

# Land Loss, Historic Trauma and the Intergenerational Transmission of Wellbeing: The Experience of Iwi in Aotearoa New Zealand

By

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*He tohu aroha tēnei ki tōku kuia, kua riro ki te pō*

*Marata Lettie (Pomana) Macgregor*

*Ki tōku kuia*

*Te whakatinanatanga o te ringa atawhai*

*He mihi maioha tēne, ki a koe*

*E kore tō aroha e mimiti, ka mau tonu ake ake*



## Abstract

Previous literature has outlined the impacts that the colonisation of Aotearoa New Zealand has had on Māori and how these impacts persist through the intergenerational transfer of trauma which has resulted in socioeconomic deprivation and cultural marginalisation. This thesis will examine whether historical land alienation, based on the unique experiences suffered by different iwi (tribes), explains aspects of the variation observed in contemporary economic, social and cultural outcomes of different iwi. It draws from and contributes to the literature on historic trauma, post-development theory, and path dependency.

To examine these issues, the thesis uses geospatial data of Māori land holdings through different points in time and links it to contemporary cultural and socioeconomic outcomes (by iwi) using data from the 2013 New Zealand census and Te Kupenga. It also explores the relationship that the landholdings have with iwi population growth and Land Use Capability (LUC) class, utilising ordinary least squares (OLS) and ordered logit regression modelling. The analysis also includes a dummy variable for iwi who suffered land alienations via confiscation.

The thesis makes several findings. First, it finds that iwi who had a large proportion of arable land were more likely to experience the greatest proportion of land loss overall. This reaffirms the historical narrative that Māori land that was suitable for arable use was targeted for acquisitions and confiscation and inevitably alienated from iwi in order to establish and facilitate European settlement.

Second, there is a negative relationship between land loss and certain contemporary cultural wellbeing measures, such as te reo Māori proficiency. This supports the narrative that the displacement of iwi from their land impacted intergenerational wellbeing and led to the loss of cultural efficacy and wellbeing for contemporary iwi members, through the deterioration of many established social structures.

Third, the findings suggest that Māori culture serves an important function of providing resilience for iwi against historic trauma, particularly for those iwi that experienced a ‘cataclysmic’ historic trauma event through confiscation. The findings also illustrate the importance of reconnecting people with their whenua and traditional iwi boundaries (rohe) and the central role this has in improving the wellbeing outcomes of iwi through the strengthening of culture.

Fourth, there is a positive relationship between historic land loss and contemporary cellular access. This contributes to the literature on evolutionary economics and historic path dependency of infrastructure investment and development, specifically in relation to cellular infrastructure, with it suggesting that

contemporary access to internet and cellular infrastructure is predicated on early European investment in infrastructure.

The findings from this thesis illustrate the central role that mātauranga and tikanga Māori have in enhancing the wellbeing of Māori. It shows how this cultural knowledge operates as a source of resilience for Māori, with it having the potential to support healing from historic trauma; trauma which continues to affect the wellbeing outcomes of contemporary Māori. Thus, this thesis may be useful in the development of policies that contribute towards improving the wellbeing outcomes of Māori through the cultural empowerment of whānau, hapū and iwi.

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## Disclaimer

I pledge that this thesis is that of my own work in accordance with the University's policies and guidelines. The views expressed within this thesis are that of my own and represent my personal position and understanding of the thesis topic. Any information that has been referenced does not necessarily represent the views or position held by those of any person, employer, organisation or company mentioned, nor those of whom are acknowledged. Thus, I am responsible for all assumptions and opinions and any errors or inconsistencies that exist within this thesis.



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## Chapter 1 - Introduction

### 1.1 Context

Previous literature has outlined the impacts that the colonisation of New Zealand has had on Māori and how these impacts persist within modern society through the intergenerational trauma caused by historic injustices (Reid et al., 2017; Wirihana & Smith, 2014). Many Māori still experience the impacts of colonisation in the forms of political and economic deprivation, poor physical, mental and social health, and through cultural alienation and the degradation of te reo Māori (the Māori language) (Anaru, 2011; Ka'ai-Mahuta, 2011).

An important aspect critical to te ao Māori (the Māori world view) that was lost during colonisation was whenua (land). Through Crown purchases under pre-emption rights, land confiscation (known as the Raupatu) through the New Zealand Settlements Act 1863, and land title individualisation and private acquisitions through the Native Land Court, Māori had most of their lands alienated from them (Bennion et al., 2009; Durie, 1998), with Māori freehold land today comprising roughly 1.4 million hectares, approximately 5 per cent of New Zealand's land area.

### 1.2 Study Objectives

This thesis examines whether iwi-specific historical land alienation, through both purchase and confiscation, explains variation in current economic, social and cultural outcomes for people from different iwi, as well as whether outcomes differ between iwi depending on the type of alienation that occurred. To investigate these issues, data on historical land acquisitions defined using traditional iwi boundaries (rohe) of each iwi need to be matched to data on economic, social and cultural outcomes for current iwi members (noting the need to consider multiple iwi affiliations).

### 1.3 Scope of the Study

This thesis examines the historic experiences of iwi in Aotearoa New Zealand and the relationship these experiences have with current wellbeing outcomes. As a result, this thesis includes geospatial data on iwi rohe, changes in iwi landholdings over time, changes in land alienation to each iwi's rohe, changes in iwi population/affiliation statistics over time, and a range of socioeconomic and cultural wellbeing measures by iwi.

## 1.4 Hypothesis

This thesis hypothesises that contemporary cultural wellbeing outcomes will be positively linked to the retention of land, given the important role that whenua has in te ao Māori. Economic outcomes may be subject to two competing forces: economic outcomes for iwi members may be enhanced by the retention of land, especially land with high economic capability, and the retention of iwi land in the 19<sup>th</sup> century may have led to reduced infrastructure development by the colonial government (as indicated in the 1880 Railways Commission report) since those governments considered it of less worth to extend infrastructure to land where there were few European settlers. Thus, some specific outcome measures that rely on infrastructure development may be relatively lower for iwi that retained more of their land. In addition, colonial investment in the late 19<sup>th</sup> century may have increased modern access to infrastructure (e.g., telecommunication access). This second prediction is based on previous literature on the historic path dependency of infrastructure (Apatov et al., 2018; Huillery, 2009; Michaels & Rauch, 2018).

## 1.5 Importance of the Study

This research will contribute to the literature surrounding both historic path dependency and indigenous historic trauma. While a lot of high-quality qualitative research has been conducted on these topics, little quantitative research exists (likely because of the lack of quantitative data readily available). The results from this work will contribute towards this quantitative research, supplementing the existing qualitative research.

The models that will be developed as a result of this research may also provide valuable insights into the cultural and economic value that reconnecting whānau (family) with their whakapapa (genealogy) and whenua has, particularly in regard to the impact that this will have on wellbeing outcomes and the socioeconomic development of iwi. Having knowledge of this will help in the development of policy targeted towards improving wellbeing outcomes for Māori, reducing inequalities between iwi, as well as between Māori and non-Māori.

## 1.6 Structure

Chapter 2 provides a historical background of Māori land, outlining the institutions, events and te Tiriti o Waitangi violations that led to the extensive amount of land alienation that Māori experienced, and illustrates the long-term impact that this had on Māori outcomes such as population decline and the disparities that contemporary Māori endure. It also considers previous research and literature concerned with the concepts of historic trauma, post-development theory, path dependency and Māori wellbeing.

Chapter 3 discusses the data that is to be used in the analysis, including where the data was sourced from and how the data was used and, in some cases, the methodology behind how the data was created. Chapter 4 presents the empirical approach and methodology. Chapter 5 outlines the results of the analysis including the relationship that Māori land ownership shares with LUC, as well as with contemporary cultural and socioeconomic wellbeing outcomes. Chapter 6 discusses the findings, limitations and gives recommendations for future research. Chapter 7 concludes.

## Chapter 2 - Background

The content of this chapter is intended to provide an overview of the historical context that surrounds Māori land alienation in New Zealand to give context for the following empirical analysis. Incorporating an understanding of this historical narrative as a preface to this research will provide a setting for which contemporary socioeconomic issues and disparities can be interpreted within (Mohatt et al., 2014). It does not look to homogenise the experiences of all Māori, nor does it provide an exhaustive account on the history of Māori land. This thesis respects that these historical events and influences have affected different iwi in different ways and have resulted in different impacts on various wellbeing outcomes. It is the goal of this thesis to analyse one of these key traumas, that being the alienation of Māori land, to assess whether it explains variation in current wellbeing outcomes between different iwi.

### 2.1 History of Māori land

This chapter provides a background to the history of Māori land, outlining key events and institutions that have been influential in forming the current landscape that exists within New Zealand society today. It explores the changes in a number of different wellbeing outcomes relating to the experience of Māori during this period, while also considering how these impacts continue to affect Māori and their land to this day.

#### 2.1.1 Concepts of Land Ownership

Before exploring the history of Māori land and the colonisation of Aotearoa New Zealand, it is important to develop an understanding of the theories and concepts held by both Māori and colonialists. Much of the history surrounding Māori land can be better understood within the context of these differing and somewhat contrasting views towards land.

Prior to the arrival of European settlers to Aotearoa, Māori land was communally owned, based on traditional Māori custom. In te ao Māori, Māori traditionally affiliate to different collective sub-groups, including whānau, hapū (subtribe) and iwi and it was through these collectives that communal ownership was based (Muriwai et al., 2015). In te ao Māori, whenua is seen as taonga (treasured possession in Māori culture) and holds significant importance in both a spiritual and economic context, with Māori considering themselves as kaitiaki (guardians) of taonga.

Considering a more philosophical perspective on the concept of land ownership in te ao Māori, as discussed in Durie (1998), land has many qualities which make it essential to human existence. Land forms an integral aspect of Māori identity at both a personal level and among whānau, hapū and iwi. Ties to the land form the foundation of relationships and connect people from generation to generation. Thus, the value of land is not only determined by usefulness as an economic resource but also by cultural significance and intergenerational value. Māori proverbs (whakataukī) help to illustrate the importance that whenua holds in te ao Māori (Pere, 2010):

**He kura tangata e kore a rokohanga, he kura whenuake rokohanga.**

*People die, are slain, migrate, disappear; not so the land, which ever remains.*

In contrast, European perspectives on land ownership revolved around individualism and property rights established through deeds. This perspective differs vastly from traditional Māori beliefs, where proof of ownership is determined by occupation and use. Determining the value of land is also different within the two perspectives, with the colonial view focused primarily on economic value as determined by the market rather than the cultural value that the land possesses.

This differing perspective of ownership and the failure of the British Government to recognise these differences led to many injustices towards Māori. One such example of this can be seen within the New Zealand Constitution Act 1852, in which suffrage was based in part on property ownership (Atkinson, 2012). The Act granted suffrage only to males who held individual title to property. Since most land held by Māori was communally owned, many Māori, including all Māori wāhine (women), could not vote.

Table 2.1-1 notes key attitudes toward land within Māori and colonial perspectives, highlighting the contrasting philosophies held in regard to different aspects of land ownership; aspects that would ultimately be the source of much conflict that has persisted throughout Aotearoa New Zealand's colonisation.



*Table 2.1-1: Māori and colonial attitudes to land*

	<b>Māori</b>	<b>Colonial</b>
<b>Ownership</b>	Collective (tribal)	Individual title
<b>Proof of Ownership</b>	Occupation, use	Deed of sale
<b>Significance</b>	Economic, spiritual	Economic status
<b>Transfer</b>	By conquest or abandonment or succession	By sale or lease or Crown directive
<b>Occupants</b>	Part-owners, trustees	Owners or tenants
<b>Classes of Land</b>	Ancestral (take tupuna), Gifted (take tuku), Conquered (take raupatu)	Freehold, Leasehold, Waste land/ arable land
<b>Utilisation</b>	Agriculture, Hunting, Resource management	Agriculture, Horticulture, Mining, Settlements
<b>Value</b>	Tribal identity and security for next generations	Market potential, Employment

Source: Table 5.1 of Durie (1998)

This vastly different philosophy and understanding of land ownership between Māori and colonials created a dichotomy that resulted in confusion, trauma and ultimately contributed to disparities within society today. Understanding these differing attitudes and the added cultural and spiritual importance that land has in tikanga Māori (Māori customs and practices) is crucial to understanding the impact that land loss had and continues to have on the intergenerational wellbeing of Māori.

The attempt and eventual success by colonialists to destroy communal ownership of land was the driving force behind this Māori land loss, with an attempt to legitimise this through legal imperialism and entrenching institutions and legislation within government structures, much of which breached te Tiriti o Waitangi. These legislative violations of te Tiriti o Waitangi will be discussed later in this chapter.

### 2.1.2 Transactions Prior to the Signing of te Tiriti o Waitangi

Prior to 1840, some Māori had entered land transactions with Europeans (Boast, 2008b). However, following a proclamation by Governor Gipps in early 1840, no future titles to land in Aotearoa New Zealand would be recognised unless derived from a Crown grant and that no existing European claims to land would be recognised until they had been investigated by the proper authorities (Bennion et al., 2009).

As a result of this, Land Claims Commissioners were appointed to investigate these pre-existing transactions and recommend which transactions should be ratified through Crown grants. Of the transactions ratified, where the Crown believed there to be evidence of a private land transaction between Māori and European settlers, Māori would no longer have a claim to the land. Thus, for the

purpose of this thesis, the time of the ratification of pre-treaty transactions will be considered as the timing of which the land was "officially" alienated from Māori ownership.

### 2.1.3 Crown Acquisitions

Between 1840 and 1865, the majority of land alienated from Māori was acquired through the Crown. Article 2 of te Tiriti o Waitangi included the pre-emption clause which gave the Crown the sole right to purchase land held under customary title from Māori. This clause was supposedly introduced, in part, to prevent private individuals from acquiring land from Māori through exploitative and unfair means. However, it also created a useful mechanism which the Crown could use to fund the colonisation process. In essence, what this pre-emption clause created was a monopoly which gave the Crown the exclusive ability to purchase land from Māori and resell it to European immigrants for a profit (Daamen, 1998).

In 1844, the government waived its pre-emption right as the growing demand for land by immigrating Europeans was outpacing the rate of which the government was purchasing land; something which was being hindered by a lack of government funds (Durie, 1998). However, it was soon reinstated in 1846 after the appointment of Governor Grey who began to more actively pursue policy which looked to accelerate the land alienation process following an increase in funding from the British Government (Boast, 2008a).

Under this pre-emption clause and through the entrenchment of colonial attitudes towards land ownership within institutions and law, a substantial amount of the land area of Aotearoa New Zealand was alienated from Māori, including almost the entire South Island (Te Waipounamu) and Stewart Island (Rakiura), and a significant amount of the North Island (Te Ika-a-Māui). Consistent with the differing attitudes held between Māori and Europeans towards land, these land sales required Māori landowners to sign a deed of sale, removing the customary title from the land and further undermining tikanga Māori perspectives.

### 2.1.4 The New Zealand Settlements Act and Land Confiscation

While the vast majority of Māori land alienations occurred through Crown purchases under pre-emption and the decisions made through the Native Lands Courts that followed, the most egregious treatment of Māori and their rights to land occurred through land confiscation under the New Zealand Settlements Act 1863 and the Suppression of Rebellion Act 1863, which were passed during the peak of the New Zealand Wars. These land confiscations are known by Māori as the Raupatu.

The Acts gave the Crown excessive powers to confiscate land from iwi who were deemed as being "engaged in rebellion" against the authority of the Crown since January 1st 1863, stating that by rebelling

against the Crown, they had forfeited the right to the possession of their lands that has been guaranteed to them by te Tiriti o Waitangi (Ministry for Culture and Heritage, 2020a). The Acts also did not clearly define what a "rebel" was, and as a result, lands were confiscated from both "loyal" and "rebel" iwi, despite the later proclamation that the land of these "loyal" iwi would not be taken, unless it was "absolutely necessary for the security of the country" (Hickford, 2008). Additionally, iwi that had land confiscated under these Acts were not entitled to any compensation.

These confiscations covered extensive areas throughout the North Island, impacting many iwi in areas such as Waikato, Taranaki, Bay of Plenty, Tauranga and Hawke's Bay. In total, roughly 3.25 million acres ( $\approx 1.3$  million ha) were confiscated, with the Taranaki and Waikato regions suffering the greatest losses; roughly 1.2 million acres ( $\approx 490,000$  ha) each (Durie, 1998). While some of this land was later returned, it was usually the land that was considered as being the lowest quality by European settlers and, in many cases, it was not returned to the correct owners (Boast, 2008d). The land returned was also not in the same title that it was previously. While the land when confiscated was held in customary title, the land returned now held the title of freehold land, in line with colonial attitudes towards land ownership (Bennion et al., 2009). This land conversion further contributed to the deterioration of Māori landholdings and Māori culture.

Many Māori and Pākehā (New Zealand Europeans) questioned the underlying motives behind these Acts, as some iwi who had rebelled against the Crown during the New Zealand Wars largely avoided land confiscations. Much of this land was difficult to access and deemed by European settlers as not being valuable. The way in which the Acts were enforced in respect to what land was actually confiscated seems to confirm the idea that the true reason for their existence was to acquire land for extending European settlement, with confiscations of Māori land targeted towards acquiring 'better quality' land (Coffin, 2016). Given the explicitly aggressive way in which these areas of land were confiscated, this thesis will identify the method in which land was acquired from Māori, whether that be through confiscation or "purchase"<sup>1</sup>, and examine whether this explains any of the variation in contemporary wellbeing outcomes that can be observed between iwi.

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<sup>1</sup> Note that "purchase" does not imply that the transaction was sanctioned by all members within the iwi (discussed in section 2.1.5).

### 2.1.5 The Native Lands Act and the Native Land Court

In 1862, the Native Lands Act was created, which gave European settlers the ability to purchase land directly from Māori, thus disbanding the government's pre-emption rights over land purchases. However, this changed following the establishment of the Native Land Court, which was one of the key products of the Native Lands Act 1865 (Ministry for Culture and Heritage, 2020b). The primary function of this legislation was to convert customary Māori lands to individual titles (from Māori customary land title to Māori freehold land title), allowing more land to be purchased by settlers for colonisation (Ministry for Culture and Heritage, 2016). Since Māori lands were typically held in collective ownership, the operations of the Native Land Court and the accompanying Native Lands Act facilitated the destruction of te ao Māori perspectives towards land, making no legitimate attempt to accurately reflect these perspectives. In addition to this, the loss of customary land title further undermined and dismantled Māori social structures, leading to "rapid Māori land loss and consequential impoverishment" (Boast, 2008c).

Many barriers existed within the process of land individualisation that made it difficult for Māori to retain their lands following conversion. One of the key customs established by the court was that no more than 10 owners could be named to a particular land block, regardless of the size of that land block. What this effectively did was dispossess any Māori individual or iwi from land where they were not recognised as one of the named owners. While the legislation did state that the title of land blocks greater than 2,000 hectares should be entrusted to iwi, the Land Court judges at the time deliberately avoided this until 1867 (Bennion et al., 2009). Those individuals who were recognised as named owners were thus legally recognised as the blocks' owners, effectively giving these individuals the ability to make decisions about the land, including selling the land if they chose to do so. This rule was later abolished in 1873, at which point all Māori with interests in the land became equal owners (Whaanga, 2012). However, this created further issues for Māori over time, as this change in legislation meant that the descendants of Māori landowners also became recognised as legal owners through their inheritance of the land. This was not a traditional Māori custom, but rather an attempt by the Native Land court to keep Māori freehold land individualised across generations and avoid having it be reabsorbed into a group or reverted back into Māori customary land (Kingi, 2008a). Over time, this has resulted in the further fragmentation of what little land remains in Māori ownership, with shares in these land blocks being split more and more with each passing generation.

### 2.1.6 Māori Land Today

The accumulation of these alienations over time means that as of 2013 figures, Māori land makes up only around 5 per cent (approximately 1.4 million ha) of the total area of Aotearoa New Zealand (Kingi, 2013). Much of the land that remains in Māori ownership today is of the "poorest" land quality for arable use. Roughly 80 per cent of Māori land is in the poorest land classes (Land Use Capability 5 - 8) (Harmsworth & Tahi, 2010). This land is limited in its range of productive uses and is not suitable for arable use, further reducing development opportunities for Māori. While it is important to consider the potential of Māori land from an economic perspective, it is also important to realise the cultural and spiritual value that this land has to Māori. The impacts of colonisation have persisted over time and continue to affect Māori and their land to this day. The added complexities that surround Māori land, due to fragmented ownership, complex legal structures, disproportionately high amounts of low-quality land and a lack of resources for development, mean that Māori landowners face unique and challenging obstacles moving forward.

## 2.2 Outcomes for Māori

The unjust and unlawful dispossession of Māori land throughout Aotearoa New Zealand's history has created an environment that has severely impacted Māori. This environment has had consequences on key economic, social and cultural outcome areas that make Māori advancement in a contemporary westernised New Zealand society difficult.

The acknowledgement of these impacts is something that has been expressed by the government within many subsequent Tiriti settlement documents, such as that discussed in the Waikato Raupatu Claims Settlement Act 1995, with the Crown acknowledging that land confiscations under the New Zealand Settlements Act 1863 were unjust and damaging to Māori over time, recognising the "crippling impact" they had on "welfare, economy and development". It also recognised the cultural and spiritual impacts of these confiscations, noting that they have caused feelings "akin to those of orphans" (Waikato Raupatu Claims Settlement Act, 1995, sec. 6). However, the fact remains that contemporary Māori experience worse socioeconomic outcomes than Pākehā, with these disparities being considered a constant reminder of the failure of the fulfilment of te Tiriti o Waitangi guarantee of citizenship and a signal that inequalities still exist within the institutions of contemporary New Zealand society (Cram, 2014).

### 2.2.1 Population Decline of the 19th Century

Around the period when the first contact was made between Māori and Europeans (between 1769 and 1777), the life expectancy of Māori at birth may have been more than 30 years, higher than the life

expectancy in Britain at the time (Reid et al., 2014). At the signing of te Tiriti o Waitangi, the Māori population was estimated to be around 80,000, around 40 times that of the European population of Aotearoa New Zealand (Statistics New Zealand, 2008). However, European immigration and settlement increased rapidly in the following years. During the period between 1861 and 1880, the population grew by 360 per cent as a result of this influx in European immigration. During this same period, the Māori population declined (Statistics New Zealand, 2008).

The influx of European settlers brought with it a host of virulent diseases of which Māori had little immunity. These epidemics greatly impacted Māori health, life expectancy, birth rates and consequently, the Māori population. The casualties and losses endured by Māori during the New Zealand Wars also contributed to this population decline, with over 2,154 Māori killed, not including the deaths of (kūpapa) Māori who fought alongside the British (Ministry for Culture and Heritage, 2019). The alienation of Māori land over this period, including land confiscations following the New Zealand Wars, led to overcrowding and extensive poverty on what land remained in Māori ownership, allowing these diseases to spread even more rapidly. In addition to this, resettlement sites also undermined the health of Māori, often lacking the levels of cleanliness that existed within traditional communities (Reid et al., 2014). By the end of the nineteenth century, the Māori population had halved, declining to its lowest point of 39,854 in 1896 (Appendix to the Journals of the House of Representatives, 1896). Sorrenson (1956) studies this historical relationship between land purchases and the effect on the Māori population, noting that the vast decline in the Māori population between 1865 and 1901 was strongly linked to the land sales and land confiscations that occurred over this period.

This thesis will attempt to add to this research by examining the relationship between Māori land loss and population decline suffered by individual iwi. However, this analysis may be limited as the quantity of historic data relating to iwi population change over time is minimal.

### 2.2.2 Economic Outcomes

The historical impacts of land displacement and disenfranchisement over time has had a devastating impact on the Māori economy, with this economic destruction contributing to intergenerational poverty (Karena, 2013). Māori are disadvantaged across many economic measures and experience poorer labour market outcomes compared to other demographics in Aotearoa New Zealand today. In 2019, the unemployment rate for Māori was the highest among all demographics, at 8.2 per cent, which was twice that of the national average (4.1 per cent) (MBIE, 2020). Employed Māori were overrepresented in lower-skilled occupations, such as those in the retail and construction industry, jobs which are vulnerable to

changing economic conditions (e.g., technological innovations, economic recessions). These labour market differences also contribute to the differences in income between Māori and non-Māori. In 2013, the median personal income for Māori was \$22,500, equivalent to 78.9 per cent of the national median personal income (\$28,500) (Statistics New Zealand, 2014). This inequality between the median personal income for Māori and the national median personal income worsened between 2006 and 2013, with the median personal income for Māori falling from 85.7 per cent of the national median income in 2006 to 78.9 per cent in 2013.

Labour market outcomes for Māori also differ widely among different regions, with inequalities between Māori and non-Māori persisting across most regions. In June 2019, the employment rate of Māori in Northland was 54.5 per cent, while in Wellington it was 67.5 per cent (MBIE, 2019). In the same quarter, the overall average employment rate was 60.2 per cent in Northland and 70.6 per cent in Wellington (Statistics New Zealand, 2019). Similar regional differences were also observed for Māori who were defined as not being in employment, education or training (MBIE, 2019).

These vast differences in labour market outcomes for Māori between regions may be partly due to urbanised regions having more employment opportunities available. Because of this, iwi with urban areas within their rohe may experience better outcomes across certain economic wellbeing indicators, relative to other iwi. It may also be that the development of these urban environments evolved from the development of earlier colonial settlements, which required obtaining Māori land during that early period. Hence, there may be an inverse relationship between the loss of Māori land, in particular land lost during the early colonial period, and certain economic outcomes for iwi. However, these same iwi may experience deprivation across other areas, including indicators around social and cultural wellbeing, resulting from the impacts of urbanisation and colonisation.

While this thesis is interested in exploring the intergenerational effects that historic land loss has in explaining the different economic outcomes between iwi, many of these outcomes are associated more strongly with Western notions of wellbeing and development and may not necessarily represent the aspirations shared by Māori. As in many indigenous communities, notions of capitalism did not exist within traditional Māori communities, centred around collectivism with whānau, hapū and iwi. It is for this reason that this thesis does not consider economic outcomes as being the most informative indicators of wellbeing for Māori in this analysis and why cultural wellbeing measures are likely to offer greater insight into the intergenerational effects of historic land loss. It also why the literature around Māori wellbeing is discussed later in this chapter.

### 2.2.3 Socioeconomic Outcomes

Whilst detrimental to Māori economic prosperity, the dispossession of land also had harmful effects on the social development of Māori. This has perpetuated itself across many facets of modern-day life and can be observed within the inequalities that exist between Māori and non-Māori among most socioeconomic indicators. Table 2.2-1 presents data on many of these indicators from 2013 and shows that across each of those listed, Māori experience lower rates; including school completion, telecommunication and motor vehicle access and much higher rates of unemployment, among other inequalities.

*Table 2.2-1: Socioeconomic indicators, Māori and non-Māori, 2013*

Indicator	Māori (%)	Non-Māori (%)
School completion (Level 2 Certificate or higher), 15+ years	45.1	64.3
Unemployment rate, 15+ years	10.4	4.0
Total personal income less than \$10,000, 15+ years	24.1	18.4
Receiving income support, 15+ years	30.4	13.8
Living in household without any telecommunications, all age groups	3.0	0.9
Living in household with internet access, all age groups	69.0	83.8
Living in household without motor vehicle access, all age groups	8.7	4.4
Living in rented accommodation, all age groups	49.5	27.5
Household crowding, all age groups	18.6	7.7

Source: Ministry of Health (2013)

Extending beyond the measures outlined in table 2.2-1, health is a key area in which significant inequalities exist for Māori. Māori are far more likely to suffer from obesity, with a greater prevalence of obesity among both adults (aged 15 years and over) and children (aged between 2 and 14 years). According to the 2018/2019 New Zealand Health Survey, 48.2 per cent of Māori adults and 15.5 per cent of Māori children suffer from obesity, compared to 30.9 per cent for all New Zealand adults and 11.3 per cent for all New Zealand children (Ministry of Health, 2019). Māori have a much higher prevalence of tobacco smoking, with Māori adults almost 3 times as likely as non-Māori adults to be a current smoker (42 per cent and 15 per cent respectively) (Ministry of Health, 2014). Rangatahi are also far more likely to smoke tobacco, with 7.2 per cent of young Māori (aged 14-15) reporting that they smoke daily, compared to 1.7 per cent of non-Māori in the same age group (Ministry of Health, 2014). Māori also suffer disproportionately from suicide, with recent figures showing that the Māori suicide rate had increased to 28.2 per 100,000 in 2018/2019 (from 23.7 in 2017/2018) and was roughly twice that of non-Māori



(Ministry of Justice, 2019). As a result of this and many other socioeconomic factors, Māori life expectancy is far below that of non-Māori. In 2013, the life expectancy at birth of Māori males and Māori females was 73.0 years and 77.1 years respectively. These figures were lower than life expectancy at birth of non-Māori males (80.3 years) and non-Māori females (83.0 years) respectively (Ministry of Health, 2018).

