

Waikato – Waipa Fisheries Taonga

Fisheries taonga have sustained our people
for centuries





Fisheries

- Fisheries are a taonga to Waikato-Tainui .
- They are treated as such because they sustain the Waikato-Tainui way of life, both physically and spiritually.
- Our rivers, lakes, streams and fisheries are one of the same and inseparable



Keakahi



Kooura

Tuna



Inanga

Waikato-Tainui

- 64,000 tribal members
- 68 Marae





Waikato Raupatu River Trust

- An entity of Waikato-Tainui
- Environmental and Treaty Claims Arm
- Implement the Waikato River Settlement provisions
- Administers the Waikato River Fisheries Regulations and Bylaws
- Work with and support our marae, people and the wider community on special projects to restore and protect the Waikato River



Historical significance of fisheries taonga to Waikato-Tainui

- Abundant, found in all waterways, easily caught and highly nutritious
- Ancestors obtained 90% of protein and essential fatty acids from freshwater shellfish/fish, in particular tuna
- History of Waikato-Tainui and tuna are intertwined
 - Stories, songs, carvings, battles and sites associated with tuna
- Guardians of the Kiingitanga



Importance of Tuna to Waikato-Tainui

“...the Waikato River, with its tributaries, was the most celebrated in New Zealand for its Paa-tuna and the quantities of eels found there. The Mangatawhiri, the Maramarua, the Whangamarino, the Mangawara, the Waipa, the Awaroa, the Oopuatia, and the two lakes Waikare and Whangape, all in the middle Waikato, were famed for their eels...” Downes (1918)



Raahui Pookeka - Huntly

- Prohibition on taking Tuna
- Lake Hakanoa
- Lake Waahi



Waikato-Tainui Tuna Names

Eel names used in the Waikato	Descriptions given by Kaumaatua	Likely Scientific name and status
Ringo	Large silver belly eel gold/bronze back. The best eel of all to eat.	Shortfin Female migrant <i>Anguilla australis</i> .
Puhi	Small silver belly eel about 30 cm. Pointy head, very good to eat. The baby of the Ringo.	Shortfin male migrant <i>Anguilla australis</i>
Ngeangea	Silver belly, good eating, gold back.	Shortfin female migrant <i>Anguilla australis</i> .
Pararua	Yellow belly, big nostrils. These eels bite people and eat anything. Not that good to eat.	Longfin female <i>Anguilla dieffenbachia</i> .
Tuna pahu	Barking eel, over 2m long. Not good to eat	Longfin female <i>Anguilla dieffenbachia</i>
Kookopu	Large slimey eel that leads the migration.	Longfin female <i>Anguilla dieffenbachii</i> .
Tuna heke	Silver belly eel. term also used to describe the downstream migration	Shortfin male <i>Anguilla australis</i> .
Tuna tuna	Glass eel caught during the annual whitebait season.	<i>Anguilla dieffenbachii</i> and <i>Anguilla australis</i> .
Piharau	Different shaped head to other eels, has a round disc shaped mouth, also known as the blind eel.	Lamprey <i>Geotria australis</i> .
Paraharaha	A large eel, short and thick, black above, yellowish below, frequents clear stony streams.	Longfin female <i>Anguilla dieffenbachii</i> .
Whitiki	A small eel in Waikato District. The eel's body is bigger than it's head.	
Tuna Tuoro	Large scary eel	Longfin female <i>Anguilla dieffenbachii</i> .



Whitebait – Matamata

- Waikato River is the largest whitebait fishery in New Zealand
- Decline in the catch of whitebait abundance due to:
 - Destruction of estuary vegetation (riparian vegetation is critical) and poor water quality
 - Harvesting
 - Insufficient suitable food and habitat during the adult stage
- Whitebait restoration projects to fence off and replant vegetation (Port Waikato)



Waikato River, Tuakau 1929 (Cowan)



