zealand Herald, Wednesday, March 25, 1936.
The New Zealand Herald, Wednesday, January 26, 1938.
The New Zealand Herald, Monday, February 14, 1938.
The New Zealand Herald, Thursday, May 26, 1938.
The New Zealand Herald, Tuesday, September 26, 1939.
English Philip, 'Researcher suspects toxin in Waitemata flounder,' *New Zealand Herald*, Friday, 30 June, 2000.
The New Zealand Herald, Friday, October 26, 2001.
Moore Colin, "Shorelines: Paddle your way around Auckland," *The New Zealand Herald,* Monday February 25, 2002.

SUPPLEMENT TO THE NEW ZEALAND HERALD
Supplement to the New Zealand Herald, Saturday, October 1, 1892.
Supplement to the New Zealand Herald, Wednesday, February 22, 1905.
Supplement to the New Zealand Herald, Saturday, November 28, 1925.

THE OBSERVER AND FREELANCE
The Observer, Volume 7, Saturday, November 17, 1883.
The Observer and Free Lance, Saturday, August 1, 1885.
The Observer and Free Lance, Saturday, September 12, 1885.
The Observer, December 1, 1900.

OTAGO DAILY TIMES
Otago Daily Times, Thursday, May 21, 1903.
Otago Daily Times, May 29, 1913.

THE POVERTY BAY HERALD
The Poverty Bay Herald, Monday, July 7, 1902.

THE PRESS
The Press, 22 February, 1898.
The Press, Tuesday, November 30, 1937.

THAMES ADVERTISER
Thames Advertiser, 30 August, 1899, p4**.**

THAMES STAR
Thames Star, October 24, 1913.

WANGANUI HERALD
Wanganui Herald, 21 September, 1877.
Wanganui Herald, 2 September 1885.

THE WELLINGTON INDEPENDENT
The Wellington Independent, February 7, 1872.

THE WEST COAST TIMES
The West Coast Times, Thursday, April 9, 1914.

WESTERN LEADER
Western Leader, 20 April, 2000.
Western Leader, 16 June, 2000.
Western Leader, June 25, 2008.
Matthew Gray, 'Maori Unrest Sees Family Head West' *Western Leader*, 2 July 2013.
Tischler Monica, 'Big Plans for Boardwalk', *Western Leader,* August 7, 2014.
Rees-Owen Rose, 'Large Pod of Dolphins Spotted in Whau River' *Western Leader,* 4 August, 2015.

WEBSITES
'Auckland Area Passenger Arrivals 1838-1889.' Sourced online at http://www.aucklandcity.govt.nz/dbtw-wpd/exec/dbtwpub.dll.

Auckland Coastguard Inc. Sourced online at http://www.auckland-coastguard.org.nz/Pages/historycuttergroup.html.

Auckland Council Parks. Sourced online at http://www.aucklandcouncil.govt.nz.

Bickler Simon H, NZ Brick Database: A Research Resource for NZ Historical Archaeologists. Sourced online at http://bickler.co.nz/bricks/manufacturers.php?manu=19.

Department of Conservation *Te Papa Atawhai*. References sourced online at http://www.doc.govt.nz.

Genealogy website. Sourced online at http://freepages.genealogy.rootsweb.ancestry.com/~ourstuff/DuchessofArgyle.htm.

John White, *The Ancient History of the Maori, His Mythology and Traditions. Nga-Puhi [Vol. XI],* Chapter IV, "History of the Wars in the Auckland District by Nga-Ti-Whatua Tribe" (manuscripts from 1887-1890.). New Zealand Electronic Text Collection (Te Puhikotuhi o Aotearoa). Sourced online at http://nzetc.victoria.ac.nz//tm/scholarly/tei-Whi11Anci-t1-body-d4.html.

Landcare Research *Manaaki Whenua*. References and photograph sourced online at http://www.landcareresearch.co.nz.
Lovell-Smith Melanie. 'Early mapping - The coastline: 1840 to 1855', *Te Ara - the Encyclopedia of New Zealand*. Sourced online at http://www.TeAra.govt.nz/en/early-mapping/page-5.