Child poverty is significantly worse among Māori children when compared to that of the total population. According to the Household Economic Survey 2018/2019, Māori children were significantly more likely to live in low-income households suffering from material hardship than that of the national level, with the Māori rate of children living in households that experience material hardship (23.3 per cent) being far greater than the national average (12.4 per cent) and over double that of the European figure (9.8 per cent) (Statistics New Zealand, 2020).

Racial discrimination is a driving factor in Māori disadvantage. Data from the 2011/2012 New Zealand Health Survey (NZHS)<sup>2</sup> found that Māori adults were far more likely to have had experienced any type of racial discrimination, with 27.5 per cent of Māori (aged 15+) reporting an experience of racial discrimination, compared to 14.7 per cent of non-Māori (Ministry of Health, 2012).

Racial discrimination is recognised as an important determinant of health and contributes to health inequalities observable between different ethnicities (Paradies et al., 2015). Previous research on this issue in the New Zealand context, using data from the 2002/2003 NZHS and 2006/2007 NZHS, has demonstrated the relationship between the self-reported experience of racial discrimination and ethnic health outcomes in New Zealand, with the results showing that racial discrimination is associated with worse physical and mental health outcomes (Harris et al., 2006, 2012). As a result, racial discrimination contributes to the health inequalities and risk factors between Māori and Europeans in New Zealand.

#### 2.2.4 Cultural Outcomes

The loss of land for Māori meant the loss of key economic resources, such as loss of access to awa (rivers), ngahere (forests) and mahinga kai (food resource areas). However, this also meant the loss of important cultural assets that contributed to many facets of te ao Māori, with these same rivers, forests and food resources also considered as important taonga (treasure). It also often meant that Māori lost access to

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<sup>2</sup> Concerning the prevalence of self-reported experience of ethnically motivated personal attack or unfair treatment on the basis of ethnicity ever in the person's lifetime.

urupā (burial grounds) and pā sites; areas which hold considerable cultural importance and are considered as tapu (sacred).

Whenua holds special importance to Māori and has a strong relationship with Wairau (spirituality) in Māori culture and a means of sustaining the wellbeing of each generation (Reid et al., 2016). Māori consider the whenua itself as a taonga and consider themselves as kaitiaki of taonga. These relationships form an integral part of Māori identity. The relationship that Māori have with whenua and the importance of kaitiakitanga (guardianship over the natural environment) are aspects of tikanga Māori that are vital in understanding the social and cultural impacts of Māori land loss.

Māori land loss has contributed to the intergenerational degradation of Māori culture and many of the socioeconomic deficits that Māori face are likely related to this cultural loss (Marie et al., 2008). The intergenerational impoverishment inflicted by land alienation has led to a deterioration of Māori cultural identity, whakapapa knowledge, te reo Māori, understanding of cultural heritage and understanding of tikanga (Karena, 2013). This intergenerational loss in culture can be seen when observing the differences in wellbeing measures between young Māori and old Māori, such as those within Te Kupenga; the Māori social survey (MacPherson, 2014).

The data from Te Kupenga shows evidence of this generational divide and the intergenerational impact that colonisation and the loss of whenua has had on Māori, with older Māori (those aged 55 and above) performing better than young Māori (15-24 and/or 25-35) across a host of cultural wellbeing measures.

Older Māori are more likely to know aspects of their pepeha with 49 per cent reporting knowledge of all aspects, compared with 28 per cent for those aged 15–24 and 39 per cent for those aged 25–34. They were more likely to have an ancestral marae (sacred meeting grounds) they thought of as their tūrangawaewae (place where one has rights of residence and belonging through kinship and whakapapa) and were also more likely to feel strongly or very strongly connected to it than younger Māori, with 49 per cent of older Māori feeling strongly or very strongly connected, compared with 25 per cent of Māori aged 15–24 and 31 per cent of those aged 25–34.

Te reo Māori is another important aspect of tikanga Māori and Māori cultural wellbeing. Similarly, as in the previous cases, older Māori are more likely to speak te reo well or very well, with 17 per cent saying that they could speak te reo Māori well or very well (compared to 8 and 11 per cent for younger demographics) and also more likely to have learnt te reo Māori as their first language (15 per cent compared with 8 per cent of Māori aged 15-34).

When considering whānau wellbeing, older Māori were the most likely to state they thought their whānau was doing extremely well, with 17 per cent stating as such (13 per cent for Māori aged 15–24 years, and 7 per cent for 25–34) and, on average, reported having larger whānau.

While these figures demonstrate the differences in cultural wellbeing measures between one or two generations of whānau, it may indicate the cultural wellbeing loss that has taken place through the colonisation period. The drop in te reo Māori proficiency of older Māori from 29 per cent to 17 per cent between 2001 and 2013 also helps to illustrate this (MacPherson, 2014).

Given the importance and interconnectedness between culture and whenua in te ao Māori, measures of cultural wellbeing will be vital to the analysis, as the impact of colonisation and the loss of whenua has had a detrimental impact on the cultural wellbeing of Māori over generations.

## 2.3 Literature Review

When considering the deficits and disparities that Māori currently experience in the context of the history of Māori land that preceded it, the question is raised as to what relationship is shared between historical injustices and contemporary outcomes of indigenous peoples.

This question has been addressed by a number of scholars in an attempt to identify the possible link that the disparities between indigenous and non-indigenous populations may have with the colonisation experience, discussed within the literature as historic trauma (Reid et al., 2014). This section of the thesis will discuss the literature surrounding historic trauma theory and place the Māori experience within it, emphasising the relationship within the context of Māori land loss.

### 2.3.1 Indigenous Historic Trauma

The colonisation of Aotearoa New Zealand has had a severe impact on the Māori population, having detrimental consequences on the wellbeing of Māori and contributing to the many economic and socioeconomic disparities that are observable between Māori and Pākehā (McCreanor & Moewaka Barnes, 2019; Robson & Harris, 2007). The perpetuation of the impacts of these injustices over time is conceptualised as historical trauma. Thus, this thesis examines the literature around historic trauma, both in an international context and the Aotearoa New Zealand context, and considers the contributions that this research may offer to historical trauma theory.

These negative consequences of colonisation are not unique to the colonisation of Aotearoa. Many Indigenous people from around the world have also suffered impacts to their intergenerational wellbeing

as a result of colonisation (Paradies, 2016), with significant research on historical trauma theory outlined through the experiences of American Indian and Alaskan Native (AIAN) populations.

Historical trauma is a concept originating from disciplines of history and psychology and is defined as cumulative trauma through emotional and psychological wounding, both over a lifespan and across generations, originating from group trauma experiences (Brave Heart, 2003), transmitted between generations through "physiological, environmental and social pathways resulting in an intergenerational cycle of trauma response" (Sotero, 2006, p. 95). The specific events that are the root cause of historic trauma can vary significantly between different indigenous populations, but, as discussed by Evans-Campbell (2008), they have three distinguishing features. First, the event is typically the result of deliberate actions enacted and perpetuated by an outsider, usually with destructive intent. Second, during the initial period when the event occurs, there is a widespread impact on the indigenous population and its varied communities, with many people within those communities being affected directly by the event. Third, there is an intergenerational impact resulting in high levels of collective distress within the contemporary indigenous communities as a consequence of the event. In many instances, the historical trauma resulting from such events is a consequence of colonisation, based on the cumulative dehumanisation of indigenous peoples (Bustamante et al., 2019). A field of literature related to that of historic trauma that should be noted is intergenerational trauma, which also recognises historic trauma events, but together with other traumatic events that are "not targeted with intention upon a particular group for social, cultural, ethnic, or political decimation or annihilation", such as natural disasters (Walters et al., 2011a, p. 175). When referring to "intergenerational trauma" within this thesis, this is in reference only to the intergenerational transmission of trauma resulting from historic trauma events.

The historical trauma response is the manifestation of this historical trauma, resulting in an emotional response or action from the affected group. The response to this intergenerational grief may manifest itself in a range of dysfunctional and self-destructive behaviours, such as anxiety, depression and, in severe cases, suicide, among many others (Brave Heart & DeBruyn, 1998). This historical trauma response is a result of historic grief, which when left unresolved or untreated, has intergenerational impacts that influence the learning environments of following generations, resulting in the grief being passed down through the indigenous population over time (Duran & Duran, 1995). Thus, the enduring stress from one generation can alter the health and wellbeing outcomes of the descendant generations. In addition to the literature that demonstrates how historical trauma can lead to negative mental health outcomes, there

have also been recent advances in epigenetic research that suggests historic trauma can manifest as "chronic and persistent" physical illness, such as diabetes (Walters et al., 2011b, p. 185).

However, historical trauma responses do not exclusively refer to situations in which negative outcomes result directly from a historic trauma event. There may be instances in which a historic trauma response develops as a form of resilience against the impacts resulting thereafter. Previous research has attempted to assess the role of culture as a means of combating trauma, with Muriwai et al. (2015) finding that high levels of cultural efficacy offered direct protective effects against negative psychological outcomes and other related risk factors for Māori. Thus, if historic trauma is left unaddressed, it could mean that the impacts resulting from the trauma and colonisation would continue to reverberate through to subsequent generations indefinitely, until a point in which active healing occurs (Gone, 2014). This highlights the recuperative functions that indigenous culture offers and how resilience strategies can be strengthened through the maintenance and revival of culture (Denham, 2008). However, the extent to which culture protects against other forms of trauma is less well understood.

The early conceptualisations of historic trauma theory to the American Indian and Alaskan Native experience forwarded by Brave Heart, and the scholarship into the intergenerational impacts that this trauma has on colonised populations, build upon the Holocaust literature and the research concerning the trauma experienced by Holocaust survivors and their children. Whitbeck et al. (2004, p. 120) discuss that initial studies into the "symptoms" of trauma experienced by Holocaust survivors identified "denial, depersonalization, isolation, somatization, memory loss, agitation, anxiety, guilt, depression, intrusive thoughts, nightmares, psychic numbing, and survivor guilt". When these "symptoms" were viewed collectively, they were given the term "survivor syndrome" and were thought to impair the parenting abilities of the individual suffering from this trauma. As a result, the following generation (i.e., the children of the Holocaust survivor) would also be impacted, "inheriting" some symptoms associated with the original trauma. Felsen and Erlich (1990) further demonstrate this intergenerational transmission of trauma. Their study, which examined a sample of children of Holocaust survivors against a control group of Jewish children whose parents have not directly experienced the Holocaust, found that the children of Holocaust survivors experienced significantly more self-criticism and a lower sense of self-worth. Hence, the research illustrates the intergenerational affect associated with the historic trauma experienced as a consequence of the Holocaust.

The parallels seen between the Jewish and AIAN experience shows that there is sound evidence within the literature supporting the theory that trauma resulting from a mass trauma experience is transmitted

intergenerationally (Fast & Collin-Vézina, 2010). This intergenerational impact causes the following generations to experience the consequences of the original trauma event. A contributor to the persistence of this intergenerational component of historic trauma is the presence of chronic stressors which can impair and debilitate the psychobiological responses of subsequent generations (Van der Kolk, 1994). One ongoing example of this in the case of many indigenous peoples is colonisation, which contributes to ongoing and cumulative stress to these communities.

More recent research has attempted to identify this historical trauma as an underlying condition that influences inequalities between different ethnic groups, particularly in regard to health inequalities. A study by Williams et al. (2008, p. S32) researching the association between racial discrimination and health outcomes, suggest that historical trauma events may act as macro stressors; a "large scale, system related stressor", similar to that of an economic recession. These race-related macro stressors were identified as a plausible reason why racial minorities experience mental and physical health disparities, with the trauma related to these macro stressors being transmitted across generations. These types of historical trauma events may be responsible for other types of inequalities between ethnic groups that exist today, but may also explain differences between sub-groups within an ethnicity if those different sub-groups experienced different historical trauma events.

While historical trauma literature tends to focus on the experience of indigenous populations, with a significant amount of the historical trauma theory outlined within the context of Native American communities, the effects of historical trauma on other non-indigenous communities have also been well documented. Significant research outlines the negative impacts that racial discrimination has had on the mental and physical health of African Americans (Franklin-Jackson & Carter, 2007; Landrine & Klonoff, 1996), with these communities suffering from intergenerational trauma as a result of slavery, institutional and interpersonal racism and discrimination. Similar studies attempting to measure the relationship between perceived discrimination and mental health outcomes have been conducted for indigenous populations. Whitbeck et al. (2002) found from a study of Native Americans that discrimination was correlated with suicidal tendencies and substance abuse. This study also looked at the impact that cultural sources of resilience, such as involvement in traditional activities, had on outcomes and found that the protective factors of these sources disappeared when individuals had experienced high levels of perceived discrimination. This demonstrates that racism and discrimination can impede the effectiveness of cultural responses to historic trauma as sources of resilience for indigenous communities.

Historical trauma can also refer to the trauma endured through the "systematic destruction or wilful neglect of the animals, plants, flora, fauna, soil, trees, and waterways" (Walters et al., 2011a, p. 180). As within many indigenous cultures, the natural environment has an important role in mental and physical wellbeing. Duran (2006) discusses the concept of historic trauma and "Earth wounding" with Native American elders. They explain that (during colonisation) the natural environment had been wounded and that "when the earth is wounded, the people who are the caretakers of the earth also are wounded at a very deep soul level".

Such concepts are important when considering the historic trauma experiences of Māori, where the natural environment and whenua holds an important place in te ao Māori. Through the colonisation of Aotearoa and the entrenchment of European law that alienated Māori from their land, similar historic trauma experiences were realised by Māori; an inevitable consequence given the contrasting concept of land ownership held by Māori and Pākehā at the time. These contrasts extended to differing economic and political ideologies, in which the European system was based around establishing capitalism, while traditional Māori society was centred around collectivism. Under this capitalistic regime, the "value" attributed to land was based on the market potential, viewed primarily as a resource which could lead to profit. Such notions of capitalism, which routinely view economic gains as intrinsically beneficial, were not shared within a traditional te ao Māori perspective (Moewaka Barnes et al., 2018). Ultimately, the Māori land alienations that occurred over this period were a realisation of this ideology coupled with a growing settler population and attributes of Western superiority. The acquisition of Māori land by European settlers ultimately resulted in the destruction of indigenous forests, drainage of wetlands and other development activities. These significant transformations of the whenua led to the degradation of many taonga within these rohe, upsetting the critical role that whenua has in cultural wellbeing and hauora (Māori philosophy of health and wellbeing) (McCreanor & Moewaka Barnes, 2019). These destructive acts against the whenua are a clear example of historic trauma as the intergenerational effects of these events continue to impact the hauora of contemporary tangata whenua (people of the land) who are bearing the burdens of European industrialism through environmental issues, while remaining largely disenfranchised from their land.

The majority of literature on the topic of historic trauma tends to be qualitative research. More recent studies have begun to contribute to a growing base of quantitative research connecting historic trauma to contemporary outcomes. Walters et al. (2011a) discuss the historical trauma associated with land-based displacement and how it manifests into differing health outcomes among a sample of American

Indians and Alaskan Natives. The findings from the study suggest that historical land-based trauma relating to land loss and forceable relocation may persist and become embodied in the mental and physical health outcomes of affected indigenous peoples. While the study could not conclude the direction of causality, due to the survey data being cross-sectional, the findings suggest that some land-based historical trauma factors, in particular, '*self-reported thoughts regarding land loss*', may lead to poor physical and mental health outcomes, with stronger statistical evidence to support the latter instance. These findings illustrate the continued impacts that land loss may have on the outcomes of those displaced.

More recent work has begun to build a base of quantitative research connecting other forms of historic trauma with health-related measures, such as mental health (Guenzel & Struwe, 2020) and smoking (Soto et al., 2015), but this is relatively new and limited. Additionally, the historical trauma literature primarily focuses on the physiological responses of the historic trauma. There is little research examining the relationship between physical health and historical trauma, nor the relationship that such historic trauma may have with other economic, socioeconomic, and cultural wellbeing measures.

Furthermore, little quantitative research could be found that assessed the Māori experience of colonisation and the resulting historical trauma caused, particularly in regards to land loss. Attempting to produce such quantitative research around this topic of historical trauma in order to conceptualise intergenerational impacts of historically traumatic events is likely to be met with a number of challenges (Sotero, 2006), both conceptually and practically from a data availability standpoint. The review of the historical trauma literature did not produce a consensus as to how to navigate such challenges. However, the addition of quantitative research to this field will provide new insights, acknowledging such limits.

There appears to be a tendency in historical trauma research to focus on the experiences and responses to historical trauma at an individual level, foregoing one of the main strengths of historical trauma theory in that it places historical contextualisation to these events of trauma (Reid et al., 2014). Research examining the factors that contribute to positive outcomes and resilience in indigenous communities identifies community level variables as being potentially beneficial for a significant amount of those people within the community (Fast & Collin-Vézina, 2010). Because many of the disparities that exist today between indigenous and non-indigenous communities were largely the result of government constructs that targeted and affected entire communities of people, understanding and interpreting these issues from a collectivist perspective may offer greater insights beyond what may be identified at the individual level. Given the complexity involved in historical trauma and the long-term intergenerational effects that



it has, research needs to expand beyond the individual level and consider the collective impacts that it has on affected groups, as well as the collective ways in which this trauma can be addressed.

This thesis will contribute to this historic trauma literature by attempting to quantify the relationship between the loss of whenua, an important aspect of tikanga Māori, and a number of different measures of wellbeing, by different iwi groupings. Previous literature has recommended that future research expand historic trauma theory in this way, by attempting to measure historic trauma events and investigating their "intensity, duration and time period of exposure for particular tribal populations" (Krieger, 1999, p. 310). This thesis will expand upon the historic trauma literature as it will have a focus on identifying the collective responses of iwi to a historic trauma event, that being, land loss. This may help to determine whether the magnitude of the historical traumatic event, proxied by the amount of land alienated, as well as how the land was alienated, persisted over time to the point where the historical trauma responses manifested in differences in socioeconomic and cultural outcomes between iwi. Where past research has examined the different outcomes between different ethnicities, this research will look at outcomes within an ethnicity, examining iwi related experiences of land loss and the corresponding historic trauma.

Another reason this approach is important is Māori have often been essentialised into a homogenous group identity in the past. By considering the impacts and outcomes of iwi resulting from land loss, we recognise the diversity between iwi within the Māori population and the resulting impact that this diversity may have in explaining the relationship between historic land loss and contemporary outcomes.

It is hoped that the findings from this thesis will further the understanding of the impact that the collective group trauma event of land loss has in explaining the variation between different wellbeing outcomes for iwi and, in doing so, potentially identifying those at risk of suffering from historic trauma. These insights could inform the development of culturally responsive, iwi-specific interventions, thus contributing to the strong evidence base supporting the importance of incorporating historical trauma theory into treatment and prevention interventions (Brave Heart, 2003). The research should also contribute to furthering support for the importance of Māori culture in Māori wellbeing.

### 2.3.2 Post-development Theory

The post-development literature is useful in considering colonisation within the context of historic trauma, with the post-development critique being that contemporary development theory is based on a pretence that the Western ideology of development accurately represents that of all people (Pieterse,

2000). Post-development thought challenges such ideas of development as being objectively desirable, claiming that these ideas are founded on a flawed tautology created to embed a notion of Western hegemony; something that is viewed as the principal goal of Western development (Rapley, 2004). Colonisation is centred around this same Western monocultural paradigm, with the paradigm perpetuating over time as a result of hegemonical perspectives, thus dominating the scholarship surrounding development theory. The implications this has for historic trauma theory is that it illustrates that historic trauma is not only a result of a historic trauma event, but that it is also perpetuated by the structures enforced by the dominant system. The trauma is intergenerational since the effects of colonialism and the political, economic, social and cultural structures that are instilled within it are intergenerational (Gagné, 1998). These intergenerational impacts of historic trauma are further exacerbated for those who have had their social and cultural support structures undermined and delegitimised by the very same system (Reid et al., 2014). Hence, the contribution of the post-development theory to historic trauma literature is that it brings greater awareness to the realisation that historic trauma is not just a result of historic trauma events (i.e. events that occurred in the past), but that this trauma continues to be endured, perpetuated by societal structures that still exist; structures of which were shaped by those historic events (Reid et al., 2014). Additionally, instead of viewing development as an objectively desirable goal, post-development theory proposes that it is instead an arbitrary concept that reflects the desires of its practitioners; it rejects the notion that there can or should exist a single model of development (Rapley, 2004).

The Māori experience of the colonisation of Aotearoa, from the initial trauma experiences through to the intergenerational impacts that continue to affect contemporary Māori, can be placed within this historic trauma literature and the contributions offered by post-development theory. The primary aspect of the trauma resulting from colonisation is that it is a result of the "subjugation of a population by a dominant group" (Sotero, 2006, p. 99), requiring four elements: "overwhelming physical and psychological violence, segregation and/or displacement, economic deprivation, and cultural dispossession". In New Zealand, colonisation led to the destruction of te ao Māori and the marginalisation of Māori sovereignty through aggressive land alienation, institutional racism, and forced assimilation (McCreanor & Moewaka Barnes, 2019). As a result, a large proportion of contemporary Māori experience traumatic events; a consequence of colonial oppression being "integrated into the psyche and soul of Māori" (Wirihana & Smith, 2014, p. 198). A 2005 study examining the lifetime prevalence of traumatic experiences found that of 502 Māori adults sampled, 65 per cent had experienced at least one traumatic event over the course of their life (Hirini et al., 2005). The Māori experience of colonisation can be defined within the criteria outlined by

Sotero (2006). What is most interesting about considering the Māori experience of colonisation within the context of Sotero (2006) is that the loss of land is implicit within each of the four elements, being perhaps the most fundamental and defining element of subjugation (Reid et al., 2014). The loss of land for Māori meant the loss of economic independence, culture and spiritual connection and political power; a result of changes in socio-political structures and institutions through the process of colonisation, many of which were focused on assimilating Māori into a Western societal structure. These assimilative policies further alienated Māori, as it meant that their ability to develop and participate fully in Māori culture was dependent on the dominating Western culture, reducing opportunities for them to thrive within te ao Māori (Moeke-Pickering, 1996). It is these systematic changes and the resulting structural poverty that underpin the conveyance of historic trauma for Māori, also interrupting the intergenerational transmission of tikanga, reo and mātauranga Māori (Pihama et al., 2014). These socioeconomic factors will not be adequately addressed within a dominating Western ideological framework that is culturally inept (DeSouza, 2008).

Given the historical trauma events that have been imposed upon Māori through colonisation, there is a clear need to develop a more detailed understanding of how "cataclysmic" historical traumatic events perpetuated by colonisation have impacted the intergenerational wellbeing of Māori, whānau, hapū and iwi (Pihama et al., 2014). This thesis contributes towards this research by exploring a significant trauma event suffered by Māori; the loss of Māori land. Previous research has identified conceptual and empirical links between historical trauma land-based displacement and health and wellbeing outcomes among other indigenous peoples (Walters et al., 2011a), illustrating the continued impact that this land loss has on the outcomes of those displaced. However, while the trauma event of the loss of Māori land is something common amongst all iwi, the amount of land loss, the periods in which it was lost and how it was lost differ between iwi. As a result, some iwi have suffered a greater number of traumatic events and therefore their experiences resulting from historic trauma may have differed. This thesis will examine whether iwi-specific historical land alienation, through both purchase and confiscation, explains any of the variation in current economic, social and cultural outcomes for people from different iwi. Given the explicitly aggressive way in which confiscated land was acquired, the thesis will differentiate between land alienations through confiscation and those through purchases, as the historic trauma and historic trauma responses may vary between the different types of land alienations and, thus, may have differing intergenerational effects on contemporary wellbeing outcomes.

While post-development theory is useful in outlining the colonial structures and processes that led to the current disparities observed between Māori and non-Māori and continue to perpetuate the historic trauma experiences of Māori, it does not aid in identifying the dynamic relationships and mechanisms via which the historical trauma resulting from colonisation is perpetuated and transferred between generations and across time (Reid et al., 2014). This thesis contributes to this literature by considering the impact that changes in Māori land ownership over time have had in explaining different current outcomes between iwi and the means through which these differences eventuate.

### 2.3.3 Path Dependency

Path dependency, defined broadly, refers to being in a position in which our choices and decisions depend not only on where we are now but where we have been and what decisions have been made in the past (Liebowitz & Margolis, 1999). Path dependency forms one of the key notions of evolutionary economics; a strand of economic theory which stresses that economies evolve over time through imperfect processes of learning and decision making (Nelson, 2009). With respect to this theory, the development of countries, regions and populated places are considered to be strongly path dependent, resulting in future opportunities and decisions being constrained or assisted by decisions made in the past (Saunders & Dalziel, 2014). Huillery (2009, p. 176) suggests that colonial investment in French West Africa during the early 20<sup>th</sup> century had "large and persistent effects on current outcomes", with contemporary education, health and infrastructure outcomes being "more specifically determined by colonial investment" in these areas.

When considering path dependency in the historic context of colonisation, one potential source of historic path dependency is that resulting from early colonial investments, particularly in the development of early colonial settlements and infrastructure. As previously discussed, Huillery (2009) found that early colonial investment predicted current access to infrastructure, with the paper finding that investment in infrastructure continued to be directed towards areas where previous investment had taken place during the beginning of the colonial period. Jedwab et al. (2017), using colonial railroad infrastructure in Kenya as a natural experiment, discusses how this infrastructure development causally determined the location of early European settlement, which defined the location of cities within the country in the post-independence period, suggesting that sunk investments and spatial coordination accounted for aspects of this path dependency. Vinciguerra & Frenken (2015) find that pre-existing transportation networks, particularly ports and railways, determined the locations of modern-day telecommunication infrastructure. Apatov et al. (2018) further this argument by examining the relationship between 1880

railway access and current fibre internet infrastructure in New Zealand, with the results suggesting strong path dependency with respect to topography, as those areas that lacked railway infrastructure during Aotearoa New Zealand's early colonial period were much less likely to have prioritised fibre access. This study also examined path dependency with respect to ethnicity, with it finding that Māori were slightly less likely to have access to fibre than other New Zealanders, suggesting a negative consequence of path dependency.

This thesis contributes towards this path dependency literature as it examines the relationship that historic Māori land loss has with a range of contemporary wellbeing outcome variables for iwi. Some of these outcomes may have aspects that are dependent on past colonial interventions and previous historical events. Given the need to acquire land to facilitate the development of early colonial settlements, the retention of iwi land in the 19<sup>th</sup> century may have reduced infrastructure development by the colonial government (as indicated in the Report of the Railway Commission 1880) since those governments considered it of less worth to extend infrastructure investment to land where there were few European settlers. Thus, some specific economic outcome measures that rely on infrastructure development may be relatively lower for iwi that retained more of their land, particularly during the period following the signing of te Tiriti o Waitangi. As a result of path dependency, colonial investment in the late 19<sup>th</sup> century may have reduced modern access to infrastructure (e.g., telecommunication access) for iwi who retained larger areas of their land during that early colonial period. Understanding these relationships will provide greater insight into the intergenerational impacts that historic land loss has had on the outcomes of iwi.