Future Generations





Water quality

- Effects of water quality are chronic and cumulative
- High levels of contaminants cause fish death or avoidance of an area
- Low contaminant concentration may have sub-lethal effects i.e. loss of reproductive capacity, decline in growth rates
- High suspended sediment levels cause lower abundance of native fish i.e. avoidance
- Loss of koura and fresh water mussels (Kaao)





Impediments to fish passage

- Dams, weirs, flood pumps and culverts
- Access to feeding habitat and spawning (migrating tuna)
- Artificial barriers reduce the distribution of native fish
- Provide advantage to introduced fish that do not need to migrate to spawn





Changes in the Flow Regime

- Flood control schemes and hydro dam systems modify river/stream flows
- Natural floods are important to the life cycles of native fish
- Autumn floods trigger whitebait and tuna migrations
- Floods are important for feeding eels i.e. increased terrestrial diet
 - Reduction of natural floods reduces amount of habitat availability for foraging and therefore tuna are in poorer condition



Habitat modification and destruction

- Biggest threat to the native freshwater fishery
- Significant modification or total destruction
 - (i) Wetland drainage (92 % of Waikato Wetlands lost)
 - (ii) Stream channelisation
 - (iii) Vegetation clearance
 - (iv) River dredging
 - (v) Habitat loss resulting from poor water quality



Harvest

- Tuna have been commercially exploited since the 1960's
- Abundance of commercial-sized eels has declined
- Whitebait and Tuna juvenile runs are not as prolific as in the past
- New collaborative fisheries bylaws will address impacts of commercial harvesting of eels



Impacts of poor water quality and loss of habitat

- Not enough habitat and food
- Competing for limited space and food 'Panned In'





Waikato River Fisheries Regulations

- Manage customary fishing *and* propose bylaws to restrict or prohibit fishing within the Waikato-Tainui Fisheries Area
- Applies to fisheries resources under the Fisheries Act 1996
- Bylaws must be necessary for:
 - ~ Sustainable Utilisation or
 - ~ Cultural Reasons
- Consistent with Waikato-Tainui Environmental Plan - Tai Tumu, Tai Pari, Tai Ao



Kōkahi



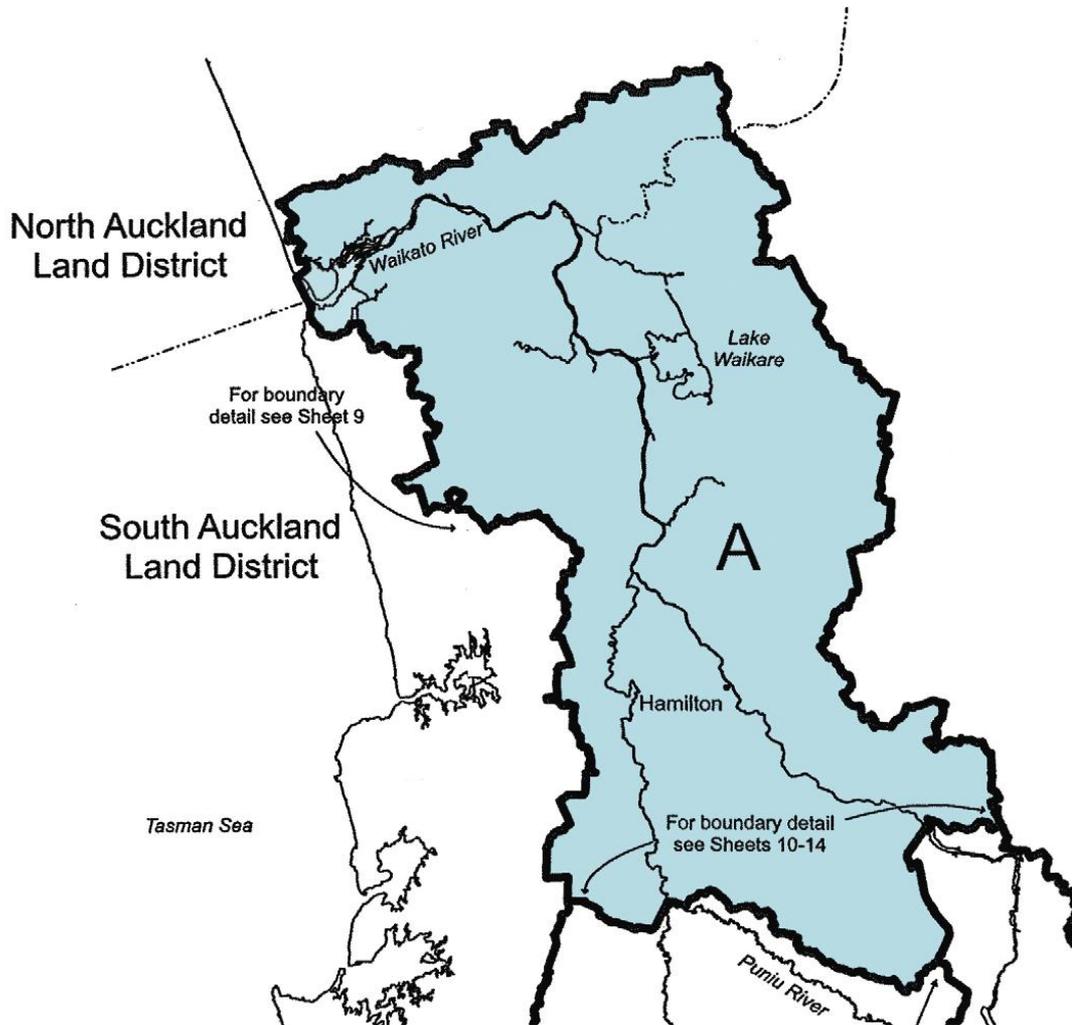
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Tuna