Maori Language: Vowels and Digraphs, *An Encyclopaedia of New Zealand,* A H McLintock (ed) 1966. Sourced online at http://www.teara.govt.nz/en/1966.

New Zealand Birds Online: The digital encyclopaedia of New Zealand Birds. Sourced online at http://www.nzbirdsonline.org.nz.

New Zealand Electronic Text Collection *Te Puhikotuhi o Aotearoa,* Victoria University of Wellington, *The Cyclopedia of New Zealand [Auckland Provincial District]* 'Leather Trade'. Sourced online at http://nzetc.victoria.ac.nz/tm/scholarly/tei-Cyc02Cycl-t1-body1-d1-d49.html.

New Zealand History *Nga korero a ipurangi o Aotearoa,* 'Daniel Pollen.' Sourced online at http://www.nzhistory.net.nz/media/photo/daniel-pollen.

The New Zealand Leather and Shoe Research Association (LASRA). Sourced online at https://www.lasra.co.nz/100-year-old-leather-chemists-pocket-book/.

NIWA *Taihoro Nukurangi*. Sourced online at https://www.niwa.co.nz.

Regan A and Robinson H (2005) Benjamin Gittos, Leather Merchant, Auckland, New Zealand (1808-1884) in Museum Victoria Collections. Sourced online at http://collections.museumvictoria.com.au/articles/1866.

St Judes Cemetery records. Sourced online at http://cemetery.stjudes.co.nz/StJudes_Cemetery/Survey_files/06-Headstone%20Transcripts-E.pdf.

Saint Ninians of Avondale, James and Agnes Archibald Historical Information. Sourced online at https://sites.google.com/site/stniniansofavondale/james-and-agnes-archibald.

Story: Kendall, Thomas, Te Ara, The Encyclopedia of New Zealand. Sourced online at http://www.teara.govt.nz/en/biographies/1k9/kendall-thomas.

T.E.R.R.A.I.N Taranaki Educational Resource: Research Analysis and Information Network. Sourced online at www. Terrain.net.nz.

Te Whau Pathway. Sourced online at www.tewhaupathway.org.nz/project/timeline/stage-1a.

Timespanner: A journey through Avondale, Auckland and New Zealand history. 'Burke's Brickyard on the Whau.' Sourced online at http://timespanner.blogspot.co.nz/2011/08/burkes-brickyard-on-whau.html.

The Whau River Catchment Trust. Sourced online at www.whauriver.org.nz/the-whau-river-catchment-trust.

Truttman Lisa, 'Best's Varnish Works.' Sourced online at https://www.scribd.com/document/7535497/Best-s-Varnish-Works.

Wildfish. Sourced online at http://wildfish.co.nz/portfolio/yellowbelly-flounder/.

'Woodlark Passenger List. Sourced online at
http://freepages.genealogy.rootsweb.ancestry.com/~ourstuff/Woodlark1873.htm.

NEWSLETTERS
Friends of the Whau, ENews, March 2016. Sourced online at www.whauriver.org.nz.

PERSONAL COMMENTS

Kawharu Margaret, descendant, personal comment, June 2008.
Murdoch Graeme, historian, personal comment, June 2008.

HEADSTONE INSCRIPTIONS

Headstone inscription, Waikumete Cemetery, Auckland – New Zealand Anglican Block C, Section 7, Plot 1. James Archibald died on 13 July, 1910 (gravestone inscription, St Ninians Cemetery, St Georges Road, Avondale).

OTHER MEDIA
Iris Donoghue, *Celebrating the Whau,* at www.tewhaupathway.org.nz/news/media-release/celebrating-the-whau, July 1, 2015.

Metro: "The Auckland Unitary Plan: The Battle to Build the City We Deserve" Current Affairs, From the Archives, Urban Design, June, 2013.

"Our Streams, Our Future: The Whau River Catchment" (Interactive CD). This is a community resource prepared for Friends of the Whau by Creative Designs Ltd, July, 2005.