#### 2.3.4 Māori Wellbeing

Historic trauma has had a compounding effect on the contemporary outcomes of Māori, iwi, hapū and whānau, undermining many aspects of the wellbeing of these rōpū (groups) through complex and multifaceted channels (Walters et al., 2011a). This has resulted in contemporary Māori experiencing disparities across a host of socioeconomic wellbeing measures in comparison to Pākehā. While there is a desire to remove these disparities that are a result of historic injustices, there is also concern that the goal of wanting to remove the disparities that exist is about making Māori more like Pākehā, re-enforcing the colonial narrative that Western knowledge and culture is superior (Ten Fingers, 2005).

Universal perspectives of wellbeing are premised on the notion that all people have common definitions of wellbeing and, therefore, their wellbeing can be measured in similar ways (Duran, 2006). This echoes similarities to the aforementioned critiques offered by the post-development literature, with these

universal perspectives of wellbeing largely based on dominant Western ideologies of wellbeing, under the pretence that they represent the views and aspirations of all people (Pieterse, 2000). Assessments of wellbeing in such a way that are void of cultural considerations and fail to account for the socioeconomic context perpetuate the narrative of Western superiority while marginalising and disempowering indigenous minorities (Cram, 2014). While the universal nature of these measures may be useful for comparisons between ethnic demographics, their utility is confined for the very same reason (Duran, 2006). Thus, they fail to fully capture aspects of wellbeing that are unique to specific groups, such as those shared within indigenous communities. Additionally, some indicators of wellbeing may be measured differently when viewed from an indigenous perspective. For example, whilst poverty may typically be measured in economic terms when thought of in a Western framework, it may also be described by an inability to live a happy life according to cultural values when considered through an indigenous lens (Carino, 2009).

Indigenous wellbeing can be defined broadly as a "simultaneously collective and individual intergenerational continuum" that is intertemporal, existing in the past, present and future (Walker et al., 2013, p. 208). Culture forms an integral part of wellbeing for indigenous peoples and connection to culture contributes to the resiliency of indigenous populations, especially in regards to the resilience of physical and emotional wellbeing (Fast & Collin-Vézina, 2010). A common finding across studies on the resilience of indigenous people through cultural and spiritual renewal is that enculturation in forms such as a belief in traditional culture and values and participation in cultural practices provide a buffer against adversity. The central role that culture has in building and maintaining resilience is shared by Māori, with "access to, awareness of and engagement in Māori cultural traditions (e.g. Tikanga Māori, Te Reo Māori, Whanaungatanga)" forming a protective function against many negative outcomes that Māori face (Muriwai et al., 2015, p. 14). There is also evidence of cultural efficacy contributing positively to aspects of subjective wellbeing for Māori (Houkamau & Sibley, 2011). Similarly, Williams et al. (2018) finds, from a study of 1699 Māori students, that Māori youth with a strong cultural identity were more likely to experience positive mental health outcomes. Consequently, these results show that the very element that colonisation delegitimised through assimilation policies and institutional structures that marginalised indigenous cultural values has ended up being vital to the wellbeing of indigenous peoples.

Land facilitates many functions that are fundamental to many aspects of wellbeing (Rao, 2018). The relationship that indigenous people share with the land and the natural world is profound within many cultures, with this strong sense of unity with the environment being perhaps the most defining aspect of

indigeneity (Durie, 2004). In te ao Māori, all life is seen as being born from Papatūānuku (the earth mother) with the land, whenua, being the placentas from her womb (Royal, 2007). Māori identity is strongly linked to the land, with iwi rohe and significant geographies within, such as mountains and rivers, forming an intrinsic part of individual and collective Māori identity (Moeke-Pickering, 1996). Cultural practices such as pepeha ("saying of the ancestors") embody this strong spiritual connection and encapsulate how Māori identity emanates from the land (Houkamau & Sibley, 2010). Other forms through which these epistemologies are expressed within te ao Māori are through waiata (song), whakataukī and te reo Māori, among others (McCreanor & Moewaka Barnes, 2019). Given the importance that land has in Māori culture and identity, the loss of land during the colonisation of New Zealand had had a detrimental impact on the wellbeing of Māori. For Māori, culture and identity are constructed on the reciprocal relationship between whānau and whenua. Not only does the ownership of land contribute to the wellbeing of contemporary Māori, but it also represents the physical heritage that will be available to future generations (Durie, 2006). Thus, the loss of whenua during the early colonisation period compromised not only the intergenerational economic wellbeing for Māori but also cultural and spiritual wellbeing. This land loss separated and destabilised whānau, hapū and iwi and the place-based identities central to these rōpū, interrupting the transmission of cultural knowledge. It contributed to cultural erosion, identity damage, and inevitably led to an overreliance on the dominating colonial economic model centred around capitalism (McCreanor & Moewaka Barnes, 2019). Ultimately, this had a physical and mental toll on Māori, for whom "displacement from land is akin to being stripped from one's family of origin" (Walters et al., 2011a).

The definition of wellbeing is broad, encapsulating more than just health outcomes. Māori wellbeing as discussed within this thesis considers the diverse range of economic, social, environmental and cultural aspects important in te ao Māori that contribute to overall wellbeing. To capture these aspects, it is important to consider how Māori wellbeing is measured. Durie (2006) describes four principles that are fundamental for measuring Māori wellbeing: *Indigeneity*, *Integrated development*, *Multiple indicators* and *Commonalities* (Table 2.3-1).

Table 2.3-1: Principles for measuring Māori wellbeing

Indigeneity	Integrated development	Multiple indicators	Commonalities
Human wellbeing is inseparable from the natural environment	Māori development is built on economic, cultural, social, and environmental cohesion	A range of measures are necessary to assess outcomes for Māori	Despite diversity, shared characteristics act to bind the Māori population

Source: Durie (2006)

'*Indigeneity*' represents the important relationship that Māori share with the natural environment, Papatūānuku. Considering these cultural aspects alongside the negative consequences of colonisation, such as historic land loss, will therefore provide a more comprehensive, culturally responsive articulation of contemporary Māori wellbeing outcomes (Cram, 2014). '*Integrated development*' reflects the importance of analysing the complex interactions that exist within Māori wellbeing and how identifying and understanding these explanatory pathways is necessary for Māori development. '*Multiple indicators*' represents the need for a variety of indicators that encapsulates many aspects of Māori wellbeing. '*Commonalities*' acknowledges that while Māori are far from a homogenous group, there are a number of aspects common across the Māori population, making it "sufficiently well-grounded to justify conclusions about the population as a whole and the associated resources that are part of the collective Māori estate" (Durie, 2006, p. 14). These principles show that in order to measure Māori wellbeing, a holistic approach that reflect Māori world views and emphasises the central role of culture is needed.

To capture these aspects, data from Māori-specific indicators of wellbeing will be needed. One strong source where this data is available is within *Te Kupenga*. In 2013, Statistics New Zealand carried out Te Kupenga for the first time, "collecting information on a wide range of topics to give an overall picture of the social, cultural, and economic well-being of Māori in New Zealand" from 5,549 participants from 89 individual iwi (Statistics New Zealand, 2016). The survey came to fruition following extensive discussion and consultation with Māori about their data needs, with it representing a significant step forward in learning about Māori-centred approaches to wellbeing (Cram, 2014). It also offers insights in understanding collective approaches to wellbeing that better reflect Māori values (Kukutai et al., 2017). The survey provides information on four key areas of Māori cultural wellbeing: wairuatanga (spirituality), tikanga (Māori customs and practices), te reo Māori (the Māori language), and whanaungatanga (social connectedness) (Statistics New Zealand, 2016). Hence, Te Kupenga represents a strong source for indicators specific to Māori wellbeing.



This thesis will analyse the complex interactions that exist within Māori wellbeing by building an understanding of the role that historic land loss has as a potential explanatory variable. It is anticipated that this thesis will provide meaningful evidence into the important role that tikanga Māori approaches have in contributing to the resilience and improvement in Māori wellbeing. Given the intrinsic role that whānau holds within Māori culture, this thesis will collate a range of cultural wellbeing measures to use as outcome variables within the analysis of this thesis.

This thesis will focus on the use of cultural wellbeing measures within the analysis, as these measures are more encompassing as being statistics *for Māori*, rather than statistics *about Māori*, as is typically seen as the case with traditional economic wellbeing measures (Coutts et al., 2016). As discussed by Coutts et al. (2016), statistics *for Māori* contribute Māori perspectives towards the measures of Māori wellbeing, with a focus on encompassing the many aspects within te ao Māori which makes them unique, while statistics *about Māori* are more concerned with assessing the comparative development *of Māori* with other population groups. While there is a role for the latter type in understanding inequality in New Zealand and informing decision making, these statistics do not capture the many facets that make Māori unique, including their aspirations as to what development entails within a Māori perspective.

While the emphasis within the quantitative research of this thesis will focus primarily on cultural wellbeing outcomes, given the central role this has in defining Māori wellbeing, it is also interested in understanding what relationship may exist between historic land loss and other wellbeing measures, as there may be variables that have a historic aspect to them, in which a relationship could be explained through a past historic event. There is evidence within the literature to suggest that economic indicators, such as income and poverty measures, are strong predictors of the cognitive development of children and that the effects of poverty are therefore intergenerational and cumulative (Duncan et al., 1994). Having knowledge of such relationships will provide a greater understanding of the intergenerational impacts that historic land loss has had on the outcomes of iwi.

## Chapter 3 - Data

### 3.1 Iwi Population/Affiliation Data

This thesis uses iwi affiliation data of 132 individual iwi groups and 180 total iwi categories from the 1991 and 2013 New Zealand censuses. The iwi affiliation data pertaining to 2013 was retrieved from the Statistics New Zealand *NZ.Stat table viewer* (Statistics New Zealand, n.d.-b). The iwi affiliation data pertaining to 1991 was retrieved from the *Stats NZ Storehouse*, under *Census of Population and Dwellings 1996* (Statistics New Zealand, n.d.-a).<sup>3</sup>

The thesis also uses iwi population data from the 1874 and 1881 censuses that was retrieved from the *Appendices to the Journals of House of Representatives (AtoJs) Online archives* within digitised copies of the *Census of the Maori Population* (for 1874 and 1881). Since the listed iwi in this historical census did not perfectly align with the individual iwi listed within the modern census and iwi codes, the population figures within the historic census were mapped to an individual iwi outlined in the 2018 Stats NZ iwi census codes, within which there are 132 individual iwi. The mapping process was based on the history of that particular iwi, which was informed by *Ngā iwi o Aotearoa - Māori Peoples of New Zealand* (Te Ara Encyclopedia of New Zealand, 2006).<sup>4</sup> This process captured 98.6 per cent of the iwi population figures within these two censuses.

There are a number of complexities with creating this dataset in relation to both the historic and modern census data. One is that the definition of what an iwi is has changed over time, from something used to define ethnicity to something that is part of identity, through self-identification. There are also some instances of hapū becoming iwi over time. The method in which the historical iwi were mapped together with modern iwi takes these cultural considerations into account.

There are also a limited number of years where iwi population data is available since, after the 1901 census, the collection of an individuals associated iwi was abandoned and not reintroduced until 1991, so for those 90 years, data regarding iwi affiliation does not exist. There is also missing data within the time

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<sup>3</sup> Some individual iwi categories do not have data available in previous census years because those iwi categories did not exist during that particular census. There were 8 new iwi categories added between the 1991 census and the 1996 census, 13 between 1996 and 2001, 3 between 2001 and 2006, 1 between 2006 and 2013 and 36 between 2013 and 2018.

<sup>4</sup> This methodology, along with many other aspects of the methodologies used in creating the data for this thesis, have been omitted for succinctness.

frame that is available, such as in instances where an iwi was categorised in one year but not the next, thus they do not have data over all available years.<sup>5</sup>

In modern censuses, an individual can list multiple iwi. Thus, the modern figures show data on iwi affiliation, while the historic censuses show the population of Māori by iwi. The two definitions cannot be directly compared. In the 1991 census, individuals could list up to three iwi affiliations and since the 1996 census have been able to list up to 5 iwi affiliations in each census. Appendix table 1 shows the census questions and definitions relating to iwi affiliation throughout each of these censuses. Over the course of these censuses, the number of people associating with multiple iwi has increased. Appendix table 2 outlines the changes in the number and proportion of the iwi identified population by number of iwi specified from 1996 to 2013.

The last complexity is a result of the unspecific categories that exist within the modern iwi codes, as changes in these categories may create an artificial sense of iwi affiliations changing over time. These complexities were the primary reason for aggregating individual iwi groups together in a number of cases.

Iwi were aggregated together so that the iwi population dataset that was created using the historic Māori censuses would be more stable and show less unexplained variability over time. These aggregations were made based on research of the respective iwi, tracing their lineage through associated iwi and hapū, tribal waka and tribal ancestors to find another iwi to associate and aggregate an iwi with, after taking consideration of and giving due respect to their cultural history. Additionally, rohe of respective iwi were able to be aggregated together. In total, there were 29 aggregated groups, which captured 102 individual iwi. An additional 24 individual iwi were not aggregated as they had no missing or inconsistent data over time.

Of the 132 individual iwi categories, only 6 could not be captured.<sup>6</sup> Although it was desirable to aggregate these individual iwi groups together with another iwi, no appropriate relationship could be found between them and any other. None of these iwi have iwi population data pertaining to the historic census years.<sup>7</sup>

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<sup>5</sup> Iwi population data for the census years of 1878, 1996, 2001 and 2006 were accessed and mapped to the 2018 iwi codes, but were not used within the analysis.

<sup>6</sup> This comprised Ngāpuhi ki Whaingaroa-Ngāti Kahu ki Whaingaroa, Ngāti Rāhiri Tumutumu, Ngāti Ranginui, Ngāti Whitikaupeka (Rangitikei), Ngāi Te Ohuake (Rangitikei) and Ngāti Tamakōpiri (Rangitikei).

<sup>7</sup> These iwi were omitted from this section of the analysis because of this, but were included in analyses relating to the modern census figures. They represent 1.11 percent of total iwi affiliations between 1991 and 2013 censuses.

Finally, it is important to note that while this information of iwi affiliation/population data is informative and useful, it does not fully account for the diverse and interconnected dynamics that contribute to the formation of Māori collective groupings. There may be contrasting opinions as to what constitutes collective identity and how such identities manifest over time (O'Regan, 2001). Thus, the information captured within this data may not fully encapsulate these complex dynamics.

### 3.2 Iwi Rohe Geospatial Data

Geospatial data regarding iwi rohe boundaries was obtained online from the Te Puni Kōkiri (TPK) online mapping platform (Te Puni Kōkiri, 2018).<sup>8</sup> It should be noted that these rohe areas are not areas that these iwi claim ownership over in a legal sense, but rather areas that they claim kaitiakitanga over. It should also be noted that these rohe areas are not mutually exclusive.

This geospatial data was mapped to the iwi population data by cross-referencing the iwi names listed within the attributes table of the iwi rohe geospatial dataset with those listed within the iwi population dataset. The iwi classification codes in the population dataset were then mapped with the ID codes in the geospatial dataset. This allowed the iwi population statistics to be associated with the rohe area of each respective iwi.<sup>9</sup>

Of the 132 iwi categories in the population data, only three iwi were uncaptured and did not have a rohe area associated with them. The rohe of Ngāti Whitikaupeka (Rangitīkei), Ngāi Te Ohuake (Rangitīkei) and Ngāti Tamakōpiri (Rangitīkei) are not represented within the TPK geospatial dataset. However, since there was information about these iwi and their rohe available through Tiriti settlement documents within the Mōkai Pātea Waitangi Claims Trust Draft Mandate Strategy (2017), it was possible to capture these three iwi within the rohe dataset through map digitisation of these Tiriti settlement documents. Thus, the rohe of these three iwi could be added to the geospatial dataset.

The iwi rohe geospatial dataset defines within it iwi 'areas of interest', which includes iwi rohe areas, but also other areas of interest for iwi, such as rohe areas that represent groups of iwi/hapū that have joined

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<sup>8</sup> This geospatial dataset was last updated on May 21<sup>st</sup> 2018.

<sup>9</sup> Although iwi population and affiliation statistics can be associated with iwi rohe geospatial data, this does not imply that the iwi population statistics mapped to a particular iwi rohe existed exclusively within that rohe at that point in time.

together for Tiriti o Waitangi settlement negotiations. There are 8 such cases in this geospatial dataset, which have been removed as they did not represent a rohe area of an individual iwi groups<sup>10</sup>.

The result of this work is a geospatial dataset showing iwi rohe areas of interest for 103 iwi groups.<sup>11</sup> The iwi aggregations are also applied to the iwi rohe geospatial dataset. This produced geospatial data of the aggregated iwi rohe areas of interest of 52 aggregated iwi groups.

### 3.3 Māori Landholdings

*Māori land* refers to the legal definition (of the status of land) that is provided by section 129 of Te Ture Whenua Maori Act 1993, which defines Māori land as holding the land status of either Māori freehold land or Māori customary land. Māori freehold land is land where Māori customary land has been converted to freehold title by the Māori Land Court or its predecessors, most of which occurred through the Land Courts during the 19<sup>th</sup> and early 20<sup>th</sup> centuries. Thus, this land has always been in Māori ownership. Most Māori freehold land was created by the Land Courts in the 19th and early 20th centuries in an attempt to convert communal ownership (Māori Customary Land) to individual title. Māori customary land is land held by Māori in accordance with tikanga Māori. Before the arrival of European settlers, all land was held as customary land. Hence, this land has never been converted to Māori freehold land by the Land Courts. Very little Māori customary land exists today. Thus, the use of the term "Māori land" throughout this thesis refers to land that holds the status of either Māori customary land or Māori freehold land.

Geospatial data showing Māori landholdings at various points in time including 1840, 1864<sup>12</sup>, 1880, 1890, 1910 and 1939 are used in this thesis. This geospatial dataset was created as a result of extensive work through map digitisation using geographic information system (GIS) software. The map images that were digitised are those used in the New Zealand National Library's He Tohu exhibition. These map images were provided and permitted for use by Click Suite; the company that produced the exhibition and which claims legal ownership of these source images (E. Loughnan, personal communication, 2018). These images were a result of comprehensive research on Māori landholdings over time and are also based in part on the

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<sup>10</sup> The TPK codes associated with these areas include 91, 98, 107, 108, 113, 114, 116 and 118.

<sup>11</sup> Individual iwi defined in the iwi codes but not within the rohe geospatial dataset were grouped together with the iwi of which they are an associated hapū.

<sup>12</sup> This could be represented as being (late) 1864 or (early) 1865, but 1864 is used to emphasise that this snapshot of Māori landholdings was prior to the land confiscations that occurred under the New Zealand Settlements Act.

Waitangi tribunal's three-volume Rangahaua Whānui National Overview report. The images and corresponding maps demonstrate Māori land loss over this period, both visually and quantitatively.

Additionally, geospatial data from the Māori Land Court within the Māori Land Data Service was used. It shows Māori landholdings as of May 31<sup>st</sup> 2017 and is the most recent regarding current Māori landholdings. This geospatial dataset has been edited in accordance with the definition of Māori land previously specified. Within the attributes table of the geospatial dataset is the category "LAND\_STATU", which defines the land status of a particular land block. All land blocks that do not have the status of "Māori Freehold Land" or "Māori Customary Land" are removed, to ensure that this dataset is consistent with the definition of "Māori land" and with the other geospatial datasets from 1840 to 1939.<sup>13</sup>

Although these maps define the areas within them as being Māori 'land', many of them encapsulate water areas as well, which could include lakes, rivers, ponds, reservoirs and lagoons. Of particular interest here is Lake Taupo, which is captured in both the digitised historic maps as well as the 2017 Māori Land Court geospatial dataset. These water areas in some cases represent a considerable proportion of total 'land' coverage. Through the use of geoprocessing tools and using data pertaining to these water areas (National Map Data Service, 2019), these areas were removed from Māori landholdings.

Figure 3-1 represents the map images of these geospatial datasets of Māori landholdings with the water areas removed. Map A represents 1840, being the entirety of New Zealand. Map B represents 1864, map C represents 1880, map D represents 1890, map E represents 1910 and map F represents 1939 and map G represents 2017. These map images show a clear progression and reduction in Māori landholdings over this time.

The areas of Māori land that were confiscated have been mapped in figure 3-2. These include the confiscations that occurred in Waikato, Taranaki, Bay of Plenty, Hawke's Bay and Tauranga, which were "legitimised", in a legal sense, through the New Zealand Settlements Act 1863.<sup>14</sup>

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<sup>13</sup> The total area of these land blocks that do not have the status of "Māori Freehold Land" or "Māori Customary Land" accounts for 1.16 percent of the total area of the original 2017 Māori landholdings geospatial dataset.

<sup>14</sup> Some of this confiscated land was returned, although not always to the original owners.

The Māori landholdings geospatial dataset is linked with the iwi rohe geospatial datasets, for both individual iwi rohe and aggregated iwi rohe. After using geoprocessing tools, Māori land at various points in time within each iwi rohe is shown, which is used as a proxy for "iwi land".<sup>15</sup>

When intercepting the Māori landholdings with individual iwi rohe, there were a total of 103 individual iwi categories. Of these, Moriori and Ngāti Mutunga were omitted, both of which are iwi of the Chatham Islands. These islands were not captured within the Māori landholdings geospatial dataset.

Within the aggregated iwi rohe geospatial dataset, there were 52 groups (28 aggregated groups and 24 individual iwi).<sup>16</sup> From this process, four datasets showing Māori landholdings over time both in hectares and as a percentage of the rohe areas were generated. This includes Māori landholdings data, both with and without water areas removed, associated with both the iwi rohe boundaries and the aggregated iwi rohe boundaries.

Table 3.6-2 represents the Māori landholdings data associated with the aggregated iwi rohe boundaries with water areas removed. The "ID" column represents the ID code of the particular aggregated iwi rohe.<sup>17</sup> The column headed 1840 shows the land area of the aggregated iwi rohe in hectares<sup>18</sup>, with each figure representing 100 per cent of the aggregated iwi rohe area at that time. The remaining columns from 1864 to 2017 represent the percentage of the aggregate rohe that remained as Māori landholdings during the respective time period (as a percentage of the 1840 area figures).

### 3.4 Land Use Capability Index by Meshblock

Geospatial data with information on the Land Use Capability (LUC) rating by meshblock is used. LUC is a hierarchical classification identifier which summarises the land's general versatility for productive use. The LUC rating index is on an ordinal scale from 1 through 8, with a LUC rating of 8 being the least desirable land in terms of arable use (i.e., the land that has the most limitations and least versatility in terms of arable use). There are also categories that represent areas that cannot be captured within this classification. This includes lakes (l), estuaries (e), quarries (q), rivers (r) and towns (t). These areas have

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<sup>15</sup> Since many iwi rohe areas overlap, iwi can lay claim to the same areas of land. Hence, the total area of Māori land by iwi is greater than the total area of Māori land for a given year.

<sup>16</sup> The Chatham Islands iwi were again omitted.

<sup>17</sup> The individual iwi, iwi codes and TPK codes associated with each aggregated rohe ID can be found in table 3.6-1.

<sup>18</sup> To the nearest hectare. The total sum of these 1840 rohe areas will be greater than the total area of New Zealand since these rohe areas are not mutually exclusive.

been represented in the category, 'Other'. A description of each LUC class can be found in appendix table 3. LUC class within this dataset is used as a proxy for what would have been observed in 1840, as it is assumed that LUC class does not change significantly over time.<sup>19</sup>

This thesis is interested in the relationship between Māori landholdings and the LUC rating of meshblocks given that Māori land today is disproportionately more of this limited and "less productive" land relative to that of New Zealand. As discussed within the historic literature, most "good" land was alienated from Māori by the end of the 19<sup>th</sup> century (Coffin, 2016). Almost 80 per cent of current Māori land is categorised as being in one of the lowest three LUC classes, proportionally more than those classes' total percentage of 71 per cent.<sup>20</sup> This may be a result of historic path dependency. The majority of crown and private acquisitions in the 19<sup>th</sup> century may have been specifically targeted towards acquiring high-value land, resulting in Māori landholdings today being disproportionately 'low-value'. This may have had subsequent effects on Māori wellbeing outcomes over time.

Figure 3-3 represents the map images of these LUC classes by meshblock intersected with the Māori landholdings' geospatial dataset across the various points in history, thus showing a visualisation of changes in Māori land ownership while also taking into consideration LUC class. Map A represents 1840, being the areas of New Zealand that are captured within the LUC geospatial dataset.<sup>21</sup> Map B represents 1864, map C represents 1880, map D represents 1890, map E represents 1910, map F represents 1939 and map G represents 2017.

### 3.5 Cultural Wellbeing Measures by Iwi

Data on four different Māori cultural wellbeing measures with figures for individual iwi are used (Statistics New Zealand, 2018). The data is from the 2013 Te Kupenga survey and includes iwi-level estimates for each of these different measures. The four cultural wellbeing measures used here comprise: (1) *Te reo Māori proficiency (self-rated)*; (2) *Importance of involvement in Māori culture*; (3) *Visited ancestral marae in the last 12 months* and (4) *Ease of getting help with Māori cultural practices*. These measures are

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<sup>19</sup> This assumption is a limitation of the analysis. For instance, some classes of land, such as towns and quarries, are based on modern geography, but will still offer some interesting insights into changes in historical path dependency.

<sup>20</sup> These figures can be found in appendix table 3 along with a description of each LUC class.

<sup>21</sup> Many islands are not captured within the LUC class geospatial dataset, notably Stewart Island and the Chatham Islands.



important as they provide quantitative data on four key areas that contribute to Māori cultural wellbeing: te reo Māori, wairuatanga (spirituality), tikanga, and whanaungatanga (social connectedness).

The responses for these measures were reported as percentages. For the question regarding te reo Māori proficiency (self-rated), the responses were (1) "No more than a few words or phrases", (2) "Not very well", (3) "Fairly well" or (4) "Very well/ well". For the question regarding the importance of involvement in Māori culture, the responses were (1) "Not at all important", (2) "A little important", (3) "Somewhat important", (4) "Quite important" or (5) "Very important". For the question regarding whether an individual had visited their ancestral marae in the last 12 months, respondents could answer either (1) Yes (Āe) or (2) No (Kao). For the question regarding an individual's ease of getting support with Māori cultural practices, the responses were (1) "Hard/ very hard", (2) "Sometimes easy/ sometimes hard", (3) "Easy", (4) "Very easy" or (5) "Don't need help".<sup>22</sup>

Since this data is from 2013, not all iwi outlined within the iwi codes from the 2018 census will have cultural wellbeing data associated with them. Only the 89 iwi included in Te Kupenga 2013 are captured. As the Te Kupenga survey is a sample, the data available are estimates for each respective iwi.

Table 3.6-3 and 3.6-4 represent the cultural wellbeing measures data by iwi (in percentages). Table 3.6-3 includes the measures and responses to the question regarding (1) *Te reo Māori proficiency (self-rated)* (trmp) and (2) *Importance of involvement in Māori culture* (iimc). Table 3.6-4 includes the measures and responses to the question regarding (3) *Visited ancestral marae in the last 12 months* (vam) and (4) *Ease of getting support with Māori cultural practices* (esmcp). The 'IC' column represents the iwi codes associated with the wellbeing measure data.<sup>23</sup> Iwi and hapū which do not have cultural wellbeing data associated with them are not included in the resulting regression analyses.<sup>24</sup>

### 3.6 Socioeconomic Wellbeing Measures by Iwi

Data on 11 different socioeconomic wellbeing measures with figures for individual iwi are used, which were obtained through manual data scraping of individual iwi profiles from Statistics New Zealand (Statistics New Zealand, 2013). The data in these iwi profiles are from the 2013 census. These 11

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<sup>22</sup> The specific question relating to these measures be found in appendix table 4.

<sup>23</sup> These groupings are different from the aforementioned aggregations, with these IC groupings being used solely to group hapū with larger iwi for data purposes. The individual iwi, iwi codes and TPK codes associated with each IC can be found in appendix table 3.