Inanga

Waikato-Tainui Fisheries Area





Keakahi

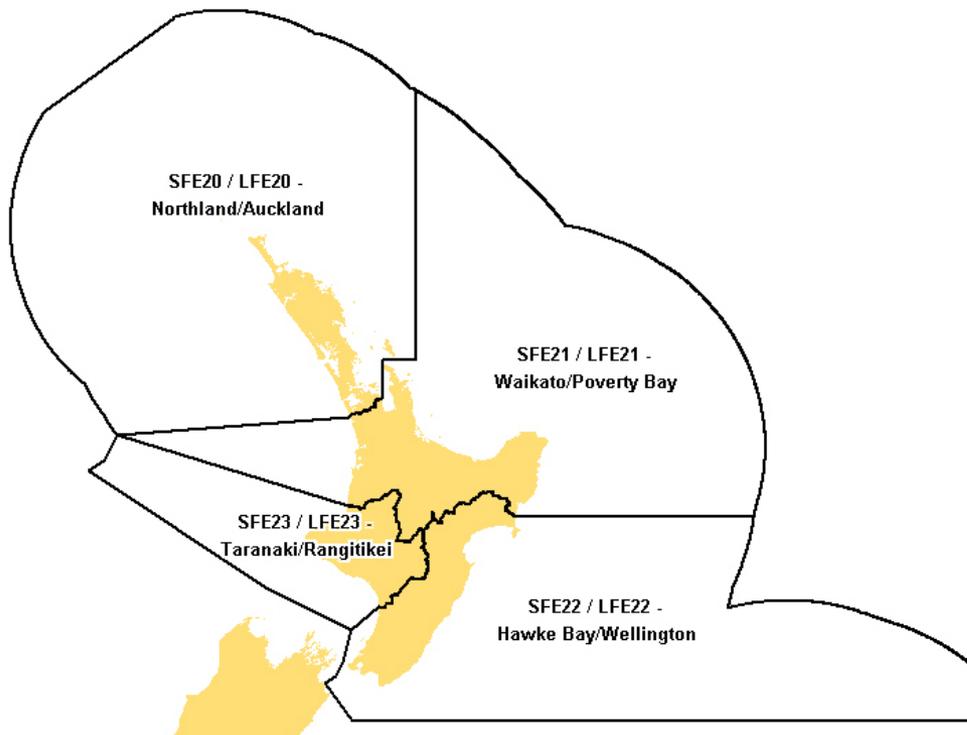
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Tuna