<sup>24</sup> This is also the case in table 3.6-5.

socioeconomic wellbeing measures include (1) percentage of individuals within an iwi that lived in a household with access to a cell phone or mobile phone; (2) percentage of individuals within an iwi categorised as Regular Smokers; (3) percentage of individuals within an iwi that hold a bachelor's degree or higher; (4) percentage of individuals within an iwi that owned or partly owned the home that they lived in (weighted average); (5) percentage of individuals within an iwi living in Housing New Zealand accommodation; (6) percentage of individuals within an iwi that hold a formal qualification; (7) percentage of individuals within an iwi living in rental accommodation; (8) unemployment rate of an iwi; (9) percentage of individuals within an iwi that are in the labour force; (10) the employment rate of an iwi and (11) median income of an iwi (weighted average). Choices in the measures used were limited by the amount of information available in these Stats NZ individual iwi profiles. Wellbeing measures that are weighted averages refer to instances where the available wellbeing figures were weighted based on the 2013 iwi affiliation statistics for each respective iwi within an iwi grouping.

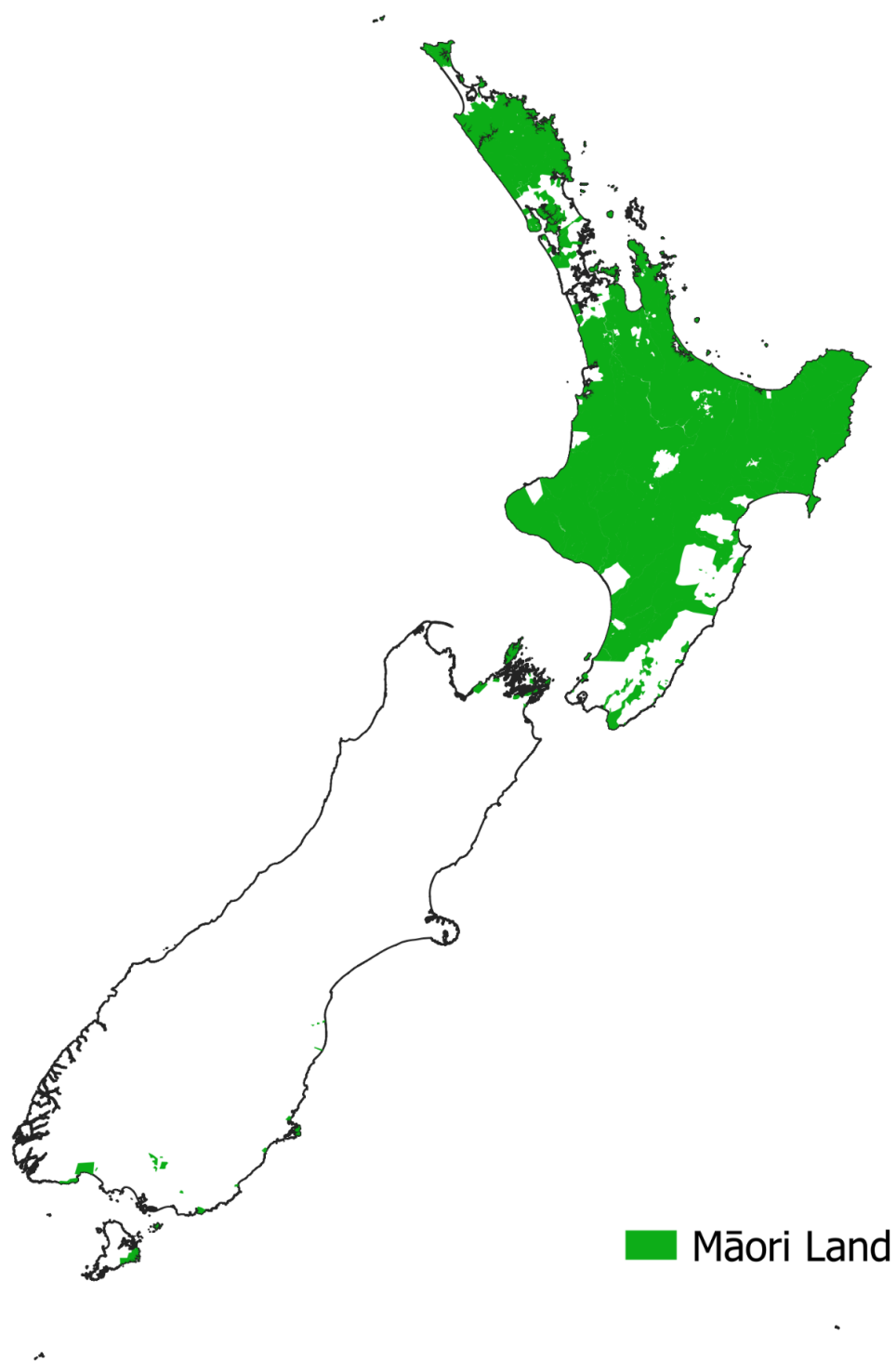
Table 3.6-5 represents the socioeconomic wellbeing measures data by iwi. As before, the 'IC' column represents the iwi codes associated with the wellbeing measure data. The numbers associated with each column correspond to the numbered socioeconomic measures mentioned above, from (1) through (11).

*Figure 3-1: Maps of Māori landholdings at various points in history*

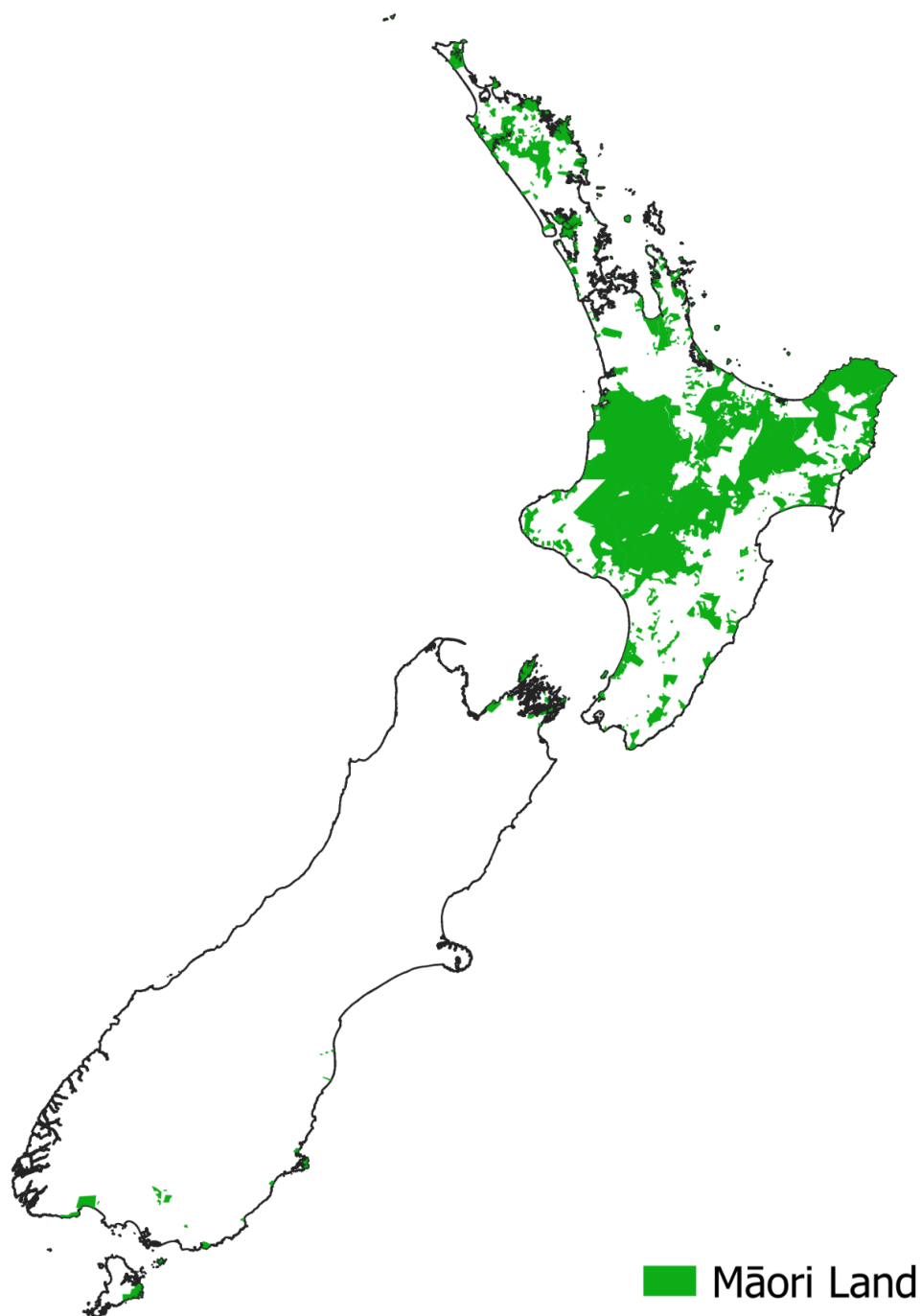
Map A: 1840 (i.e., all of New Zealand)



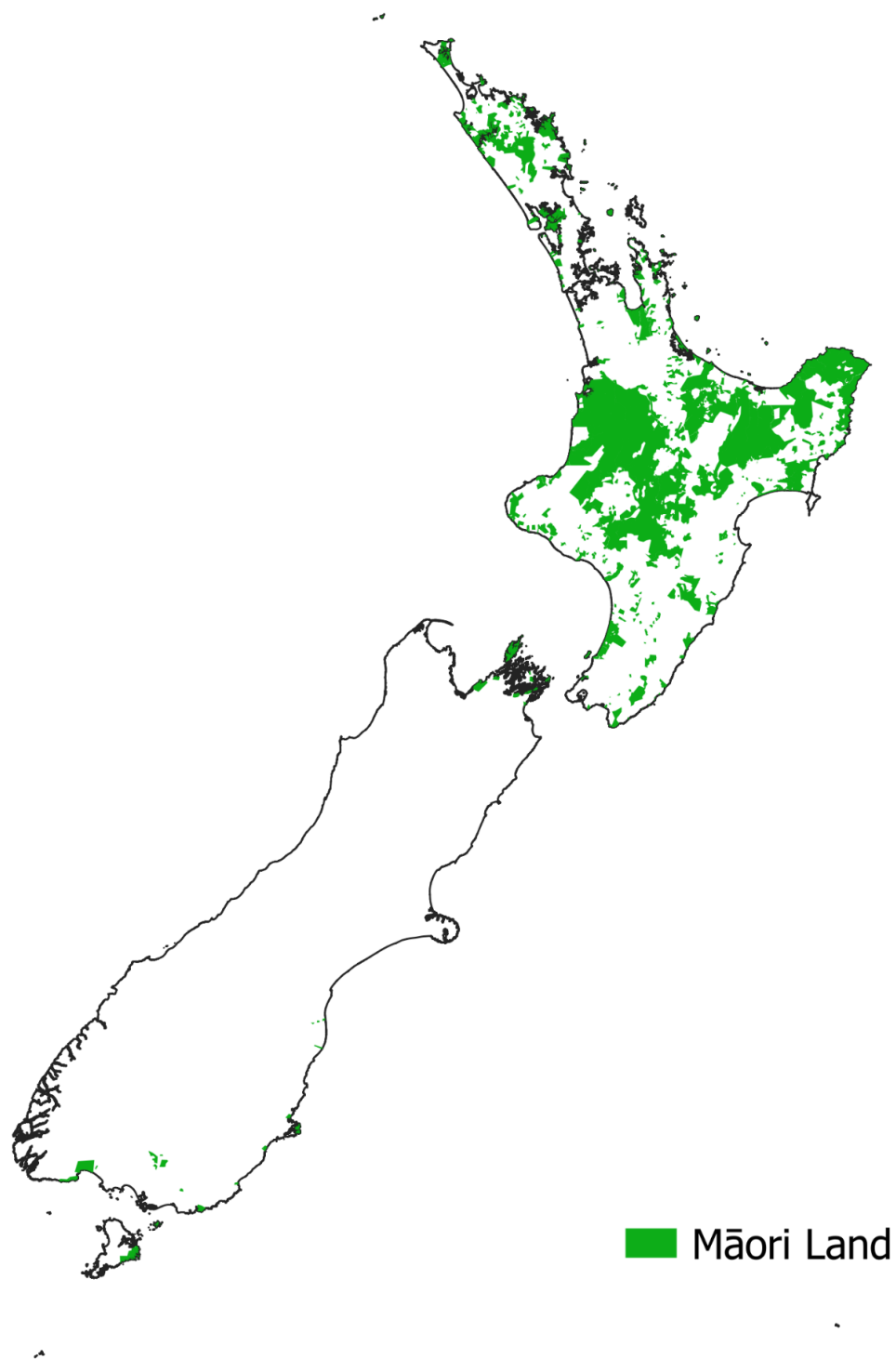
Map B: 1864



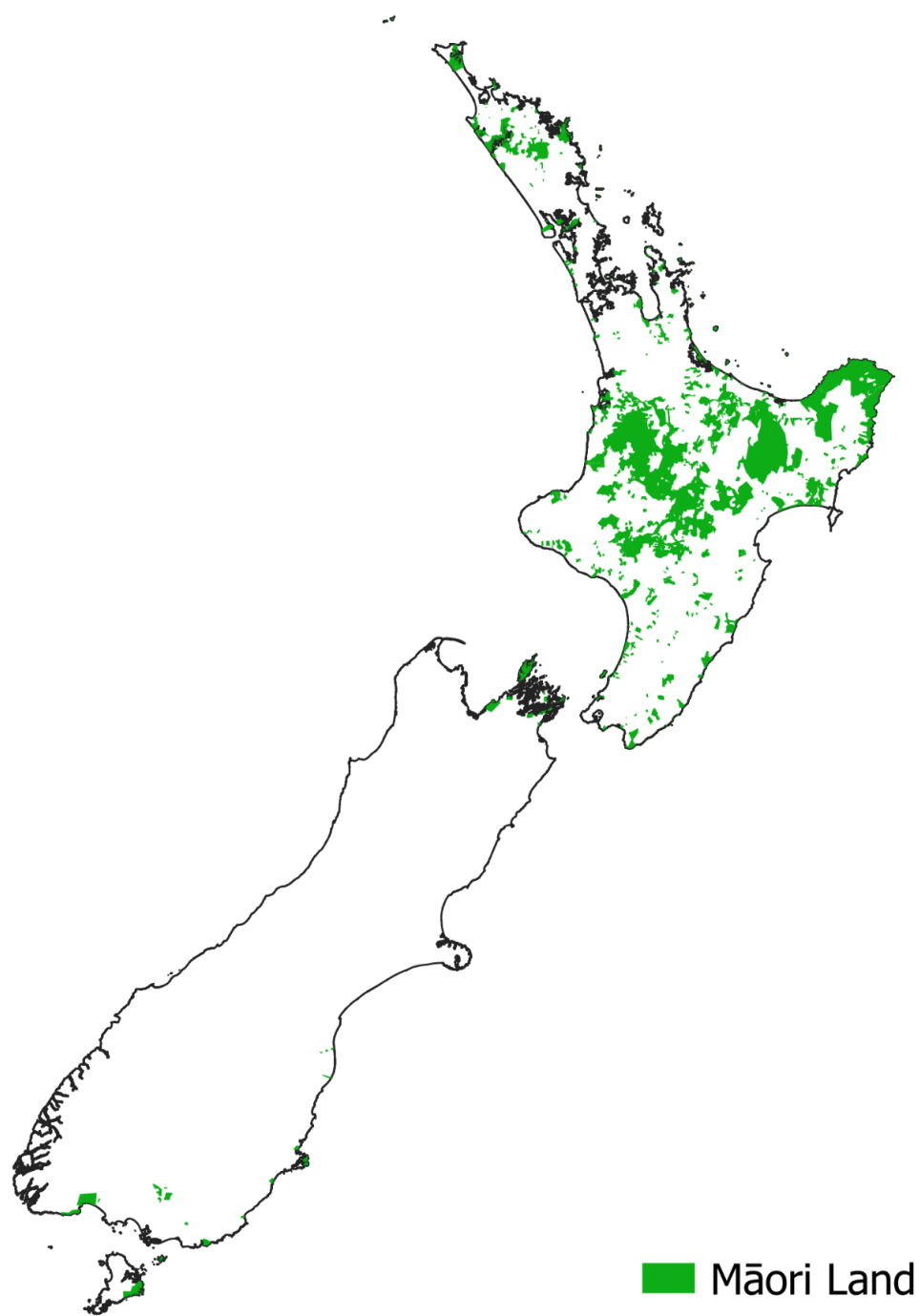
Map C: 1880



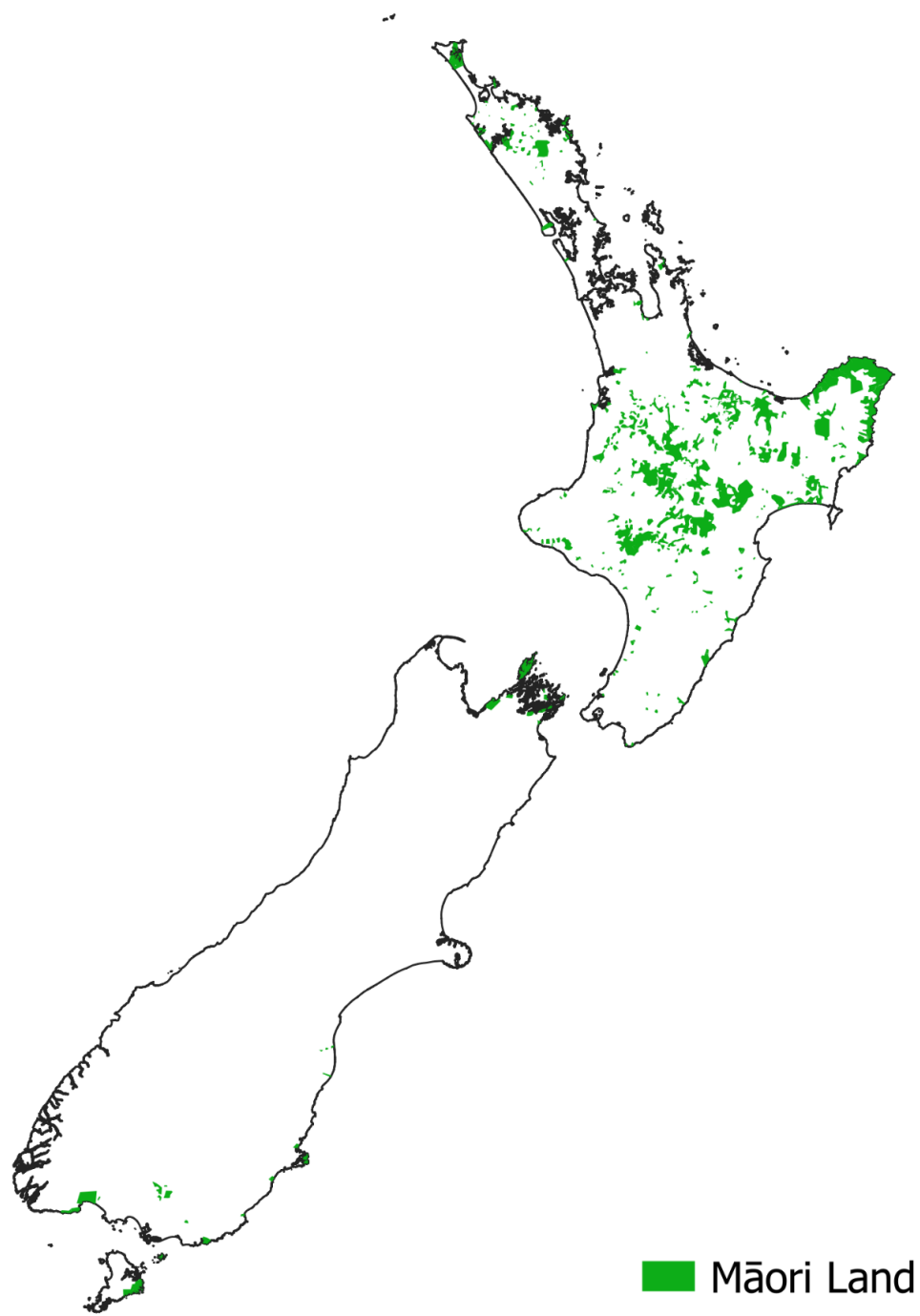
Map D: 1890



Map E: 1910



Map F: 1939





Map G: 2017

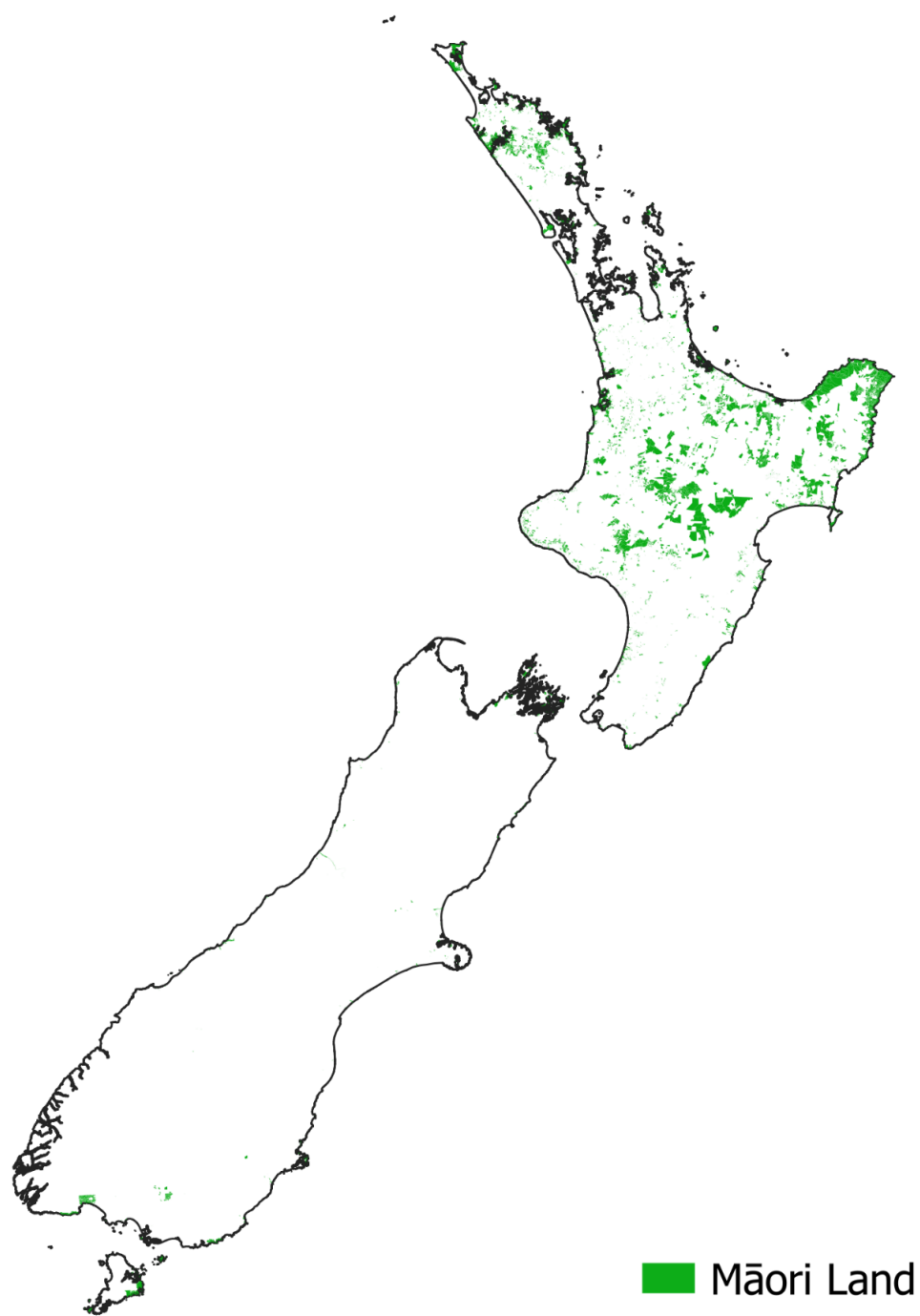


Figure 3-2: Map of Māori land confiscations that occurred following the New Zealand Wars