Inanga

Waikato-Tainui and Waikato River Kaitiaki met with Area 21 Commercial Eel Quota Owners – 2013

- Investigate bylaws to enhance tuna stocks
- Established a joint working group to engage on bylaws that may impact the commercial eel sector





Joint Working Group (Waikato-Tainui & Eel Industry)

- Mathew Brown and Wayne Harris (Waikato River Kaitiaki)
- Dr Jacques Boubée (NIWA)
- Doug Jones (TOKM/Te Wai Maori)
- Mike Holmes (Chair of North Island Eel Industry)
- Phillip Walters (Te Kauwhata Eel Factory)
- Mark Kuijten (Levin Eel Factory/Aotearoa Fisheries Limited)
- Julian Williams and Nicholas Manukau (Waikato-Tainui)



Engagement on proposed bylaws

- Waikato-Tainui Marae, Waikato-Tainui Environmental Forum
Waikato River Kaitiaki Network and other Waikato River Iwi.
- Wider community
- Public Submission Process
 - 34 public submissions
 - From Waikato-Tainui Marae, Kaitiaki, Environmental and Conservation Groups, Eel Industry, Councils, River Care Groups, Individuals, Central and local government agencies



Keakahi



Keokura



Tuna



Inanga

Bylaw – Raise minimum weight for commercially harvested tuna

- Raise lower size limit from 220gr to **300gr** (Shortfin Eels, *tuna puhi*)
- Raise lower size limit from 220gr to **400gr** (Longfin Eels, *tuna tuoro*)



220 gram Longfin Tuna, Lake Arapuni, Waikato River



Bylaw – Prohibit the commercial harvest of tuna weighing more than 2 kilograms

- Reduce the current maximum weight of commercially harvested tuna from 4kg to **2kg** (for both Shortfin and Longfin tuna)



Tuna monitoring by Waahi Pa Rangatahi, Huntly



Keakahi



Kooua



Tuna



Inanga

Bylaw – Prohibit the commercial harvesting female longfin tuna in migratory phase

- Commercial fishers must release any female longfin tuna in migratory phase
- Ensures that female longfin eels that reach the spawning phase cannot be harvested
- Provides a level of protection and an opportunity to make it to the ocean





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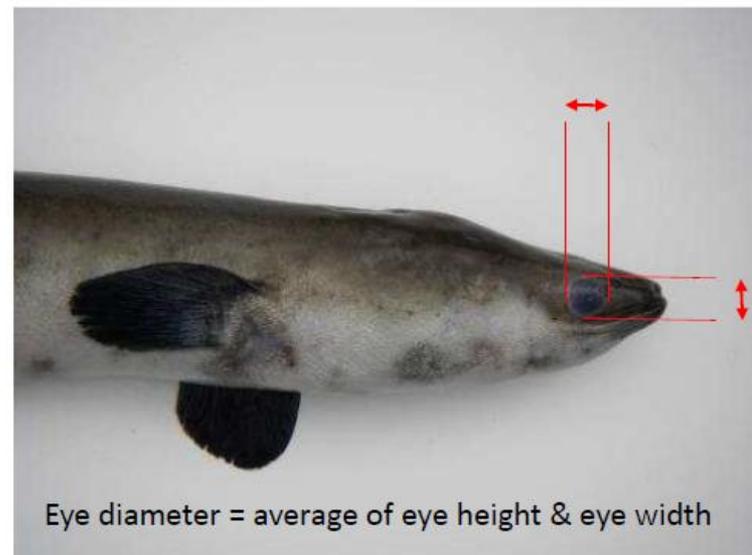
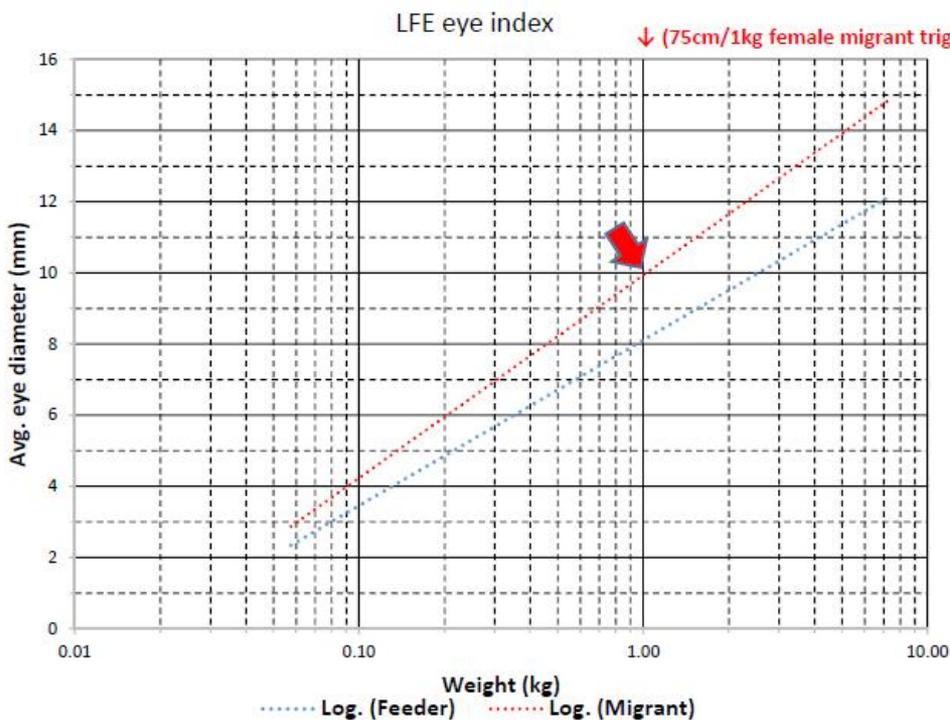


Koouira

Tuna



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Longfinned eels with an average eye diameter greater than 10mm are protected under the Waikato-Tainui Eel Fisheries Bylaws





Bylaw – Incidental catch and release of oversized or migrant tuna below physical barriers

- Provide for incidental catch and release of oversized (2kg plus) and migrant eels below dams, weirs or other barriers
 - It is now illegal for commercial fishers to takes tuna heavier than the maximum size limit 2kg or in migratory phase
 - Releasing these tuna caught above dams back to the water above the dam posses significant risk (caught in turbines or flood control pumps)
 - Bylaw enables commercials eel fishers to retain, transfer and release those eels below the physical barrier



Keakahi



Kooua



Tuna



Inanga



Photo: NIWA



Bylaw – Seasonal prohibition during tuna heke Whangamarino Wetland (1 March to 31 May)

- Whangamarino Wetland - Internationally and culturally significant Whangamarino Wetland
- Seasonal closure prohibiting the commercial harvesting of eels any eels from specific streams and rivers of the Whangamarino Wetland during the tuna heke (eel migration) from 1 March to 31 May.
 - Maramarua and Whangamarino Rivers, Pungarehu and Onetea streams