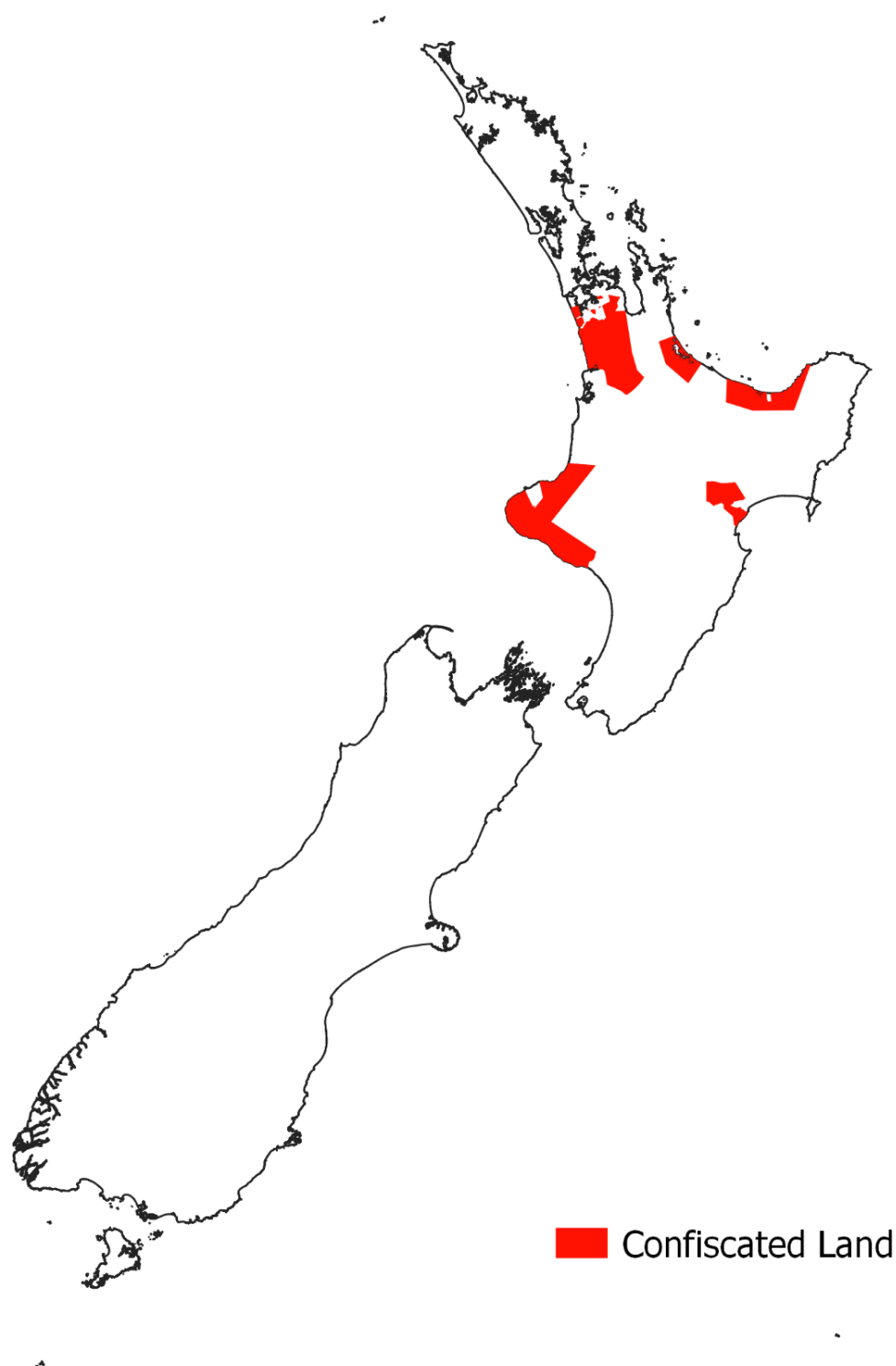
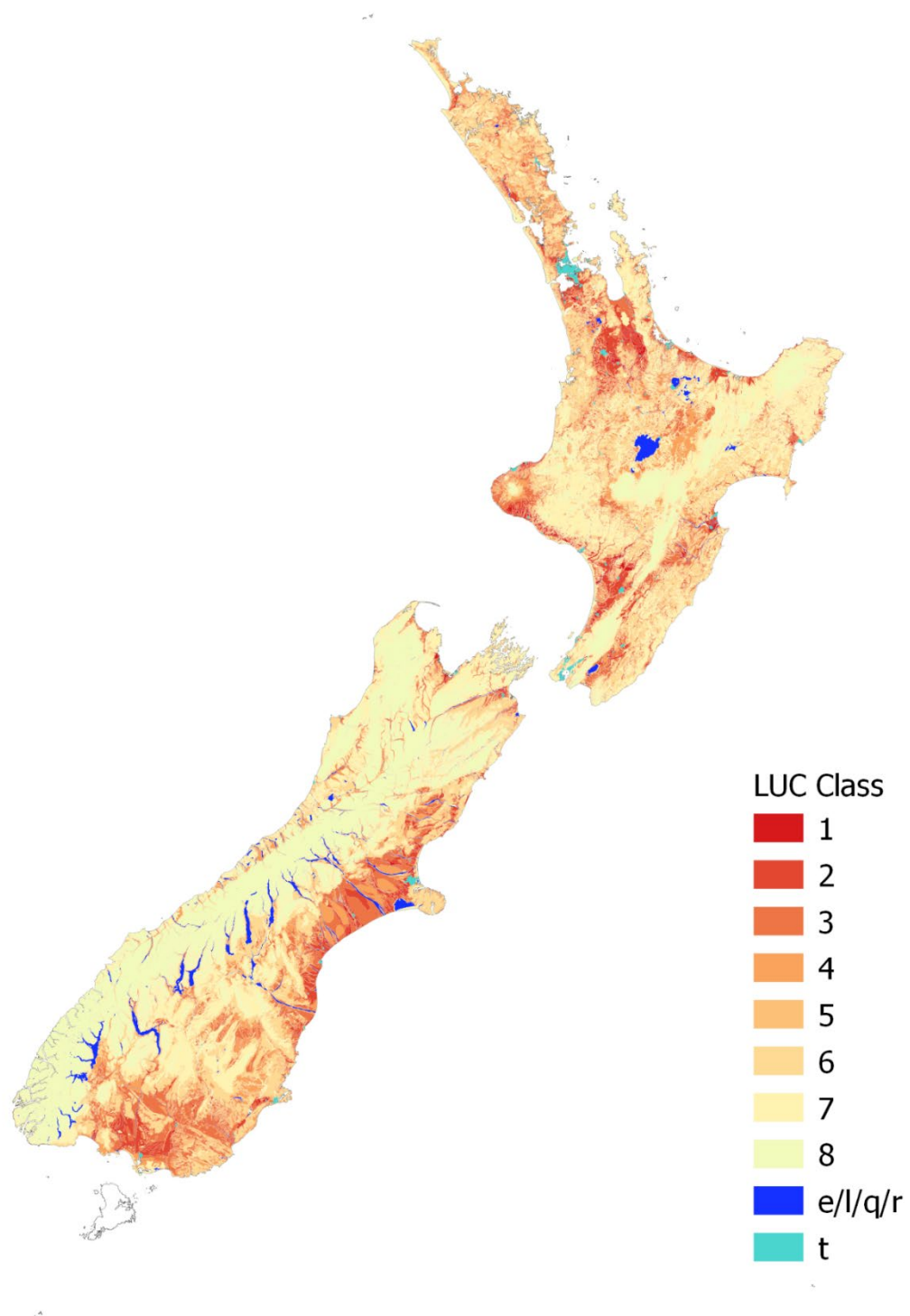
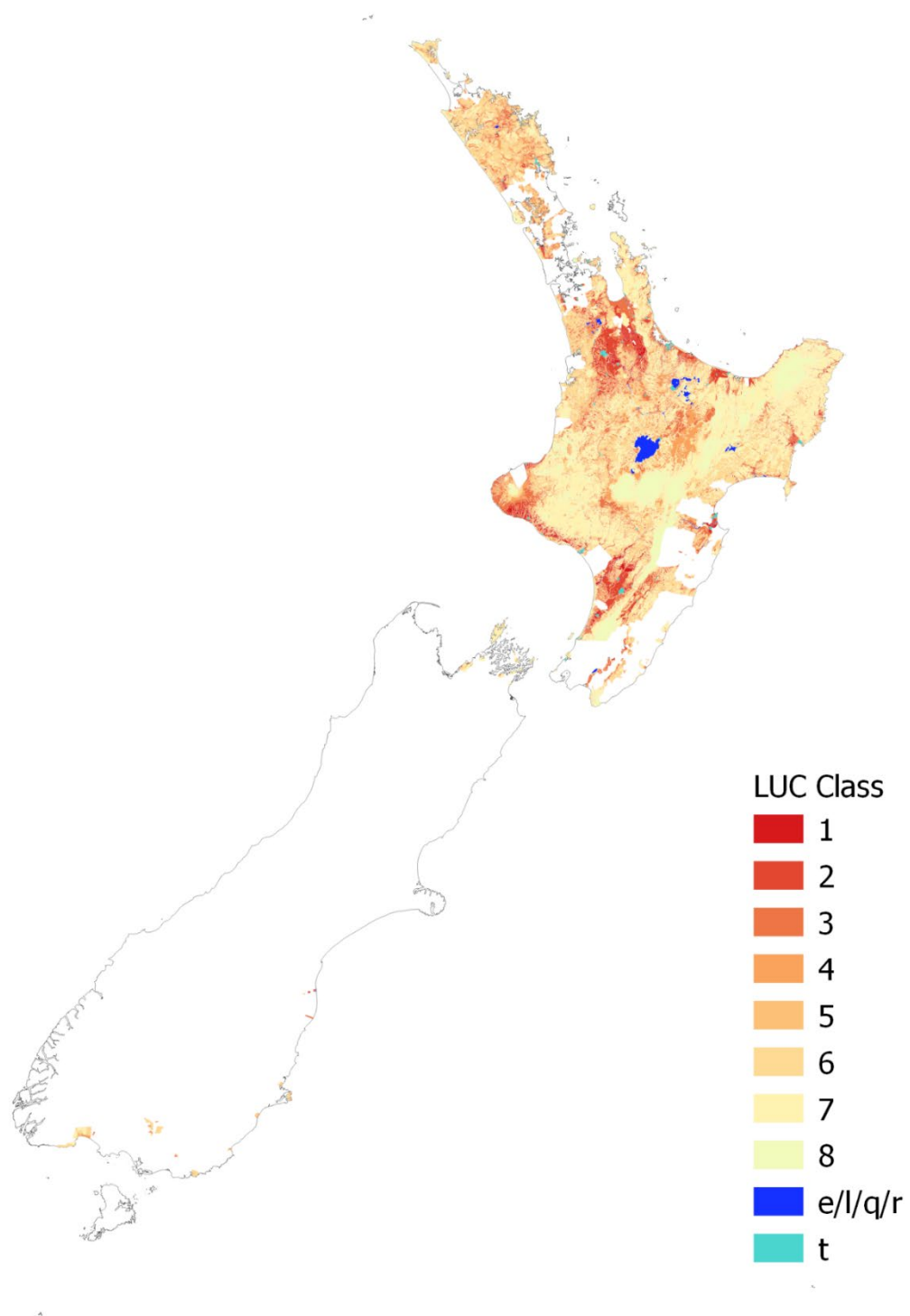


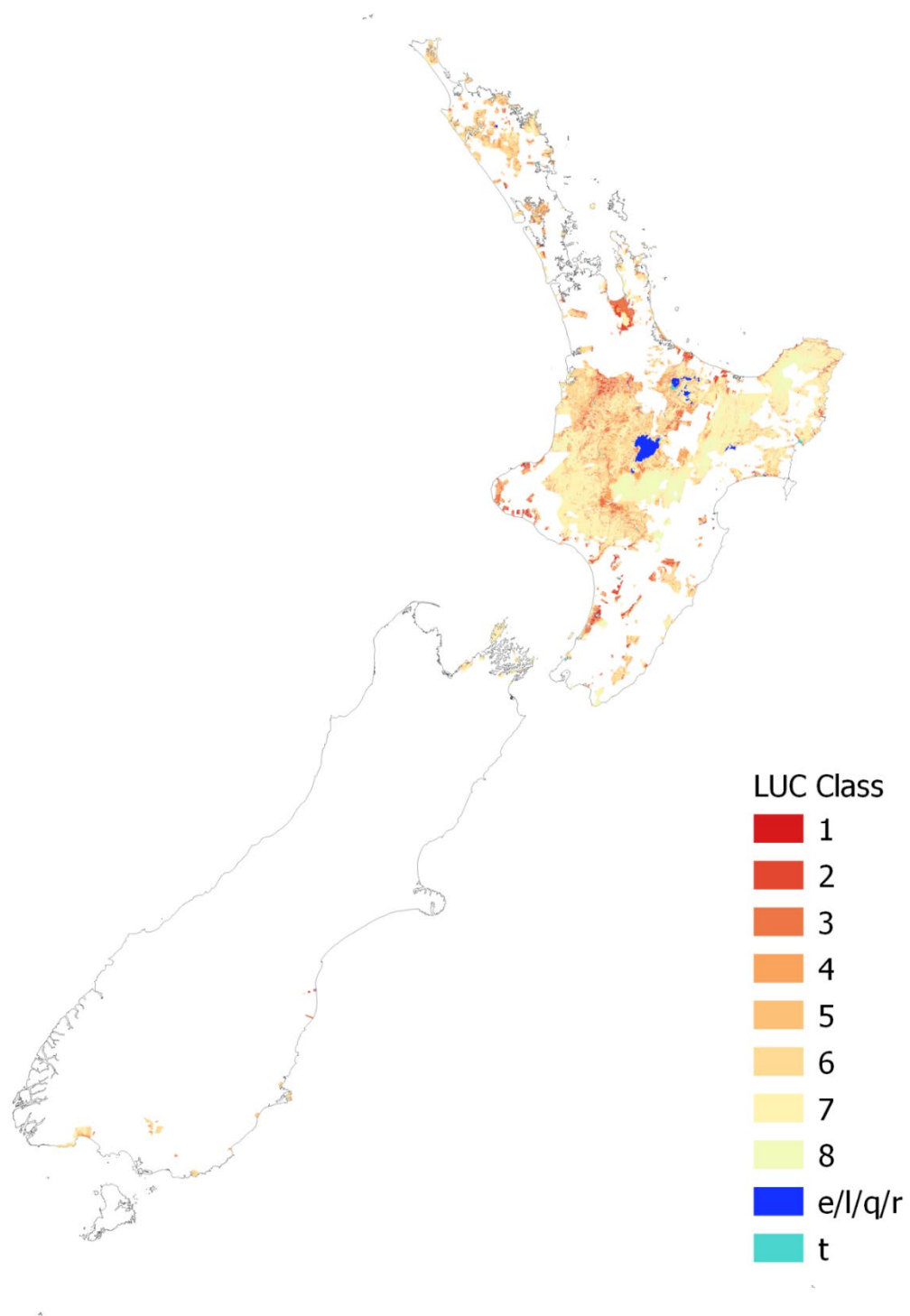
Figure 3-3: Maps of Māori landholdings by LUC class at various points in history  
Map A: 1840 (i.e., all of New Zealand)



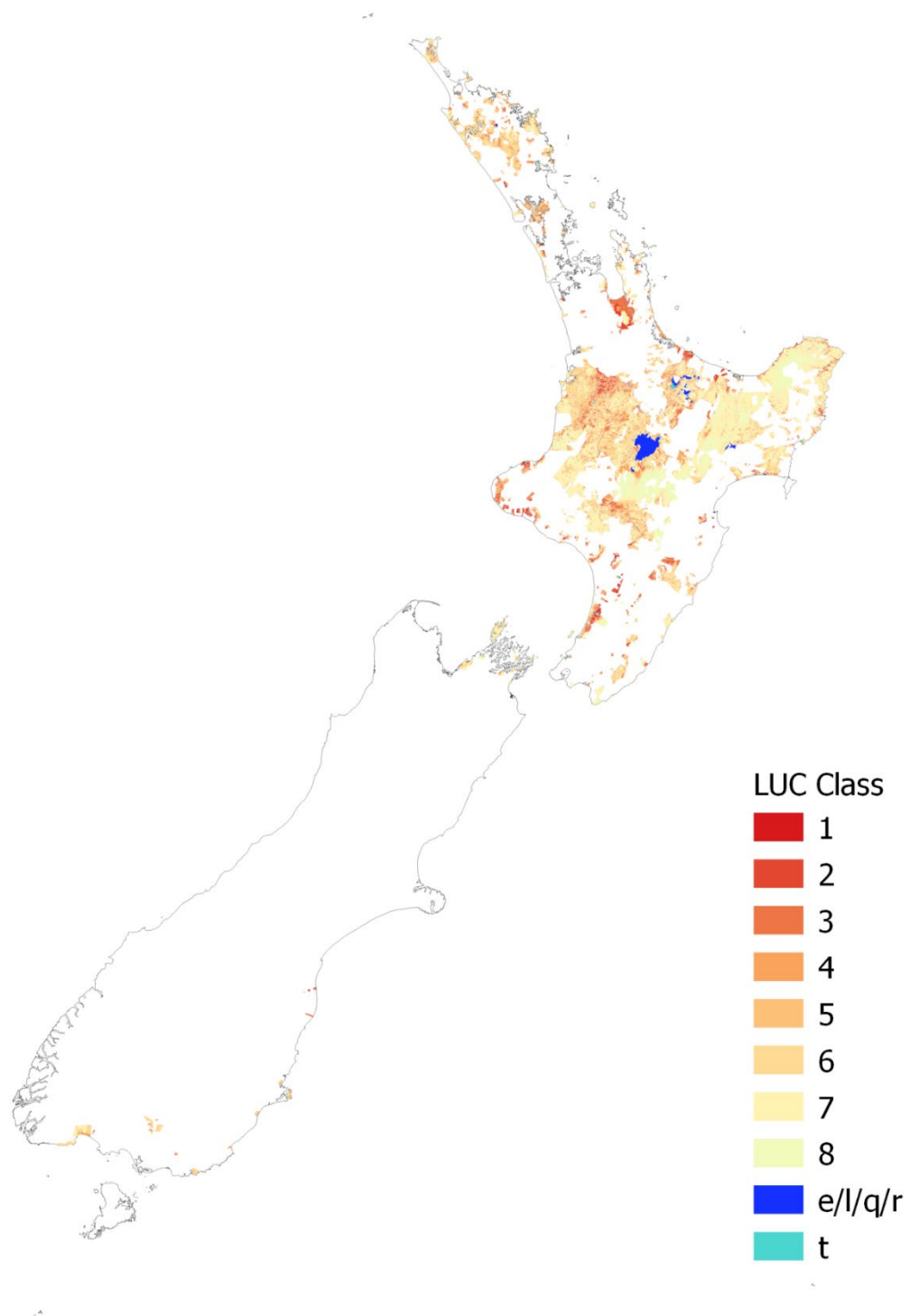
Map B: 1864



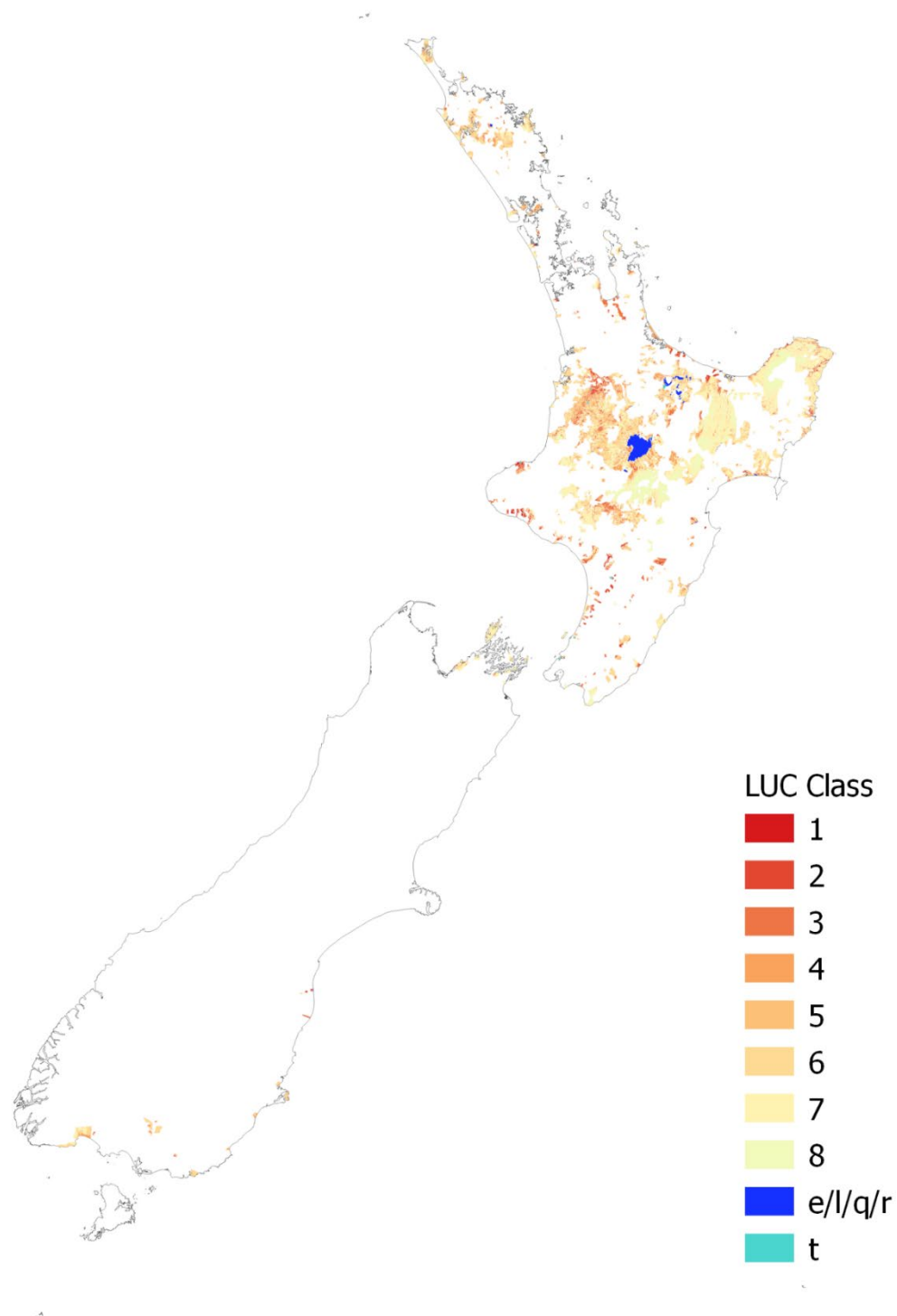
Map C: 1880



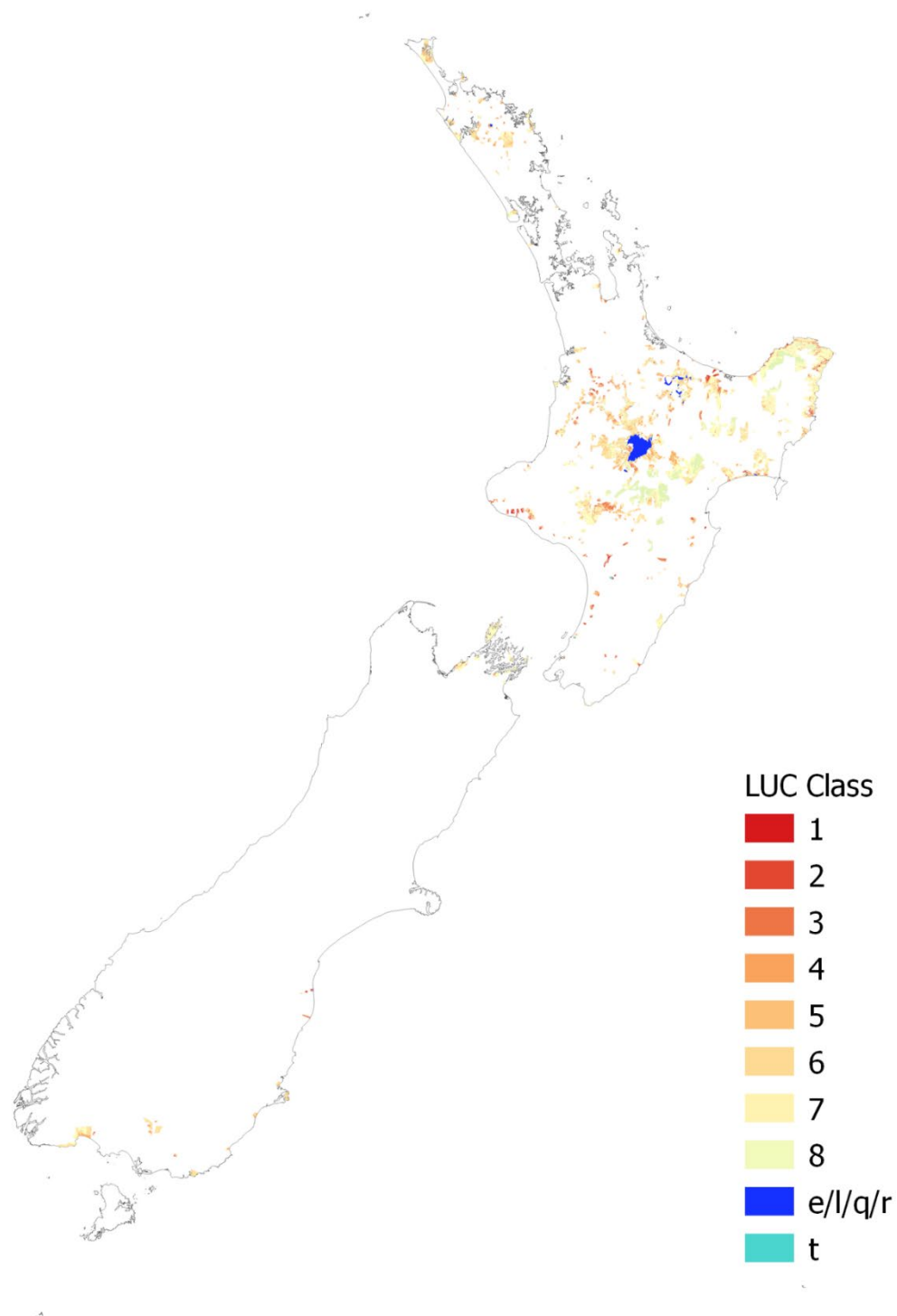
Map D: 1890



Map E: 1910



Map F: 1939





Map G: 2017

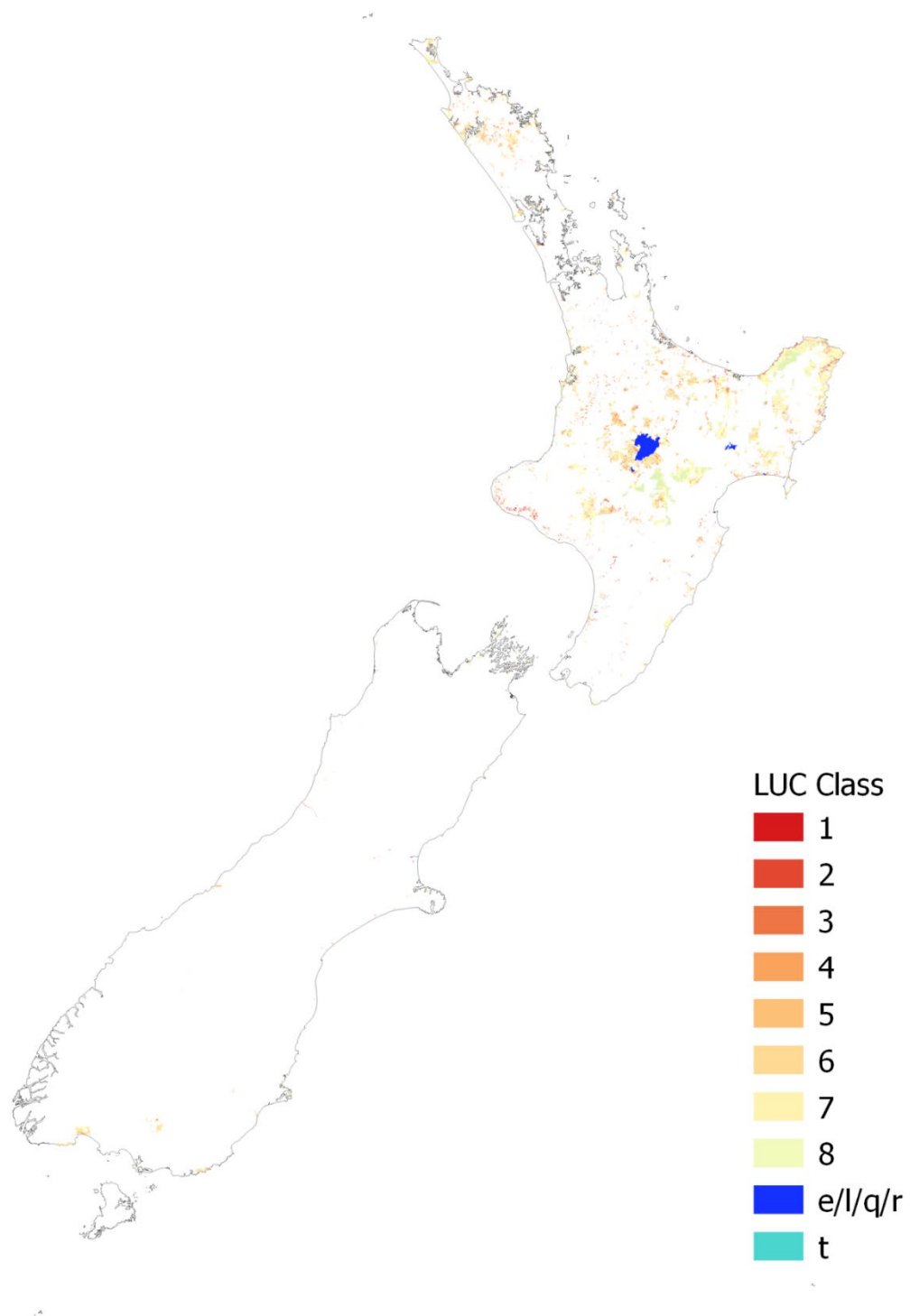


Table 3.6-1: Individual iwi, iwi codes and TPK codes associated with each aggregated rohe ID