Keakahi



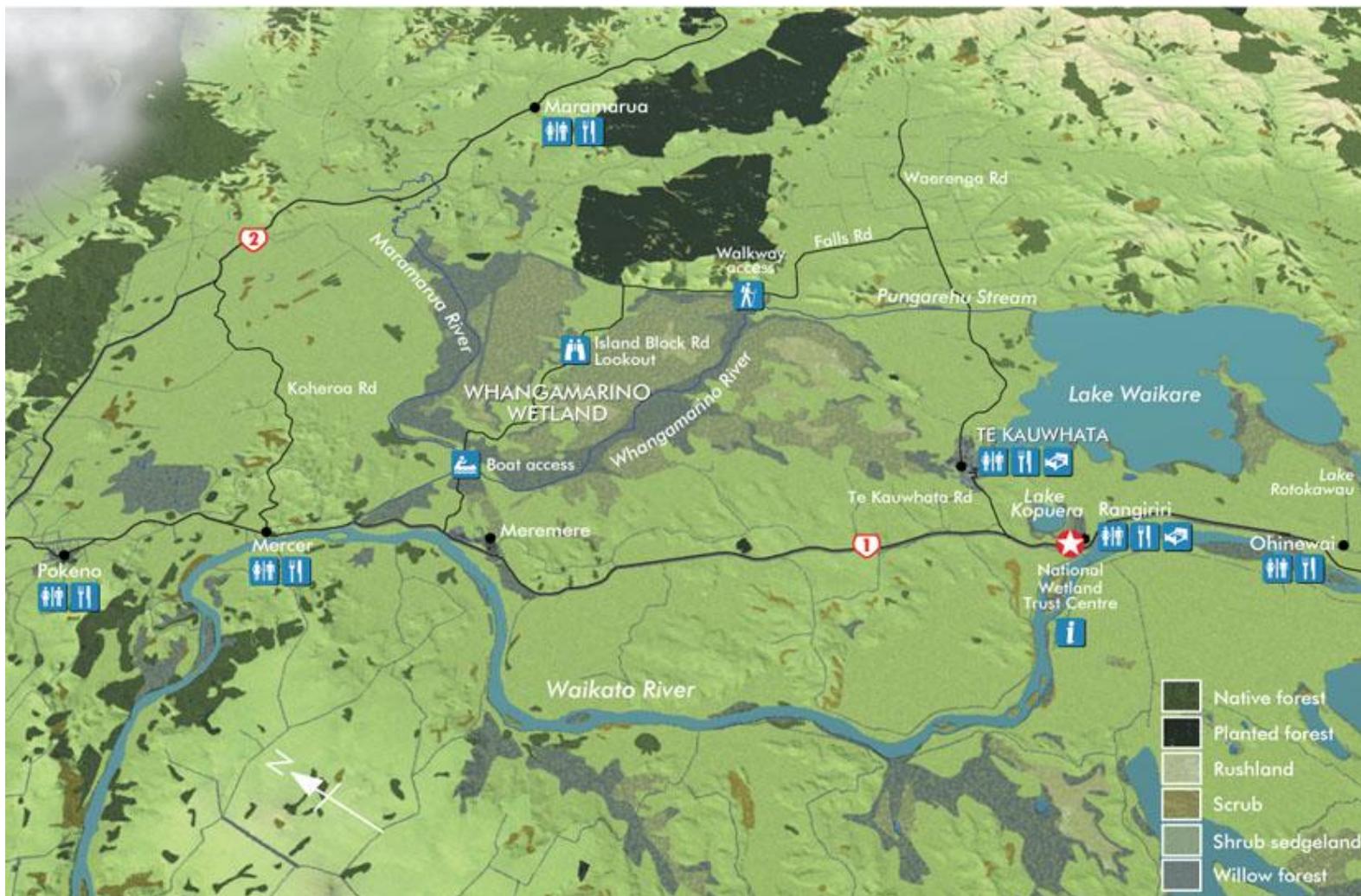
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Whangamarino Wetland





Collaboration and Empowerment

- Collaborative effort between Waikato-Tainui, the wider community and the commercial eel industry
- Everyone has to pull their weight
- Gives effect to the overarching purpose of the Waikato River Settlement
- Gains versus Losses



Manaaki Tuna Project

- Monitor effectiveness of bylaws through a Waikato-Tainui Project - 'Manaaki Tuna'
 - Elver and adult eel transfers
 - Eel Habitat Restoration
 - Eel Monitoring Programme
 - Archimedes screw pump pilot
 - Tuna Restoration Plan



Wawaahitia – Sharing is Caring

“I was coming up the river in a kopapa, a small canoe paddled by a single boy. Night was coming on, I was wet through, cold and hungry. At Waahi an old woman invited me to land. She cried over my forlorn condition, took me into her house, and still weeping split a fern stick, into which she tied an eel in folds like a gigantic cracker. This she roasted over the embers of a fire, it was the most delicious morsel I ever tasted” An early European Explorer at Waahi Pa on the banks of the Waikato River, mid 1800s near present day Huntly.