ID	Aggregated Category	Iwi Codes (IC)	TPK Codes
ra0101	Te Aupōuri	0101	3
ra0102	Ngāti Kahu;Te Paatu	0102;0117	5
ra0103	Ngāti Kuri;Ngāi Takoto	0103;0107	2;1
ra0104	Ngāpuhi;Ngāti Hine (Te Tai Tokerau)	0104;0116	8
ra0105	Te Rarawa	0106	4
ra0106	Ngāti Wai;Ngāti Manuhiri;Ngāti Rēhua	0108;0118;0119	9; 101; 100
ra0107	Ngāti Whātua (not Ōrākei or Kaipara);Te Uri-o-Hau;Te Roroa;Ngāti Whātua o Kaipara;Ngāti Whātua o Ōrākei	0109;0111;0112; 0113;0114	10;11;12;1 03;13
ra0108	Te Kawerau ā Maki;Ngāi Tai ki Tāmaki;Ngāti Tara Tokanui	0110;0115;0211	94;22;24
ra0201	Ngāti Hako	0201	14
ra0202	Ngāti Hei	0202	15
ra0203	Ngāti Maru (Hauraki);Ngāti Pūkenga ki Waiau	0203;0207	16;20
ra0204	Ngāti Paoa;Ngāti Tipa	0204; 0308	17
ra0205	Patukirikiri;Ngāti Tamaterā	0205;0210	18;23
ra0206	Ngāti Porou ki Harataunga ki Mataora	0206	19
ra0207	Ngāti Whanaunga	0212	25
ra0301	Ngāti Haua (Waikato)	0301	115
ra0302	Ngāti Maniapoto	0302	27
ra0303	Raukawa (Waikato);Rereahu;Ngāti Korokī Kahukura	0303;0307;0309	28;106;105
ra0304	Waikato;Ngāti Te Ata;Ngāti Hikairo ;Ngāti Tamaoho;Te Ākitai-Waiohū	0304;0305;0306; 0310;0311	26;104;111
ra0401	Ngāti Pikiao (Te Arawa);Ngāti Māhino;Ngāti Rongomai (Te Arawa)	0401;0413;0415	31;30;92
ra0402	Ngāti Rangiteaorere (Te Arawa)	0402	32
ra0403	Ngāti Rangitīhi (Te Arawa)	0403	33
ra0404	Ngāti Rangiwhewehi (Te Arawa);Ngāti Kearoa / Ngāti Tuarā	0404;0414	34;90
ra0405	Tapuika (Te Arawa)	0405	35
ra0406	Ngāti Tarāwhai (Te Arawa)	0406	36
ra0407	Tūhourangi (Te Arawa)	0407	37
ra0408	Uenuku-Kōpako (Te Arawa);Ngāti Whakaue (Te Arawa)	0408;0410	38
ra0409	Waitaha (Te Arawa)	0409	40
ra0410	Ngāti Tūwharetoa (ki Taupō);Ngāti Tahu-Ngāti Whaoa (Te Arawa);Ngāti Tūwharetoa ki Kawerau	0411;0412;0513	42;41;44
ra0501	Ngāti Pūkenga	0501	45
ra0502	Ngāi Te Rangi ;Ngā Pōtiki ā Tamapahore	0502;0511	46
ra0503	Ngāti Awa	0504	48
ra0504	Ngāti Manawa;Ngāti Whare	0505;0510	49;50
ra0505	Ngāi Tai (Tauranga Moana/Mātaatua)	0506	51
ra0506	Tūhoe	0507	52
ra0507	Whakatōhea;Te Upokorehe	0508;0512	53
ra0508	Te Whānau-ā-Apanui	0509	54
ra0601	Ngāti Porou;Te Aitanga ā Hauiti	0601;0605	55
ra0602	Te Aitanga-a-Māhaki;Rongowhakaata;Ngāi Tāmanuhiri	0602;0603;0604	56;57;58
ra0701	Ngāti Kahungunu (Rongomaiwahine (Te Māhia);Ngāti Kahungunu ki Te Wairoa;Ngāti Kahungunu ki Heretaunga;Ngāti Kahungunu ki Wairarapa;Ngāti Kahungunu ki Te Whanganui-a-Orotu;Ngāti Kahungunu ki Tamatea;Ngāti Kahungunu ki Tamakinui a Rua;Ngāti Pāhauwera;Ngāti Rākaipaaka;Ngāti Hineuru;Maungaharuru Tangitū;Ngāti Ruapani ki Waikaremoana;Te Hika o Pāpāuma;Ngāti Kahungunu, region not known)	0701;0702;0703; 0704;0707;0708; 0709;0710;0711; 0712;0713;0715; 0716;2112	59;95;96;9 7;99

ra0702	Rangitāne (Rangitāne (Te Matau-a-Māui/Hawke's Bay/Wairarapa);Rangitāne o Tamaki nui ā Rua;Ngāti Hauiti (Rangitīkei);Muaūpoko;Rangitāne (Manawatū))	0706;0714;0904;1002;1003	71;74;73
ra0801	Te Atiawa (Taranaki);Ngāti Maru (Taranaki);Ngāti Mutunga (Taranaki);Ngāti Tama (Taranaki)	0801;0802;0803;0807	62;64;61;60
ra0802	Ngā Rauru;Ngā Ruahine;Ngāti Ruanui;Tangāhoe;Pakakohi	0804;0805;0806;0809;0810	67;65;66
ra0803	Taranaki	0808	63
ra0901	Ngāti Apa (Rangitīkei)	0901	70
ra0902	Te Ati Haunui-a-Pāpārangi;Ngāti Haua (Taumarunui);Ngāti Rangi (Ruapehu, Whanganui);Uenuku (Ruapehu, Waimarino);Tamahaki (Ruapehu, Waimarino);Tamakana (Ruapehu, Waimarino)	0902;0903;0908;0909;0910;0911	68;119;93;117
ra0903	Ngāti Whitikaupeka (Rangitīkei);Ngāi Te Ohuake (Rangitīkei);Ngāti Tamakōpiri (Rangitīkei)	0905;0906;0907	
ra1001	Te Atiawa (Te Whanganui-a-Tara/Wellington);Te Atiawa ki Whakarongotai;Ngāti Tama ki Te Upoko o Te Ika (Te Whanganui-a-Tara/Wellington)	1001;1006;1007	86;79
ra1002	Ngāti Raukawa (Horowhenua/Manawatū);Ngāti Kauwhata;Ngāti Tukorehe	1004;1008;1009	75
ra1003	Ngāti Toarangatira (Te Whanganui-a-Tara/Wellington)	1005	76
ra1101	South Island (Te Atiawa (Te Waipounamu/South Island);Ngāti Koata;Ngāti Kuia;Kāti Māmoe;Rangitāne (Te Waipounamu/South Island);Ngāti Rārua;Ngāi Tahu / Kāi Tahu;Ngāti Tama (Te Waipounamu/South Island);Ngāti Toarangatira (Te Waipounamu/South Island);Waitaha (Te Waipounamu/South Island);Ngāti Apa ki Te Rā Tō)	1101;1102;1103;1104;1107;1108;1109;1110;1111;1112;1113	77;84;82;81;83;87;85;76;80

Table 3.6-2: Māori land ownership by aggregated iwi groupings<sup>25</sup>

ID	1840 (ha)	1864	1880	1890	1910	1939	2017
ra0101	120,586	47.80%	23.28%	23.28%	21.21%	20.00%	13.60%
ra0102	120,803	45.00%	11.47%	10.72%	4.64%	3.70%	4.73%
ra0103	118,163	46.95%	23.38%	23.38%	21.21%	20.43%	13.79%
ra0104	628,022	92.27%	35.70%	35.00%	17.80%	9.81%	10.59%
ra0105	123,249	84.17%	33.95%	33.95%	30.78%	9.55%	16.46%
ra0106	331,662	50.96%	15.87%	15.87%	7.09%	3.17%	3.52%
ra0107	749,050	53.00%	13.89%	13.89%	4.98%	1.31%	2.40%
ra0108	941,998	64.26%	17.74%	16.22%	6.66%	1.48%	2.71%
ra0201	580,590	89.47%	25.33%	22.87%	8.24%	1.36%	3.58%
ra0202	118,707	90.43%	25.85%	17.82%	9.01%	3.21%	3.14%
ra0203	749,977	70.53%	20.16%	18.25%	6.59%	1.56%	2.70%
ra0204	297,372	56.89%	13.79%	13.79%	5.50%	2.27%	1.64%
ra0205	742,133	79.20%	21.56%	19.64%	7.67%	1.74%	3.09%
ra0206	3,535	100.00%	75.07%	75.07%	75.07%	74.81%	60.29%
ra0207	626,531	74.83%	23.42%	21.14%	7.80%	1.98%	2.99%
ra0301	280,591	99.40%	5.75%	2.60%	2.48%	0.27%	1.62%
ra0302	621,167	95.03%	93.38%	89.70%	58.62%	16.35%	12.33%
ra0303	1,060,140	100.00%	70.46%	60.62%	43.99%	20.74%	11.09%
ra0304	1,018,543	72.67%	11.75%	9.48%	5.67%	1.86%	3.09%
ra0401	121,729	100.00%	55.45%	51.39%	39.65%	28.00%	20.85%
ra0402	5,078	100.00%	83.97%	82.70%	51.72%	25.27%	28.89%
ra0403	339,119	100.00%	59.23%	48.12%	29.43%	16.22%	10.13%
ra0404	106,770	100.00%	76.49%	63.95%	24.54%	8.49%	12.80%
ra0405	61,473	99.98%	61.90%	61.90%	16.75%	5.01%	9.58%
ra0406	2,533	100.00%	100.00%	99.44%	99.44%	70.41%	24.82%
ra0407	119,547	100.00%	89.55%	84.52%	53.50%	31.04%	16.68%
ra0408	52,823	100.00%	97.58%	85.63%	49.41%	21.71%	25.74%
ra0409	35,795	100.00%	23.20%	23.20%	17.68%	1.23%	10.54%
ra0410	1,192,669	100.00%	74.65%	59.69%	47.57%	32.43%	21.58%
ra0501	171,051	99.99%	28.07%	28.07%	20.64%	8.16%	11.12%
ra0502	167,437	99.99%	29.19%	29.19%	20.32%	7.91%	10.79%
ra0503	198,362	99.94%	55.35%	47.03%	37.20%	26.08%	16.27%
ra0504	261,434	100.00%	55.61%	45.62%	33.54%	14.67%	4.97%
ra0505	36,131	100.00%	81.73%	81.73%	79.16%	25.80%	37.40%
ra0506	816,086	99.94%	62.42%	57.41%	44.57%	16.88%	11.29%
ra0507	193,487	97.24%	51.80%	47.94%	15.43%	6.34%	6.17%
ra0508	189,654	100.00%	82.32%	82.32%	69.74%	50.08%	46.39%
ra0601	404,277	100.00%	66.54%	58.48%	48.68%	37.31%	31.20%
ra0602	346,310	100.00%	46.07%	39.94%	24.91%	15.88%	18.08%
ra0701	2,747,834	60.15%	25.38%	22.23%	17.26%	10.04%	7.07%
ra0702	1,736,173	54.94%	18.90%	17.01%	8.63%	2.67%	1.83%
ra0801	406,161	90.84%	50.68%	34.73%	12.35%	1.56%	3.56%
ra0802	397,718	100.00%	27.93%	13.32%	10.02%	5.53%	4.15%
ra0803	117,398	88.45%	27.41%	27.41%	2.72%	2.72%	6.93%
ra0901	289,582	75.30%	20.68%	12.84%	12.62%	3.71%	1.18%
ra0902	863,447	97.87%	90.20%	50.02%	28.18%	14.67%	10.06%
ra0903	282,744	99.94%	59.51%	59.05%	39.71%	29.90%	20.76%
ra1001	110,922	9.50%	6.98%	6.98%	5.17%	1.29%	1.12%
ra1002	430,458	96.68%	19.17%	18.66%	8.43%	3.22%	2.07%
ra1003	437,313	59.52%	17.86%	16.90%	6.78%	2.11%	1.94%
ra1101	14,962,665	0.86%	0.86%	0.86%	0.86%	0.86%	0.36%

<sup>25</sup> The column for 1840 is shown in hectares; 1864-2017 shows the remaining land held by iwi as a percentage of 1840 land.

Table 3.6-3: Figures of cultural wellbeing measures by iwi (a)<sup>26</sup>

IC	iimc_1	iimc_2	iimc_3	iimc_4	iimc_5	trmp_1	trmp_2	trmp_3	trmp_4
0101	4.7	11	20.2	25	39.1	26.9	32.3	18.6	22.1
0102; 0117	7.1	14.8	23.2	24.5	30.4	37.5	32.1	15.6	14.7
0103	4.9	11.3	20.7	25.3	37.6	33.7	33.1	16.5	16.6
0104; 0116	6.4	15.1	25.9	22.3	30.1	41.7	30.6	13.8	13.8
0105	5.3	12	20.9	24.9	36.7	31.5	32	17.6	18.7
0106	5.4	12.3	21.3	25.1	35.7	33.4	32.6	16.7	17.1
0107	5.2	11.8	21	25.1	36.6	34.4	32.2	16.8	16.6
0108	5.7	12.7	21.9	25.2	34.4	40.4	32.2	14.5	12.8
0109	6.2	13.7	22.8	25.1	32	38.3	33	14.9	13.6
0110	5.8	12.8	22	25.1	33.9	36.5	32.5	16.1	14.8
0112	6.1	13.5	22.5	24.9	32.8	37.1	32.7	15.5	14.7
0115	6.3	13.6	22.4	24.8	32.7	38.2	32	15.4	14.4
0201	6.5	14	22.8	24.8	31.7	39.5	32	14.9	13.6
0202	8	16.9	25.8	24.7	24.5	47.2	33.7	11.2	7.9
0203	7.6	15.8	24.3	24.4	27.8	44.2	31.7	13	10.8
0204; 0308	5.8	12.8	22	25	34.2	37.4	32.4	15.6	14.6
0206	7.5	15.8	24.4	24.5	27.7	42.3	32.5	13.6	11.6
0207	5.9	12.9	21.8	24.8	34.4	34.4	31.9	16.8	16.6
0208	7.7	16	24.6	24.4	27.2	43.5	32.5	13	11
0210	5.9	13.1	22.2	25.1	33.5	34.2	33	16.3	16.2
0211	5.4	12.2	21.3	25.1	35.8	32.5	32.2	17.2	17.9
0212	6.1	13.2	21.9	24.7	33.8	35.8	31.5	16.5	16.1
0301	5.3	11.9	20.9	25	36.8	35.4	31.6	16.7	16.1
0302	6.4	16	22.4	22.6	32.7	39.4	34.3	10.8	15.5
0303	5.7	12.8	22	25.1	34.3	34.8	33.2	16.1	15.8
0304; 0305; 0306	6.6	11.7	19.1	22.3	39.8	27	38.3	16.5	18.2
0401	4.9	11.3	20.5	25.2	38.1	30.6	33.1	17.4	18.8
0402	5.9	13	21.9	25	34.1	35.7	32	16.2	15.8
0403	5.9	13.1	22.3	25.1	33.4	38.5	32.7	15	13.7
0404	5.7	12.7	21.6	24.9	34.9	36	32.2	16.2	15.6
0405	4.6	10.8	19.7	24.9	39.9	28.5	31.4	18.8	21
0406	4.7	10.5	18.8	24.4	41.5	28.4	30.6	19.9	20.8
0407	5.5	12.3	21.1	24.9	36	32.9	31.6	17.5	18
0408; 0410	7.3	15.2	23.7	24.4	29.4	38.5	32.5	15	13.8
0409	5.2	11.8	20.7	24.9	37.2	31.8	31.6	17.9	18.5
0411	5.8	14.3	20.8	26.4	32.2	34.6	34.8	15.2	15.4
0412	7.5	15.6	24.2	24.5	28	42.2	33	13.6	11.3
0501	6.2	13.4	21.9	24.5	33.8	35.1	31.8	16.5	16.4
0502; 0511	5.7	12.6	21.5	24.9	35.3	35	32.1	16.5	16.4
0503	6.1	13.3	22.2	24.7	33.5	35.9	32.3	16.1	15.6
0504	5.6	12.5	21.5	24.9	35.4	33.3	32.5	16.9	17.2
0505	4.6	10.7	19.6	25	39.9	31.3	31.8	18	18.8
0506	5.6	12.5	21.4	24.9	35.6	32.1	31.8	17.4	18.4
0507	3.6	8.2	15.7	20.3	52.2	21.3	29	20.5	29.1
0508; 0512	5.3	12	21.1	25	36.4	36.8	31.9	15.9	15.3
0509	4.5	10.5	19.4	24.8	40.7	24.9	31.2	19.4	24.3
0601; 0605	7.1	13.5	24.5	23.5	31.3	31.8	35.9	16.4	15.9
0602	5.9	12.9	21.8	24.9	34.4	30.4	32.2	17.8	19.5

<sup>26</sup>  $\sum_{j=1}^5 iimc\_j = 100\%$ ;  $\sum_{k=1}^4 trmp\_k = 100\%$

<b>0603</b>	5.7	12.5	21.5	24.9	35.3	33.7	32	16.9	17.3
<b>0604</b>	5.2	11.7	20.4	24.8	37.6	27.7	31	19	22.1
<b>0701; 0702; 0703; 0704; 0707; 0708; 0709; 0711; 0716</b>	6.8	13.1	23.5	22.3	34.2	41.6	30.0	13.2	15.1
<b>0706; 0714; 1003</b>	6.4	13.9	22.7	24.9	31.9	36.2	32.7	15.9	15.1
<b>0710</b>	6.7	14.3	23	24.6	31.1	37.8	31.9	15.6	14.7
<b>0801</b>	9.6	18.6	25.9	23.2	22.6	48.3	31.5	11.5	8.6
<b>0802</b>	6.3	13.8	22.9	25.1	31.7	35.9	33.5	15.7	14.8
<b>0803</b>	8.5	17.2	25	23.8	25.4	42.5	32.6	13.4	11.3
<b>0804</b>	6.1	13.3	22.2	24.9	33.3	31.1	32.7	17.4	18.6
<b>0805</b>	5.6	12.5	21.7	25.1	34.9	35	32.5	16.4	16.2
<b>0806; 0809; 0810</b>	7.6	15.6	23.9	24.3	28.6	37.4	32.9	15.4	14.3
<b>0807</b>	7.5	15.7	24.7	24.8	27.2	41.2	34.2	13.6	11
<b>0808</b>	7.1	15	23.6	24.5	29.5	38.7	32.7	14.9	13.7
<b>0901</b>	6.3	13.8	22.7	24.9	32	37.5	32.8	15.3	14.3
<b>0902</b>	5.5	12.4	21.4	25	35.4	32	32.7	17.2	17.9
<b>0903</b>	6.3	13.9	23	25.1	31.5	39.8	32.6	14.6	13
<b>0904</b>	8.3	16.7	24.7	23.9	26.1	40	33.3	14.2	12.4
<b>1001; 1007</b>	8.6	17.3	25.2	23.9	25	42.8	33.2	13.2	10.9
<b>1002</b>	7	15	23.8	24.8	29.2	39.7	33.1	14.4	12.7
<b>1004; 1008; 1009</b>	7.7	15.9	24.1	24.1	27.9	41.8	32	13.9	12.1
<b>1005; 1111</b>	6.8	14.6	23.3	24.7	30.4	36.6	33.2	15.5	14.6
<b>1006</b>	6.2	13.5	22.4	24.8	32.9	34	32.8	16.5	16.5
<b>1101</b>	9.4	18.6	26.1	23.3	22.3	46.3	33.1	11.8	8.8
<b>1102</b>	7.2	15.2	23.7	24.4	29.4	40.8	32.2	14.3	12.6
<b>1103</b>	8.2	16.7	24.7	23.9	26.2	44.7	31.6	12.9	10.6
<b>1104; 1109; 1112</b>	9.2	25.5	26.9	24.5	13.9	55.8	28.6	9.9	5.7
<b>1107</b>	8.3	16.9	25.1	24	25.6	45.9	31.9	12.4	9.7
<b>1108</b>	7.5	15.5	23.9	24.4	28.6	39.2	32.7	14.7	13.3

Note: For the measure "importance of involvement in Māori culture" (iimc), the columns represent figures for each of the responses: "Not at all important" (iimc\_1), "A little important" (iimc\_2), "Somewhat important" (iimc\_3), "Quite important" (iimc\_4) and "Very important" (iimc\_5). For the measure "te reo Māori proficiency" (trmp), the columns represent figures for each of the responses: "No more than a few words or phrases" (trmp\_1), "Not very well" (trmp\_2), "Fairly well" (trmp\_3) and "Very well/ well" (trmp\_4).

Table 3.6-4: Figures of cultural wellbeing measures by iwi (b)<sup>27</sup>

IC	vam_1	vam_2	esmcp_1	esmcp_2	esmcp_3	esmcp_4	esmcp_5
0101	53.2	46.8	7.2	11.7	28.1	45.1	7.8
0102; 0117	48.2	51.8	8.3	12.9	29.3	42.7	6.7
0103	48	52	8.8	13.5	29.7	41.5	6.3
0104; 0116	37.7	62.3	12.1	14.9	32	35.1	5.9
0105	50.7	49.3	6.8	11.1	27.3	46.2	8.5
0106	48.3	51.7	7	11.5	28.1	45.5	7.9
0107	53.4	46.6	7.6	12	28.2	44.5	7.6
0108	50.2	49.8	8.8	13.6	29.9	41.5	6.2
0109	47.8	52.2	10.2	15.1	31.1	38.4	5.1
0110	48.4	51.6	8.9	13.9	30.6	40.9	5.6
0112	51.5	48.5	8.1	12.7	29	43.3	6.9
0115	44.9	55.1	10.6	15.7	31.9	37.2	4.5
0201	44.9	55.1	10.9	16	31.8	36.7	4.5
0202	37.5	62.5	11.8	16.9	32.5	34.6	4
0203	43.2	56.8	11.6	16.7	32.1	35.3	4.2
0204; 0308	46.1	53.9	10.8	15.8	31.7	36.9	4.6
0206	39.2	60.8	10.8	15.9	31.8	36.8	4.5
0207	50.8	49.2	9.4	14.4	30.9	39.8	5.3
0208	38.4	61.6	10.8	15.8	31.7	36.8	4.6
0210	47	53	9.6	14.6	31.3	39.3	5.1
0211	49.7	50.3	9.6	14.6	31.3	39.3	5.1
0212	44.2	55.8	9	14	30.8	40.6	5.5
0301	53.4	46.6	12.3	17.2	32.1	34.2	3.9
0302	45.8	54.2	10.5	22.8	31.2	33.5	2
0303	48.6	51.4	10.6	15.6	31.7	37.3	4.7
0304; 0305; 0306	46	54	12.1	14.3	27.2	42.3	4.1
0401	57	43	9.3	14.3	30.9	39.9	5.4
0402	53	47	9.8	14.8	31	39.3	5.3
0403	48.1	51.9	10.4	15.4	31.6	37.7	4.7
0404	52.5	47.5	10	14.9	31.3	38.8	5
0405	58.3	41.7	8.5	13.3	29.8	42.1	6.1
0406	58.5	41.5	8	12.9	29.8	42.9	6.2
0407	61.3	38.7	8.2	13	29.9	42.6	6.2
0408; 0410	51.7	48.3	10.3	15.4	31.5	37.9	4.8
0409	57.3	42.7	9.1	14	30.7	40.6	5.5
0411	51.8	48.2	6.4	12.9	35.7	40	4.9
0412	38.2	61.8	10.1	15.1	31.4	38.4	4.9
0501	51.5	48.5	9.8	14.7	31.1	39.2	5.2
0502; 0511	50.8	49.2	11.8	16.7	32	35.1	4.2
0503	48.3	51.7	10.8	15.7	31.7	37	4.6
0504	49.3	50.7	9.5	14.4	30.9	39.8	5.3
0505	57.9	42.1	9.4	14.3	30.8	40.1	5.4
0506	54.2	45.8	9.9	14.8	30.9	39.1	5.2
0507	57.7	42.3	6.7	16.9	30.7	43	2.9
0508; 0512	49.4	50.6	9.1	14.1	30.6	40.4	5.6
0509	51	49	8.7	13.6	30.2	41.6	5.9
0601; 0605	39.4	60.6	11.2	15.8	34.9	34.3	3.8
0602	53	47	10.2	15.3	31.4	38.1	4.9

<sup>27</sup>  $\sum_{l=1}^2 vam_l = 100\%$ ;  $\sum_{m=1}^5 esmcp_m = 100\%$

<b>0603</b>	54.2	45.8	11.6	16.5	31.9	35.6	4.3
<b>0604</b>	54.6	45.4	9.8	14.7	31	39.2	5.2
<b>0701; 0702; 0703; 0704; 0707; 0708; 0709; 0711; 0716</b>	45.1	54.9	11.5	15.6	29.4	39.3	4.1
<b>0706; 0714; 1003</b>	44.0	56.0	11.1	16.1	31.9	36.4	4.4
<b>0710</b>	44.1	55.9	10.8	15.8	31.7	36.8	4.6
<b>0801</b>	31.9	68.1	12.8	17.8	32.6	33.1	3.7
<b>0802</b>	45.6	54.4	12	17	32.2	34.6	4
<b>0803</b>	33.5	66.5	12	17	32.2	34.7	4
<b>0804</b>	48.8	51.2	9.7	14.8	31.1	39.1	5.2
<b>0805</b>	47.4	52.6	11.1	16	31.8	36.5	4.4
<b>0806; 0809; 0810</b>	40.1	59.9	12.6	17.4	32.1	33.9	3.9
<b>0807</b>	39.4	60.6	12.4	17.3	32.3	33.9	3.9
<b>0808</b>	48.5	51.5	11.1	16.2	31.9	36.3	4.4
<b>0901</b>	46	54	10.8	15.8	31.8	36.9	4.6
<b>0902</b>	53.7	46.3	8.7	13.7	30.5	41.4	5.7
<b>0903</b>	43.5	56.5	10.3	15.3	31.4	37.9	4.8
<b>0904</b>	38.8	61.2	10.5	15.6	31.8	37.2	4.6
<b>1001; 1007</b>	33.2	66.8	14.2	18.9	32.6	30.8	3.2
<b>1002</b>	44.5	55.5	10.9	16	32	36.5	4.4
<b>1004; 1008; 1009</b>	44.3	55.7	11.0	16.1	32.0	36.2	4.4
<b>1005; 1111</b>	41.1	58.9	11	16.1	32	36.4	4.4
<b>1006</b>	43.2	56.8	11.1	16.2	32	36.2	4.3
<b>1101</b>	34.6	65.4	14.1	18.9	32.7	30.8	3.2
<b>1102</b>	37.8	62.2	11.9	16.9	32	34.9	4.1
<b>1103</b>	34.5	65.5	13	17.9	32.3	32.9	3.7
<b>1104; 1109; 1112</b>	18.7	81.3	17.9	18.4	32.2	28.5	3.0
<b>1107</b>	27.5	72.5	13.2	18.1	32.4	32.5	3.6
<b>1108</b>	33.5	66.5	12.8	17.6	32	33.5	3.8

Note: For the measure regarding whether an individual had "visited their ancestral marae in the last 12 months" (vam), the columns represent figures for each of the responses: "Yes (Āe)" (vam\_1), and "No (Kao)" (vam\_2). For the measure regarding an individual's "ease of getting support with Māori cultural practices" (esmcp), the columns represent figures for each of the responses: "Hard/ very hard" (esmcp\_1), "Sometimes easy/ sometimes hard" (esmcp\_2), "Easy" (esmcp\_3), "Very easy" (esmcp\_4), and "Don't need help" (esmcp\_5).



Table 3.6-5: Figures of socioeconomic wellbeing measures by iwi

IC	(1) ca	(2) rs	(3) boh	(4) oh	(5) hnz	(6) fq	(7) ra	(8) ur	(9) lf	(10) er	(11) mi
0101	85.2%	29.6%	13.4%	29.9%	12.6%	73.3%	52.1%	14.9%	67.4%	57.3%	24300
0102; 0117	85.4%	32.4%	11.9%	27.4%	13.6%	69.0%	54.4%	17.7%	66.7%	55.0%	22000
0103	84.1%	32.8%	10.2%	27.9%	13.4%	67.3%	53.0%	17.6%	65.2%	53.8%	22200
0104; 0116	86.9%	32.3%	10.0%	26.6%	13.0%	68.3%	55.5%	17.4%	66.6%	55.0%	21700
0105	87.1%	29.3%	15.7%	33.8%	10.6%	69.1%	48.8%	17.0%	65.7%	54.5%	22300
0106	86.0%	29.0%	14.0%	30.5%	10.7%	73.0%	50.0%	15.7%	67.6%	57.0%	23300
0107	88.6%	26.7%	14.0%	31.9%	10.6%	74.1%	48.9%	12.8%	88.0%	57.9%	23800
0108	86.7%	28.9%	12.9%	29.2%	11.1%	71.5%	52.1%	17.9%	67.6%	55.5%	21800
0109	87.9%	31.9%	11.3%	26.1%	12.9%	70.1%	55.2%	17.7%	67.1%	55.3%	21900
0110	87.2%	29.0%	12.1%	26.5%	13.7%	66.7%	47.8%	16.0%	73.5%	61.8%	27900
0111	88.8%	25.3%	12.1%	34.3%	9.1%	72.7%	48.1%	17.2%	66.3%	54.6%	20200
0112	81.7%	31.4%	15.3%	36.2%	6.2%	73.9%	46.6%	13.2%	67.9%	59.0%	23500
0115	85.5%	26.9%	16.0%	34.3%	12.0%	73.6%	49.4%	14.7%	68.2%	58.2%	23700
0201	87.0%	32.0%	10.5%	28.8%	8.7%	71.4%	52.2%	14.1%	69.1%	59.3%	24300
0202	87.7%	19.8%	11.3%	44.6%	5.0%	74.8%	34.8%	9.6%	68.0%	61.5%	27100
0203	88.0%	27.3%	13.2%	35.3%	8.4%	73.5%	45.1%	13.2%	66.8%	58.0%	24700
0204; 0308	87.3%	33.1%	10.7%	28.7%	13.3%	66.3%	54.1%	17.7%	67.7%	55.5%	22700
0205	85.7%	40.0%									
0206	89.6%	27.7%	14.0%	32.7%	7.9%	71.1%	44.5%	14.3%	69.5%	59.6%	22100
0207	88.3%	28.9%	13.5%	33.1%	3.4%	70.6%	43.3%	12.1%	67.4%	59.3%	24000
0208	93.9%	29.1%	16.4%	36.8%	12.2%	74.5%	46.3%	8.1%	63.8%	56.9%	24200
0210	87.0%	32.7%	12.3%	28.6%	9.5%	72.5%	52.1%	14.4%	67.7%	57.9%	24500
0211	80.4%	42.3%	8.5%	20.5%	11.5%	60.4%	62.4%	16.2%	61.9%	51.7%	21000
0212	90.6%	29.1%	16.2%	31.2%	9.7%	79.2%	52.9%	14.3%	64.7%	56.1%	22400
0301	85.1%	37.1%	9.3%	23.7%	16.1%	64.3%	59.0%	19.6%	63.3%	52.3%	20100
0302	86.4%	33.9%	10.4%	26.9%	11.5%	66.7%	55.4%	16.6%	67.2%	56.0%	22300
0303	88.3%	29.4%	13.3%	32.0%	8.9%	72.5%	49.3%	14.9%	68.7%	58.5%	24100
0304; 0305; 0306	86.9%	34.4%	11.1%	24.0%	15.4%	66.5%	58.9%	19.9%	65.9%	52.7%	20900
0401	87.6%	30.3%	13.1%	30.8%	8.9%	70.9%	51.6%	17.2%	68.3%	56.5%	22600
0402	86.7%	24.5%	12.0%	34.3%	9.7%	73.9%	48.5%	19.1%	67.3%	54.5%	23500
0403	87.7%	26.1%	15.2%	36.6%	5.3%	75.1%	43.6%	15.3%	71.7%	60.7%	25100
0404	88.0%	30.7%	14.7%	34.0%	5.2%	74.0%	45.0%	15.9%	69.4%	58.2%	24300
0405	84.9%	33.0%	14.9%	28.1%	9.4%	69.2%	52.0%	20.1%	65.2%	52.4%	19800
0406	86.0%	19.0%	23.7%	38.5%	9.8%	83.1%	41.9%	14.3%	63.6%	54.5%	20200
0407	88.1%	29.5%	16.6%	35.0%	5.7%	74.5%	44.8%	16.0%	70.0%	58.8%	24700
0408; 0410	87.6%	26.4%	16.9%	36.4%	6.0%	76.4%	43.8%	15.2%	69.7%	59.0%	24851
0409	85.9%	33.2%	13.2%	26.7%	10.2%	67.2%	48.8%	21.6%	64.9%	51.0%	19600
0411	87.1%	33.4%	10.8%	26.3%	9.9%	70.0%	55.3%	16.3%	67.9%	56.9%	21900
0412	87.6%	29.6%	8.1%	33.9%	8.7%	62.8%	48.7%	15.2%	65.1%	55.2%	23100
0501	87.8%	27.1%	16.8%	34.6%	9.7%	75.5%	46.8%	13.4%	66.5%	57.3%	23400
0502; 0511	86.8%	32.7%	13.7%	30.6%	13.0%	71.6%	51.3%	16.7%	68.2%	56.9%	22700
0503	88.1%	31.2%	14.0%	29.9%	10.2%	73.8%	50.0%	15.3%	68.7%	58.2%	23200
0504	86.7%	30.4%	14.2%	30.6%	8.9%	73.2%	48.6%	17.6%	68.4%	56.4%	22600
0505	83.3%	32.3%	11.8%	30.0%	8.5%	69.9%	51.0%	18.3%	66.5%	54.4%	21300
0506	84.2%	26.2%	15.5%	35.2%	6.4%	77.3%	45.1%	14.6%	71.2%	61.0%	24500
0507	84.6%	38.2%	10.0%	21.8%	13.9%	67.5%	60.1%	21.0%	66.4%	52.5%	19500
0508; 0512	87.0%	29.7%	14.0%	31.0%	8.4%	72.6%	49.2%	16.0%	68.4%	57.4%	22800
0509	83.9%	33.1%	12.9%	28.0%	10.1%	75.1%	53.1%	16.9%	68.6%	57.0%	22400
0510	82.9%	33.5%	10.7%	33.5%	8.2%	68.9%	45.8%	18.8%	65.6%	53.3%	21000
0601; 0605	86.8%	32.1%	11.6%	26.3%	11.4%	72.3%	54.7%	16.0%	68.1%	57.2%	22400
0602	87.0%	29.9%	16.7%	30.7%	9.9%	76.2%	51.7%	14.3%	69.1%	59.3%	23800
0603	88.2%	26.0%	18.5%	34.1%	6.8%	79.7%	47.6%	13.3%	70.3%	60.9%	25300
0604	88.8%	25.3%	16.9%	33.2%	7.2%	77.9%	45.6%	12.2%	68.8%	60.4%	25100

<b>0701; 0702; 0703; 0704; 0707; 0708; 0709; 0711; 0716</b>	86.9%	31.1%	13.2%	30.4%	9.2%	72.2%	51.3%	14.8%	68.6%	58.5%	22912
<b>0706; 0714; 1003</b>	87.4%	28.4%	15.6%	33.5%	7.1%	72.7%	47.2%	14.4%	69.2%	59.3%	23740
<b>0710</b>	81.0%	31.6%	13.3%	32.9%	9.1%	69.6%	48.3%	12.6%	70.3%	61.3%	23400
<b>0801</b>	88.7%	25.6%	14.1%	37.4%	6.7%	74.4%	43.5%	11.1%	70.7%	62.9%	25800
<b>0802</b>	83.9%	25.3%	10.3%	31.1%	14.0%	72.3%	50.6%	15.0%	65.6%	55.9%	21500
<b>0803</b>	88.0%	22.5%	17.4%	42.5%	4.7%	75.1%	38.4%	10.5%	70.8%	63.4%	27600
<b>0804</b>	87.7%	31.9%	11.2%	26.6%	9.2%	70.5%	54.2%	15.1%	69.0%	58.6%	22800
<b>0805</b>	88.1%	29.0%	13.1%	29.5%	8.9%	70.1%	51.0%	13.2%	70.8%	61.4%	25400
<b>0806; 0809; 0810</b>	87.7%	29.0%	12.8%	29.6%	9.5%	70.9%	52.3%	14.5%	70.2%	60.0%	24384
<b>0807</b>	88.3%	24.3%	14.9%	42.0%	5.1%	77.0%	38.9%	11.0%	71.4%	63.5%	23700
<b>0808</b>	88.8%	26.9%	15.5%	35.0%	8.0%	73.5%	46.2%	11.8%	69.8%	61.5%	25400
<b>0901</b>	88.7%	29.7%	12.3%	33.5%	6.4%	71.1%	48.1%	12.2%	69.6%	61.3%	23000
<b>0902</b>	85.6%	31.6%	11.5%	29.5%	7.5%	71.1%	51.9%	15.7%	67.9%	57.2%	22400
<b>0903</b>	84.8%	34.6%	9.2%	34.2%	9.3%	62.7%	51.3%	17.9%	67.0%	55.0%	20600
<b>0904</b>	88.4%	25.8%	15.9%	39.7%	3.9%	72.1%	42.8%	12.4%	70.8%	62.1%	24400
<b>1001; 1007</b>	89.9%	21.2%	20.5%	41.6%	6.9%	81.1%	37.9%	10.9%	72.0%	64.2%	28276
<b>1002</b>	89.2%	29.2%	12.2%	32.4%	7.7%	71.5%	50.1%	14.6%	69.9%	59.9%	22600
<b>1004; 1008; 1009</b>	88.8%	26.8%	15.4%	34.5%	6.2%	75.2%	45.6%	13.0%	70.8%	61.6%	24727
<b>1005; 1111</b>	90.3%	24.6%	17.2%	33.9%	9.4%	77.4%	44.9%	14.8%	71.1%	60.3%	24028
<b>1006</b>	89.5%	24.4%	16.7%	36.6%	6.2%	73.1%	47.5%	14.4%	66.9%	57.2%	23300
<b>1101</b>	90.1%	22.2%	16.3%	42.9%	4.3%	79.6%	38.7%	8.8%	73.8%	67.3%	29800
<b>1102</b>	88.7%	17.5%	21.0%	37.5%	6.5%	80.8%	41.4%	14.4%	69.8%	62.1%	24200
<b>1103</b>	85.6%	26.9%	13.0%	35.9%	7.5%	71.0%	44.0%	12.6%	70.8%	62.1%	24500
<b>1104; 1109; 1112</b>	90.0%	23.4%	16.3%	42.7%	4.5%	77.1%	36.9%	8.4%	72.6%	66.4%	27509
<b>1107</b>	88.4%	24.8%	16.9%	38.8%	5.3%	77.2%	38.0%	9.4%	71.7%	65.0%	23800
<b>1108</b>	89.4%	25.9%	16.0%	36.9%	6.6%	75.9%	44.4%	12.1%	70.9%	61.9%	28100
<b>1110</b>	86.7%	19.5%	13.8%	48.9%	4.3%	81.6%	37.0%	7.8%	71.4%	64.8%	29000
<b>1113</b>	89.6%	25.4%	13.1%	41.8%	5.8%	72.1%	37.8%	10.5%	73.3%	65.6%	25800

Note: Columns (1)–(7) show the percentage of individuals within an iwi captured within the measure [(1) lived in a household with access to a cell phone or mobile phone (ca); (2) Regular Smokers (rs); (3) holds a bachelor's degree or higher (boh); (4) owned or partly owned the home that they lived in (oh); (5) living in Housing New Zealand accommodation (hnz); (6) holds a formal qualification (fq); (7) living in rental accommodation (ra)]; (8) shows the unemployment rate of an iwi (ur); (9) shows the percentage of individuals within an iwi that are in the labour force (lf); (10) shows the employment rate of an iwi (er); (11) shows the median income of an iwi (mi).

## Chapter 4 - Methodology

### 4.1 Changes in Māori Land Ownership and Land Use Capability Over Time

The analysis begins by exploring whether the proportion of Māori landholdings in each LUC class changes over time. As observed in appendix table 3, there is a noticeable discrepancy between the proportions of contemporary Māori landholdings in each LUC class when compared with that of all New Zealand, with Māori land consisting of disproportionately less "higher versatility" land (particularly in regard to LUC class 1, 2 and 3) and, conversely, disproportionately more "lower versatility" land (LUC class 6, 7 and 8). By considering the proportion of Māori landholdings in each LUC class at different points in time, it is possible to identify explanations for why this discrepancy now exists and whether it is in part a result of historic path dependency.

Thus, the thesis calculates the proportion of Māori landholdings in each LUC class at different points in time by intercepting the Māori landholdings geospatial datasets with the LUC geospatial dataset to obtain the number of hectares of Māori land in each LUC class, then calculating each as a percentage of the total land area. There is also an interest in analysing the LUC class proportions of confiscated land. To do this, the Māori land confiscations geospatial dataset were intercepted with the LUC geospatial dataset to obtain the number of hectares of confiscated land in each LUC class, then calculating each as a percentage of the total land area.

### 4.2 Māori Land Ownership and Land Use Capability

As discussed, iwi whose rohe encapsulated a high proportion of arable land may have been more likely to have had their land alienated at an earlier time relative to iwi whose rohe encapsulated a low proportion of arable land. This section explores whether the LUC class proportions within an iwi rohe is correlated with the Māori landholdings of the iwi at different times. There is a particular interest in looking at the changes in the proportion of Māori land ownership by iwi and by LUC class between 1864 and 1880 since this is the time when confiscations occurred.

To examine the relationship between Māori land loss and LUC class, the proportion of Māori land ownership of each iwi is regressed on LUC class within the iwi rohe, using robust standard errors throughout. Māori land ownership of an iwi is proxied as being Māori landholdings which lie within an iwi rohe. An OLS regression is estimated for each of a number of time periods of the following form:

$$pct\_mlo_{i,t} = \beta_0 + \sum_{c=1}^8 \beta_{1c} pct\_luc_{c,i} + \beta_2 pct\_luco_i + \beta_3 con\_dum_i + e_i \quad (1.0)$$

where the subscript  $i$  denotes the iwi;  $pct\_mlo_{i,t}$  is the per cent of the rohe held as Māori land of iwi  $i$  in year  $t$ , where  $t$  denotes the year 1864, 1880, 1890, 1910, 1939 or 2017;  $pct\_luc_{c,i}$  is the percentage of the respective LUC class,  $c$ , from LUC class 1 through to 8, within the rohe of iwi  $i$ ;  $pct\_luco_i$  is the percentage of the 'Other' classes (towns, rivers, estuaries, quarries, lakes and missing) within the rohe of iwi  $i$ ;  $con\_dum_i$  is a dummy variable for whether the iwi suffered land losses through confiscation; and  $e_i$  is the error term of iwi  $i$ . Māori landholdings are represented as a percentage of iwi rohe so that iwi of different (rohe) sizes can be directly compared. Note that these regressions are unweighted, since here the analysis is of the impact that these land losses had on each iwi (rather than on individual iwi members). Each model regresses North Island iwi only since this is where the majority of iwi reside (92 per cent), both in terms of the number of individual iwi and the number of individual iwi affiliates.<sup>28</sup> Additionally, Māori landholdings in the South Island do not change from 1864 until 2017.<sup>29</sup>

The vector of parameters,  $\beta_{1c}$ , illustrate the relationship that each LUC class has with Māori landholdings in the period,  $t$ , each as a proportion of iwi  $i$ 's rohe. Alternative independent variables have also been created which represent aggregated LUC classes for both arable land (LUC 1 - 4) and non-arable land (LUC 5 – 8). These latter groupings of arable and non-arable land are the focus of these regressions. The variable  $pct\_luco_i$  has also been added as a control. A dummy variable for the 47 iwi that suffered confiscations of any amount is employed and was created by intercepting the iwi rohe geospatial dataset with the confiscation geospatial dataset. This variable is used to analyse whether there are any differences in outcomes between iwi who suffered land loss through confiscation and those who did not (taking into consideration that both groups would have suffered land loss in other forms, such as through crown and private acquisitions).

This thesis is interested in analysing the relationship between these variables as it is important to understand what role land quality had in determining the loss of Māori land. Understanding this relationship may help to explain the impact that Māori land loss had on the contemporary wellbeing outcome measures of iwi; something examined later in the analysis.

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<sup>28</sup> Prior to reaching this model, a number of variations of the model were tested, including with and without the South Island iwi, the confiscation dummy and analytical weighting. This was the case for each of the econometric models.

<sup>29</sup> Based on the information within the Māori landholdings geospatial dataset and, subsequently, from the source images.

### 4.3 Māori Land Ownership and Contemporary Wellbeing Outcomes

This section establishes a model that examines the relationship that historic land loss has with contemporary Māori wellbeing outcomes for iwi. It examines whether variation in Māori land loss may be able to explain aspects of the variability in wellbeing outcomes observed between different iwi. This analysis contributes to the literature of both historical trauma and path dependency and estimates whether the intergenerational impacts caused by the alienation and confiscation of Māori land have led to differing levels of wellbeing between iwi.

Tables 4.3-1 and 4.3-2 display the summary statistics for the cultural wellbeing measures and socioeconomic wellbeing measures respectively, with a number of aggregated iwi groupings having data available on these measures.

*Table 4.3-1: Summary statistics of the cultural wellbeing measures*

Variable	Values	(1) N	(2) %
Ease of getting support with Māori cultural practices	Hard/very hard	76	10.41
	Sometimes easy/sometimes hard		15.38
	Easy		31.24
	Very easy		37.96
	Don't need help		4.88
Importance of involvement in Māori culture	Not at all important	76	6.37
	A little important		13.83
	Somewhat important		22.48
	Quite important		24.53
	Very important		32.62
Te reo Māori Proficient (self-rated)	No more than a few words or phrases	76	36.67
	Not very well		32.40
	Fairly well		15.58
	Very well/well		15.25
Visited ancestral marae in past 12 months	Yes	76	46.31
	No		53.69

Table 4.3-2: Summary statistics for socioeconomic wellbeing measures

Variable	(1) N	(2) Mean	(3) Std. Dev.
Labour force participation rate (%)	80	68.68	3.275
Employment rate (%)	80	58.38	3.598
Unemployment rate (%)	80	14.74	2.971
Holds a formal qualification (%)	80	72.55	4.333
Holds a bachelor's degree or higher (%)	80	13.81	2.845
Own or partly own the home that they lived in (%)	80	13.81	2.845
Lived in rental accommodation (%)	80	48.22	5.682
Lived in HNZN accommodation (%)	80	8.90	2.891
Lived in a household with access to a cellphone or mobile phone (%)	80	87.14	2.198
Regular smokers (%)	80	28.81	4.357
Median (personal) income	80	23566	2149

The analysis regresses the cultural and socioeconomic wellbeing measures of interest on Māori land ownership over time, using OLS and robust standard errors throughout, via a model of the following form for each time period:

$$wbm_{x,i} = \gamma_0 + \gamma_1 pct\_mlo_{i,t} + \gamma_2 con\_dum_i + e_i \quad (2.0)$$

where  $wbm_{x,i}$  is the wellbeing measure of interest  $x$ , of iwi  $i$ , from the 2013 Te Kupenga aggregated figures; and  $pct\_mlo_{i,t}$ ,  $con\_dum_i$  and  $e_i$  are as defined for model (1.0).

All regressions based on model (2.0) are weighted by the 2013 iwi affiliation statistics, since the analysis here considers the effect that these land losses have had on wellbeing outcomes of those individuals affiliated with an iwi, hence it must take into consideration the relative size of each iwi. Iwi with no affiliation data associated with them from within the 2013 census figures were subsequently omitted from these regressions.<sup>30</sup>

The parameter  $\gamma_1$  indicates the relationship that Māori landholdings as a proportion of iwi  $i$ 's rohe in period  $t$  has with the wellbeing measure of interest  $x$ , of iwi  $i$ , in 2013. As illustrated in model (2.0), each  $t$  of  $pct\_mlo_{i,t}$  is individually tested as an independent variable to explain the dependent variable,  $wbm_{x,i}$ . As before, the main model specification also employs the use of a dummy variable for the iwi that suffered confiscations of any amount.<sup>31</sup>

<sup>30</sup> This comprised 31 of the 101 iwi code (IC) groupings.

<sup>31</sup> For completeness, the model was run exclusive of the analytical weighting and the confiscation dummy variable. These results are comparable to those discussed within chapter 5.

In the case of the cultural wellbeing measures of *importance of involvement in Māori culture* and *Te Reo Māori proficiency (self-rated)*, the model is estimated using both OLS and ordered logit. In the OLS model, the  $wbm_{x,i}$  measures are percentages (of the iwi) answering as indicated. To estimate the ordered logit regression model, a generated dataset containing ordinal measures for each of the two cultural wellbeing measures was created.<sup>32</sup> This dataset was created based on the percentage of each type of response for each variable of each iwi, represented as a number of ordinal responses out of 100<sup>33</sup>, with each percentage response rounded to the nearest whole number.<sup>34</sup> This was done so that the measures could be represented as ordinal responses instead of as percentages, thus making them suitable for use within an (unweighted) ordered logit regression model estimation. This was done in the absence of access to the raw survey data.

All ordered logit regressions have standard errors clustered by the 2013 iwi affiliation statistics. Iwi with no affiliation data associated with them from within the 2013 census figures were omitted from these regressions.

One of the underlying assumptions of the ordered logit model is that the relationship between each pair of outcome groups is the same: the parallel regression assumption (Fullerton, 2009). If the model violates this assumption, a generalised ordered logit model would be more appropriate (Williams, 2016). To test this assumption and, thus, the suitability of the ordered logit model, a likelihood-ratio test and a Brant test were performed. After performing these tests for each model, no statistical evidence was found to suggest that this assumption had been violated.<sup>35</sup>

#### 4.4 Iwi Population Growth Rates and Māori Land Ownership

Lastly, to examine the impact that historic land losses have had on iwi population growth, this analysis regresses an iwi population measure (IPM) on Māori land ownership as a percentage of iwi rohe over time, using robust standard errors throughout, employing an OLS regression model of the following form:

$$ipm_{i,z} = \delta_0 + \delta_1 pct\_mlo_{i,t} + \delta_2 con\_dum_i + e_i \quad (3.0)$$

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<sup>32</sup> An ordinal variable was not created for the cultural wellbeing measure “visited ancestral marae in past 12 months” as this only had two possible survey responses (“Yes” or “No”).

<sup>33</sup> This is why there are 7,000 observations for ordered logit regression model outputs in section 5.3

<sup>34</sup> For instance, within the original dataset (using proportions) if 17 percent of an iwi speak “fairly well” in te reo Māori, then that would be represented in the ordinal dataset as 17 individual responses of 3 (i.e., fairly well).

<sup>35</sup> These tests have been omitted for brevity.

where  $ipm_{i,z}$  is the ratio figure representing the population of the iwi in time period  $z$  (either 1881, 1991 or 2013) relative to the base year of 1874; and  $pct_{mlo_{i,t}}$  and  $con_{dum_i}$  are as above. Only iwi that have data available for time period  $z$ , the base year and the Māori land ownership could be included in the regression.

The parameter  $\delta_1$  indicates the relationship that Māori landholdings as a proportion of iwi  $i$ 's rohe in period  $t$ , has with the iwi population/affiliation growth (represented as a ratio), between the base year and time period  $z$ .

Results relating to model (3.0) have been omitted from chapter 5 and not discussed in chapter 6 as they were not found to be statistically significant. Thus, no evidence was found that the alienation of Māori landholdings is correlated with subsequent population growth observed between iwi during these periods.



## Chapter 5 - Results

### 5.1 Changes in Māori Land Ownership and Land Use Capability Over Time

To begin this analysis, the proportion of Māori landholdings in each LUC class at different points in time is calculated by intercepting the Māori landholdings geospatial datasets with the LUC geospatial dataset to obtain the number of hectares of Māori land in each LUC class, then calculating each as a percentage of the total hectares of Māori land. This is shown separately for each of the distinct periods for which Māori land geospatial data is available, that being 1840<sup>36</sup>, 1864, 1880, 1890, 1910, 1939, and 2017.

Table 5.1-1 represents these proportions at each time. The change observed between 1840 and 1864 (column (1) to (2) respectively) shows the proportion of Māori landholdings in arable suitable land (LUC class 1-4) increasing. This change is largely a result of the fact that almost the entire South Island (roughly 99 per cent) had been alienated from Māori ownership during this period. Since the South Island comprises less arable land than that of the North Island, the proportions of Māori landholdings in arable suitable land (LUC class 1-4) increased and simultaneously, land unsuitable for arable use (LUC class 5-8) decreased.

From 1864 to 2017, this pattern is reversed, as the proportion of Māori landholdings in arable suitable land (LUC class 1-4) decreases from 20.8 per cent to 17.8 per cent. During the period from 1864 to 1880, there is a substantial decrease in the proportion of Māori landholdings in arable suitable land (LUC class 1-4) from 27 per cent to 20.8 per cent. Within arable suitable land classes LUC class 1 and 2 exhibit the most drastic changes, with the proportion of Māori landholdings in LUC class 2 decreasing by 47.6 per cent (2.8 percentage points) and the proportion of Māori landholdings in LUC class 1 decreasing by 61.1 per cent (0.84 percentage points). During this period, there were a number of significant historical events that impacted Māori land ownership, such as the establishment of the Native Land Court in 1865 and, most notably, Māori land confiscations under the New Zealand Settlements Act 1863.

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<sup>36</sup> Since Māori owned 100 percent of the land in New Zealand in 1840 (at least, in the legal sense of the time), the LUC class proportions for this year are the same as the LUC class proportions of total New Zealand.

*Table 5.1-1: Proportions of Māori landholdings in each LUC class over time (alongside NZ, NI and SI)*

LUC Class	(1) 1840 <sup>37</sup>	(2) 1864	(3) 1880	(4) 1890	(5) 1910	(6) 1939	(7) 2017	(8) NZ 38 39	(9) NI	(10) SI
<b>1</b>	0.71%	1.37%	0.53%	0.58%	0.62%	0.58%	0.57%	0.71%	1.33%	0.23%
<b>2</b>	4.53%	5.88%	3.08%	3.34%	3.09%	2.57%	2.37%	4.53%	6.07%	3.35%
<b>3</b>	9.20%	8.53%	7.26%	7.55%	6.65%	6.12%	5.62%	9.20%	9.29%	9.11%
<b>4</b>	10.47%	11.23%	9.93%	9.93%	9.91%	9.79%	9.24%	10.47%	11.35%	9.77%
<b>5</b>	0.79%	0.79%	0.63%	0.69%	0.44%	0.33%	0.47%	0.79%	0.82%	0.77%
<b>6</b>	28.16%	35.37%	34.69%	35.40%	34.65%	33.72%	34.64%	28.16%	35.61%	22.45%
<b>7</b>	21.43%	25.41%	29.61%	27.65%	28.34%	29.08%	30.15%	21.43%	24.22%	19.28%
<b>8</b>	21.85%	9.64%	12.01%	12.36%	13.29%	13.12%	11.50%	21.85%	8.86%	31.66%
<b>Other</b> <sup>40</sup>	2.86%	1.79%	2.25%	2.51%	3.02%	4.68%	5.44%	2.86%	2.44%	3.37%

To explore this relationship further, the thesis examines the proportion of each LUC class within land that was taken through these confiscations. Row (1) of table 5.1-2 shows the proportion of each LUC class that exists within land that was confiscated by the Crown under the New Zealand Settlements Act 1863. Rows (2)–(6) show the proportion of each LUC class within each region of which the confiscations occurred, those being Tauranga, Bay of Plenty, Hawke's Bay, Taranaki and Waikato respectively.<sup>41</sup>

Analysing the results within row (1) of table 5.1-2 shows that confiscated land was far more likely to be arable land, with a larger proportion of confiscated land being of LUC class 1-4, and, in particular LUC class 1 and LUC class 2 land, when compared to that observed throughout New Zealand and the North Island (shown in rows (1) and (2) of table 5.1-3). Land that was taken through confiscation comprised 40.6 per cent arable suitable land while the total area of New Zealand and the North Island comprises 24.9 per cent and 28.1 per cent arable land respectively. Within LUC class 1 and 2, this variation is exhibited even more drastically. The proportion of confiscated land in LUC class 2 is 3.29 times larger than the average proportion within New Zealand (10.37 percentage points greater) and 2.45 times larger than the average proportion within the North Island (8.82 percentage points greater). The proportion of confiscated land

<sup>37</sup> These figures were calculated from the geospatial dataset and thus differ very slightly from the figures referenced in appendix table 3, some of which are a result of rounding error differences. In any respect, they help to show the level of accuracy and consistency that exists within the geospatial data.

<sup>38</sup> These calculations exclude 'uncaptured' areas, which are small areas that are a result of the discrepancy between the Māori landholdings geospatial dataset and the LUC geospatial dataset, hence a LUC class could not be associated with these areas. These 'uncaptured' areas make up roughly 0.5 percent of the aggregated area of all rohe.

<sup>39</sup> This total excludes the areas of islands that are not captured within the LUC geospatial dataset, such as Stewart Island and the Chatham Islands.

<sup>40</sup> Includes all unmapped areas such as towns, rivers, estuaries, quarries and lakes.

<sup>41</sup> These specified regions are based on those which are defined within the source map images.

in LUC class 1 is 5.63 times larger than the average proportion within New Zealand (3.26 percentage points greater) and 2.97 times larger than the average proportion within the North Island (2.64 percentage points greater).

*Table 5.1-2: LUC class proportions of confiscated land*

Region	LUC Class (%)									Total
	1	2	3	4	5	6	7	8	Other	
<b>(1) All Confiscated Land</b>	<b>3.97</b>	<b>14.89</b>	<b>11.28</b>	<b>10.47</b>	<b>2.22</b>	<b>28.50</b>	<b>21.85</b>	<b>5.28</b>	<b>1.55</b>	<b>100</b>
(2) Tauranga	0.00	5.3	11.68	17.91	0.62	37.01	17.21	7.33	2.94	100
(3) Eastern Bay of Plenty - Opotiki	1.36	14.19	6.73	4.86	0.00	21.83	43.30	6.71	1.03	100
(4) Hawke's Bay	0.32	0.69	1.63	3.20	0.00	43.39	37.18	13.44	0.15	100
(5) Taranaki	6.72	9.93	14.44	10.72	5.82	20.86	24.32	6.71	0.48	100
(6) Waikato	3.83	26.96	12.15	12.94	0.00	34.41	6.32	0.33	3.07	100

*Table 5.1-3: LUC class proportions within New Zealand and the North Island*

Region	LUC Class (%)									Total
	1	2	3	4	5	6	7	8	Other	
<b>(1) New Zealand</b>	0.71	4.53	9.20	10.47	0.79	28.16	21.43	21.85	2.86	100
<b>(2) North Island<sup>42</sup></b>	1.33	6.07	9.29	11.35	0.82	35.61	24.22	8.86	2.44	100

## 5.2 Māori Land Ownership and Land Use Capability

The patterns observed in section 5.1 and table 5.1-1 and 5.1-2 are suggestive of selection effects that have resulted in path dependency in which changes in Māori land ownership over time are predicated by the arable versatility and quality of the land.<sup>43</sup>

Table 5.2-1 below shows the results of regressions for Māori land ownership on arable land and the confiscation dummy for each time period.<sup>44</sup>

<sup>42</sup> Adapted from Lynn et al. (2009, p. 147)

<sup>43</sup> Although information regarding the LUC index would obviously not have been available in the 19<sup>th</sup> century, land surveyors of the time would have had knowledge of what land was the most valuable for arable use.

<sup>44</sup> As a precursor to the results shown in table 5.2-1, model (1.0) was estimated on each individual LUC class as a percentage of iwi rohe. These outputs are comparable to those within table 5.2-1, but have been omitted for succinctness.

Table 5.2-1: Regressing Māori land ownership over time on arable land and confiscation dummy

	(1) 1864	(2) 1880	(3) 1890	(4) 1910	(5) 1939	(6) 2017
Arable land	-0.0633 (0.139)	-0.519*** (0.174)	-0.465*** (0.161)	-0.400*** (0.141)	-0.274*** (0.0987)	-0.208*** (0.0751)
Control for 'Other' classes	-2.445*** (0.523)	-1.369*** (0.453)	-1.101*** (0.379)	-0.727** (0.278)	-0.511*** (0.191)	-0.353** (0.136)
Confiscation dummy	14.28*** (4.489)	1.644 (6.200)	0.398 (5.475)	1.003 (4.395)	-1.815 (3.024)	-1.733 (2.328)
Constant	85.26*** (5.551)	61.34*** (6.282)	53.62*** (5.909)	36.66*** (6.045)	23.45*** (4.622)	18.66*** (2.948)
<i>N</i>	93	93	93	93	93	93
<i>R</i> <sup>2</sup>	0.354	0.165	0.156	0.139	0.141	0.159
adj. <i>R</i> <sup>2</sup>	0.332	0.137	0.127	0.110	0.112	0.131
rmse	21.61	27.54	24.48	20.44	14.72	10.27

Robust standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

The coefficients for arable land from 1880 onwards are all negative and statistically significant at the 1% level. The absolute value of these coefficients decreases over time; however, the statistical significance of these results does not disappear. These results suggest that those iwi who had a large proportion of arable land within their rohe were more likely to experience a greater proportion of land loss overall (as a proportion of their rohe). The results for 1880 are particularly interesting as this is the first time period following the confiscation of Māori land that occurred in the late 1860s. As shown in column (2) of table 5.2-1, a one percentage point increase in the proportion of land that is arable is associated with a 0.5 percentage point decrease in Māori land ownership percentage in 1880 (0.174 se).

The estimate for the coefficient on the confiscation dummy variable is positive and statistically significant for 1864; however, this does not hold for any other time period. In every other time period, the coefficient for the confiscation dummy variable is not statistically significant. This finding suggests that those iwi who suffered confiscation following 1864 (and before 1880) were *more* likely to have higher levels of Māori land ownership in 1864 compared to iwi who did not suffer land alienations through confiscation, for a given amount of arable land. This result aligns with the history surrounding the New Zealand Wars, which escalated as a result of united Māori resistance against ongoing land alienations (Ministry for Culture and Heritage, 2019). To explore this change further, the *change* in the percentage of Māori land in an iwi rohe between 1864 and 1880 is regressed on LUC class as a percentage of iwi rohe, as follows:

$$(pct\_mlo_{i,1880} - pct\_mlo_{i,1864}) = \theta_0 + \theta_1 pct\_arable_i + \theta_2 pct\_luco_i + \theta_3 con\_dum_i + e_i \quad (1.1)$$

where  $pct\_arable_i$  is the percentage of arable land (LUC class 1-4), within the rohe of iwi  $i$ . Table 5.2-2 shows the estimated coefficients of model (1.1):

*Table 5.2-2: Relationship between change in Māori land ownership from 1864 - 1880 and arable land*

	(1)
Percentage of iwi rohe classified as arable land	-0.455*** [0.145]
Confiscation dummy	-12.64*** [4.678]
Control for 'Other' classes	1.076*** [0.288]
Constant	-23.92** [5.351]
$N$	93
$R^2$	0.253
adj. $R^2$	0.227
rmse	21.43

Robust standard errors in brackets

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

These results reaffirm the change seen between 1864 and 1880 in table 5.2-1. The coefficient for the confiscation dummy variable is negative, large and statistically significant at the 1% level. This result suggests that confiscation suffering iwi experienced greater land loss over this period than those iwi that avoided confiscation, for a given level of Māori land ownership.

### 5.3 Māori Land Ownership and Contemporary Cultural Wellbeing Outcomes

This section will consider the relationship that historic land loss has with contemporary Māori cultural wellbeing outcomes for iwi. In doing so, it will examine whether variation in Māori land loss may be able to explain aspects of the variability in cultural wellbeing outcomes observed between different iwi in 2013.

Tables 5.3-1 and 5.3-5 show estimates based on the ordered logit model using model (2.0), reporting the output results of each of the cultural wellbeing measures within the ordinal dataset. Note that an ordered logit model for *ease of getting support with Māori cultural practices* is not estimated since the available response categories were not clearly ordered. Tables 5.2-2 to 5.3-7 (excluding Table 5.3-5) show OLS estimates based on model (2.0), reporting the output results of each of the cultural wellbeing measures

with statistically significant results.<sup>45</sup> Within each of these tables, row (1) reports the coefficient estimates of the confiscation dummy variable and rows (2) through (7) report the coefficient estimates of Māori land ownership as a percentage of iwi rohe, for each of the different time periods of 2017, 1939, 1910, 1890, 1880 and 1864 respectively. The robust standard errors are reported in square brackets underneath each of the point estimates.

### 5.3.1 Te Reo Māori Proficiency

Table 5.3-1 shows the results of an ordered logit model that regresses the cultural wellbeing measure of *te reo Māori proficiency (self-rated)* on Māori land ownership and the confiscation dummy. Each of the coefficient estimates of Māori land ownership percentage is positive and the coefficients for 1939 and 2017 statistically significant at the 5% level (the 1910 and 1864 coefficients are significant at the 10% level).

*Table 5.3-1: Proficiency in te reo Māori (self-rated) [ordered logit]*

	(1)	(2)	(3)	(4)	(5)	(6)
con_dum	0.151 [0.103]	0.132 [0.103]	0.102 [0.100]	0.114 [0.108]	0.113 [0.106]	0.118 [0.110]
pct_mlo_2017	0.00861*** [0.00284]					
pct_mlo_1939		0.00662** [0.00260]				
pct_mlo_1910			0.00466* [0.00270]			
pct_mlo_1890				0.00262 [0.00243]		
pct_mlo_1880					0.00256 [0.00197]	
pct_mlo_1864						0.00385* [0.00232]
N	7000	7000	7000	7000	7000	7000

Robust standard errors in brackets

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

This result implies that individuals that belonged to an iwi who held a larger proportion of the land within their rohe during these years were more likely to report high levels of te reo Māori proficiency in 2013. The confiscation dummy was not found to be statistically significant in these instances.

Table 5.3-2 regresses the percentage of individuals that belonged to an iwi who responded that they spoke "very well/well" in te reo Māori on Māori land ownership as a percentage of iwi rohe, for each time period.

<sup>45</sup> The output results of the remaining cultural wellbeing measures which showed no statistical significance across any of independent variables have been omitted for succinctness.

Each of the coefficient estimates of Māori land ownership percentage is positive and the coefficients for 1939 and 2017 statistically significant at the 5% level (the 1910 coefficient is significant at the 10% level). The confiscation dummy was again not found to be statistically significant in these instances.

*Table 5.3-2: Speaks very well/well in te reo Māori [OLS]*

	(1)	(2)	(3)	(4)	(5)	(6)
con_dum	2.576* [1.418]	2.343 [1.411]	1.918 [1.260]	2.076 [1.338]	2.085 [1.335]	2.180 [1.392]
pct_mlo_2017	0.103** [0.0430]					
pct_mlo_1939		0.0803** [0.0376]				
pct_mlo_1910			0.0689* [0.0360]			
pct_mlo_1890				0.0439 [0.0304]		
pct_mlo_1880					0.0388 [0.0244]	
pct_mlo_1864						0.0487 [0.0310]
Constant	13.43*** [0.762]	13.68*** [0.724]	13.25*** [0.985]	13.30*** [1.278]	13.32*** [1.169]	10.75*** [2.756]
<i>N</i>	70	70	70	70	70	70
<i>R</i> <sup>2</sup>	0.162	0.161	0.196	0.154	0.154	0.142
adj. <i>R</i> <sup>2</sup>	0.137	0.136	0.172	0.129	0.129	0.116
rmse	3.608	3.610	3.536	3.626	3.626	3.652

Robust standard errors in brackets

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

As with the ordered logit results, the OLS result implies that individuals that belonged to an iwi who held a larger proportion of land within their rohe during these years were more likely to respond that they spoke "very well/ well" in te reo Māori in 2013.

### 5.3.2 Ease of Getting Support with Māori Cultural Practices

Table 5.3-3 uses, as the dependent variable, the percentage of individuals that belonged to an iwi who responded that they found it "hard/very hard" getting support with Māori cultural practices. The hypothesis is that the coefficient on Māori landholdings will be negative, while the coefficient on the confiscation dummy will be positive. Each of the coefficient estimates are negative and the coefficients for 1880, 1890 and 1910 are statistically significant at the 5% level (the 1939 and 2017 coefficients are significant at the 10% level). Additionally, the absolute value of these coefficients estimates increases over time, with a material increase between 1864 and 1880. The confiscation dummy was not found to be statistically significant in these instances.

*Table 5.3-3: Find it hard/very hard getting support with Māori cultural practices [OLS]*

	(1)	(2)	(3)	(4)	(5)	(6)
con_dum	-0.940 [0.764]	-0.800 [0.744]	-0.524 [0.711]	-0.612 [0.741]	-0.602 [0.706]	-0.726 [0.823]
pct_mlo_2017	-0.0640* [0.0347]					
pct_mlo_1939		-0.0560* [0.0291]				
pct_mlo_1910			-0.0442** [0.0187]			
pct_mlo_1890				-0.0310** [0.0143]		
pct_mlo_1880					-0.0308** [0.0126]	
pct_mlo_1864						-0.0151 [0.0160]
Constant	11.78*** [0.681]	11.72*** [0.646]	11.93*** [0.654]	12.00*** [0.796]	12.13*** [0.790]	12.13*** [1.436]
<i>N</i>	70	70	70	70	70	70
<i>R</i> <sup>2</sup>	0.163	0.193	0.229	0.181	0.218	0.063
adj. <i>R</i> <sup>2</sup>	0.138	0.169	0.206	0.157	0.195	0.035
rmse	1.753	1.721	1.682	1.734	1.694	1.855

Robust standard errors in brackets

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

This result implies that individuals that belonged to an iwi who held a larger proportion of the land within their rohe during these years were less likely to respond that they found it "hard/very hard" to get help with Māori cultural practices in 2013.

Table 5.3-4 regresses the percentage of individuals that belonged to an iwi who responded that they "don't need help" getting support with Māori cultural practices. The hypothesis is that the coefficient on Māori landholdings will be positive, while the coefficient on the confiscation dummy will be negative. Each of the coefficient estimates of the confiscation dummy variable in each instance is found to be negative and statistically significant. The coefficient estimates of Māori land ownership percentage were not found to be statistically significant.



Table 5.3-4: Don't need help getting support with Māori cultural practices [OLS]

	(1)	(2)	(3)	(4)	(5)	(6)
con_dum	-1.210** [0.475]	-1.196** [0.480]	-1.102** [0.441]	-1.127** [0.456]	-1.133** [0.455]	-1.178** [0.513]
pct_mlo_2017	-0.00762 [0.0282]					
pct_mlo_1939		-0.00939 [0.0214]				
pct_mlo_1910			-0.0164 [0.0140]			
pct_mlo_1890				-0.0132 [0.0107]		
pct_mlo_1880					-0.0110 [0.00926]	
pct_mlo_1864						-0.00525 [0.00950]
Constant	5.475*** [0.383]	5.512*** [0.360]	5.769*** [0.384]	5.859*** [0.466]	5.827*** [0.452]	5.815*** [0.705]
N	70	70	70	70	70	70
R <sup>2</sup>	0.224	0.229	0.277	0.276	0.270	0.226
adj. R <sup>2</sup>	0.201	0.206	0.256	0.254	0.248	0.203
rmse	1.140	1.136	1.100	1.101	1.106	1.138

Robust standard errors in brackets

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

This result implies that individuals that belonged to an iwi who suffered some proportion of land alienations through confiscation were less likely to state that they "don't need help" with Māori cultural practices in 2013 compared to individuals that belonged to an iwi who did not experience confiscation. This result may suggest that those individuals that belonged to an iwi who suffered confiscation were more likely to need help with Māori cultural practices. Overall, these findings indicate the existence of some level of historic trauma persisting over time in relation to this cultural wellbeing measure.

### 5.3.3 Importance of Involvement in Māori Culture

Table 5.3-5 shows the results of an ordered logit model that regresses the cultural wellbeing measure of *importance of involvement in Māori cultural practices* on Māori land ownership and the confiscation dummy. The coefficient estimates of the confiscation dummy variable in each instance are positive and statistically significant at the 5% level.

*Table 5.3-5: Importance of involvement in Māori cultural practices [ordered logit]*

	(1)	(2)	(3)	(4)	(5)	(6)
con_dum	0.171** [0.0743]	0.163** [0.0749]	0.149** [0.0702]	0.154** [0.0723]	0.154** [0.0722]	0.157** [0.0742]
pct_mlo_2017	0.00328 [0.00227]					
pct_mlo_1939		0.00264 [0.00198]				
pct_mlo_1910			0.00239 [0.00190]			
pct_mlo_1890				0.00152 [0.00163]		
pct_mlo_1880					0.00142 [0.00134]	
pct_mlo_1864						0.00202 [0.00171]
N	7000	7000	7000	7000	7000	7000

Robust standard errors in brackets

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

This result implies that individuals that belonged to an iwi who suffered some proportion of land alienations through confiscation were more likely to find it important being involved in Māori culture in 2013 compared to individuals that belonged to an iwi who did not experience confiscation, for a given level of Māori land ownership as a percentage of iwi rohe.

Table 5.3-6 regresses the percentage of individuals that belonged to an iwi who responded that they find it either "quite important" or "very important" being involved in Māori culture on Māori land ownership as a percentage of iwi rohe, for each time period. As with the ordered logit results, each of the coefficient estimates on the confiscation dummy variable is positive and statistically significant at the 5% level.

Table 5.3-6: Find it quite important or very important being involved in Māori culture [OLS]

	(1)	(2)	(3)	(4)	(5)	(6)
con_dum	4.757** [1.919]	4.567** [1.924]	4.228** [1.832]	4.373** [1.906]	4.356** [1.892]	4.429** [1.970]
pct_mlo_2017	0.0858 [0.0543]					
pct_mlo_1939		0.0713 [0.0481]				
pct_mlo_1910			0.0538 [0.0470]			
pct_mlo_1890				0.0296 [0.0410]		
pct_mlo_1880					0.0309 [0.0341]	
pct_mlo_1864						0.0398 [0.0444]
Constant	53.79*** [1.422]	53.92*** [1.380]	53.73*** [1.644]	53.94*** [1.984]	53.76*** [1.917]	51.63*** [3.916]
N	70	70	70	70	70	70
R <sup>2</sup>	0.207	0.211	0.215	0.196	0.202	0.199
adj. R <sup>2</sup>	0.184	0.187	0.191	0.172	0.179	0.175
rmse	4.835	4.824	4.812	4.869	4.850	4.859

Robust standard errors in brackets

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

This result implies that individuals that belonged to an iwi who suffered some proportion of land alienations through confiscation were more likely to state that they place "high importance" being involved in Māori culture in 2013 compared to individuals that belonged to an iwi who did not experience confiscation.

Overall, the results relating to this cultural wellbeing measure indicate the existence of some level of historic trauma persisting over time, materialising as a need to remain involved in Māori culture. The results also provide further evidence to suggest that the way in which land was alienated from certain iwi, in particular through confiscation, plays an important role in predicting contemporary cultural wellbeing outcomes.

#### 5.3.4 Visited Ancestral Marae in Past 12 Months

Table 5.3-7 regresses the percentage of iwi who responded "yes" as to having visited their ancestral marae in the past 12 months on Māori land ownership and the confiscation dummy. Each of the coefficient estimates on the confiscation dummy variable are positive and statistically significant at the 5% level.

Table 5.3-7: Had visited ancestral marae in the past 12 months [OLS]

	(1)	(2)	(3)	(4)	(5)	(6)
con_dum	6.133** [2.457]	5.946** [2.454]	5.526** [2.443]	5.625** [2.493]	5.569** [2.436]	5.791** [2.604]
pct_mlo_2017	0.0860 [0.0933]					
pct_mlo_1939		0.0762 [0.0781]				
pct_mlo_1910			0.0684 [0.0528]			
pct_mlo_1890				0.0560 [0.0416]		
pct_mlo_1880					0.0630 [0.0379]	
pct_mlo_1864						0.0463 [0.0545]
Constant	41.18*** [2.463]	41.23*** [2.367]	40.75*** [2.399]	40.34*** [2.576]	39.79*** [2.590]	38.46*** [4.612]
N	70	70	70	70	70	70
R <sup>2</sup>	0.224	0.229	0.243	0.244	0.268	0.223
adj. R <sup>2</sup>	0.201	0.206	0.221	0.221	0.246	0.200
rmse	5.840	5.820	5.767	5.764	5.672	5.843

Robust standard errors in brackets

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

This result implies that individuals that belonged to an iwi who suffered some proportion of land alienations through confiscation were more likely to state that they had visited their ancestral marae in the last 12 months compared to iwi who did not experience confiscation. This result is consistent with the prior results from section 5.3.3.

## 5.4 Māori Land Ownership and Contemporary Socioeconomic Wellbeing Outcomes

This section examines the impact that historic land losses have had on contemporary socioeconomic wellbeing outcomes for iwi. Only one of the socioeconomic measures showed any significant relationship with Māori land loss.<sup>46</sup>

Table 5.4-1 shows estimates based on model (2.0), reporting the results for the OLS regression of the percentage of iwi that lived in a household with access to a cell phone or mobile phone on Māori land ownership and the confiscation dummy. Each of the coefficient estimates on Māori land ownership

<sup>46</sup> The output results of the remaining socioeconomic wellbeing measures have been omitted for succinctness.

percentage are negative and statistically significant, with the coefficients for 1880, 1890, 1910 and 2017 being significant at the 5% level (the 1864 and 1939 coefficients are significant at the 10% level).

*Table 5.4-1: Lived in a household with access to a cell phone or mobile phone*

	(1)	(2)	(3)	(4)	(5)	(6)
con_dum	-0.389 [0.340]	-0.312 [0.334]	-0.171 [0.297]	-0.221 [0.289]	-0.227 [0.294]	-0.260 [0.300]
pct_mlo_2017	-0.0338** [0.0167]					
pct_mlo_1939		-0.0256* [0.0134]				
pct_mlo_1910			-0.0227** [0.00874]			
pct_mlo_1890				-0.0151** [0.00679]		
pct_mlo_1880					-0.0129** [0.00580]	
pct_mlo_1864						-0.0147* [0.00873]
Constant	87.47*** [0.316]	87.38*** [0.290]	87.54*** [0.295]	87.54*** [0.334]	87.52*** [0.330]	88.24*** [0.822]
<i>N</i>	73	73	73	73	73	73
<i>R</i> <sup>2</sup>	0.092	0.087	0.127	0.090	0.085	0.062
adj. <i>R</i> <sup>2</sup>	0.066	0.061	0.102	0.064	0.059	0.036
rmse	1.207	1.210	1.183	1.208	1.212	1.227

Robust standard errors in brackets

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

These results imply that individuals that belonged to an iwi who lost a larger proportion of the land within their rohe had greater cell phone and mobile access in 2013. This finding is consistent with the literature relating to the path dependency of infrastructure development, where infrastructure investment was targeted primarily at the settler population.

## Chapter 6 - Discussion

### 6.1 Changes in Māori Land Ownership and Land Use Capability Over Time

The results from section 5.1 showed that iwi that suffered confiscations had previously been more well-endowed in terms of land quality, with their land consisting of greater proportions of arable suitable land (LUC class 1-4). It shows that 40.6 per cent of land taken through confiscation comprised arable suitable land (for comparison, the total area of New Zealand and the North Island comprises only 24.9 per cent and 28.1 per cent arable land respectively). This endowment likely contributed to certain areas of land, and thus, certain iwi being targeted for confiscation by the Crown. As a result of this, by the end of the 19<sup>th</sup> century most "good" land had been alienated from Māori (Coffin, 2016).

Since confiscated land was more likely to be the most versatile arable land, the areas of land that were confiscated may have been targeted specifically because of this reason, particularly the Waikato and Taranaki regions, with the argument of "punishing rebels" being an attempt to legitimise their actions under the New Zealand Settlements Act 1863.<sup>47</sup> Ngāti Maniapoto, for instance, who supported those fighting the British in Waikato and Taranaki during the conflicts of the 1860s, largely avoided the confiscation of their land, much of which was difficult to access and not considered valuable (Boast, 2008d). This fact, alongside the results in this thesis, further defines the motives behind these confiscations: to acquire the most valuable land from Māori for settlement. The loss of land, particularly arable land, meant the loss of capital and other productive resources for affected iwi (Reid et al., 2014). Therefore, those iwi that lost significant proportions of their arable land may have experienced more unfavourable wellbeing outcomes historically, which may have had negative flow-on effects on future generations within the iwi.

### 6.2 Māori Land Ownership and Land Use Capability

As discussed within section 5.2, the results from table 5.2-1 suggest that iwi who had a large proportion of arable land within their rohe were more likely to experience the greatest proportion of land loss overall (as a proportion of their rohe). This reaffirms the historical narrative that Māori land that was suitable for

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<sup>47</sup> It is important to note that confiscations were incurred by both iwi who had rebelled against the government as well as those who had fought as government allies. Although some of these confiscations were eventually returned to Māori, it was usually the poorest quality land and it was not always to the original owners (Ministry for Culture and Heritage, 2020a).

arable use was targeted by Crown and private acquisitions and inevitably alienated from iwi, to establish and facilitate European settlement. The results from table 5.2-2 suggest that confiscation suffering iwi experienced greater land loss over the period between 1864 and 1880 than those iwi that avoided confiscation, for a given level of Māori land ownership. This further supports the findings discussed in section 6.1 and is consistent with the historical narrative endured by affected iwi, since this is the time period in which the confiscations occurred, that being during the end of the 1860s. As discussed within the literature, many of those iwi who refused to sell their lands were targeted in the confiscations that followed the New Zealand Wars under the New Zealand Settlements Act 1863 (Kingi, 2008b).

These findings suggest that the relationship between arable land and Māori land loss was not unique to land taken via confiscation, but rather to the alienation of Māori land in general, implying that Māori land acquired through Crown and private acquisition during the colonisation of New Zealand was likely targeted towards acquiring these versatile areas of land first. This illustrates the central role that the establishment of the Native Land Court in 1865 had in contributing to the historical path dependency that led to the LUC class proportions within Māori land that are seen today.

### 6.3 Māori Land Ownership and Contemporary Cultural Wellbeing Outcomes

#### 6.3.1 Te Reo Māori Proficiency

The results discussed in section 5.3.1 for table 5.3-1 suggest that individuals that belonged to an iwi who held a larger proportion of the land within their rohe were more likely to report high levels of (self-rated) proficiency in te reo Māori in 2013. This indicates that historic trauma may be persisting over time, as iwi who experienced greater land alienations may have suffered a greater intergenerational loss in te reo Māori knowledge and proficiency. These findings are also consistent with those identified for the other cultural wellbeing measures, illustrating the relationship between whenua in Māori wellbeing and the important place whenua has in te ao Māori and hauora (McCreanor & Moewaka Barnes, 2019). The results also imply that the timing of land alienations is an important factor in the underlying relationship between land loss and level of proficiency in te reo Māori, as the results hold the strongest statistical significance for the two most recent periods that capture Māori landholdings; 1939 and 2017.

Whenua has a pivotal role in maintaining relationships within Māori communities, and the transmission of tikanga Māori and te reo Māori is supported by strong connections within whānau, hapū and iwi. Whakapapa kōrero (genealogy narratives) are the foundation from which mātauranga Māori (Māori

knowledge) is developed and from which narratives about the relationships that Māori communities have with their environment are shared (Wirihana & Smith, 2014). These narratives embraced te ao Māori perspectives and ways of teaching which are maintained between generations through te reo Māori (Wirihana, 2012). As discussed by Wakefield et al. (2006, p. 173), "when the balance between atua (god), whenua and tangata (person) is disrupted, desecrated, disturbed or violated, this can have a detrimental impact on these relationships". The loss of land interrupted this intergenerational transmission of mātauranga Māori and te reo Māori, which may have impacted the relationships within Māori communities; both interpersonal and environmental relationships. As a result, this intergenerational transmission of mātauranga Māori may have deteriorated over time, with less knowledge of tikanga Māori and te reo Māori being passed down from one generation to the next. Those iwi who endured significant land loss early in the colonisation period may have experienced this interruption to the intergenerational transmission of knowledge sooner, resulting in the deterioration of te reo Māori proficiency over a shorter time frame. Conversely, iwi who were able to avoid land alienations to a greater extent may not have experienced this deterioration to the same degree, resulting in contemporary Māori individuals belonging to that iwi having a greater understanding of tikanga Māori and te reo Māori.

### 6.3.2 Ease of Getting Support with Māori Cultural Practices

The results discussed in section 5.3.2 indicate that individuals that belonged to an iwi who held a larger proportion of the land within their rohe (for the periods 1880, 1890 and 1910) were less likely to respond that they found it "hard/very hard" to get help with Māori cultural practices in 2013. The results also indicate that individuals that belonged to an iwi who suffered some proportion of land alienations through confiscation were less likely to state that they "don't need help" with Māori cultural practices in 2013 compared to individuals that belonged to an iwi who did not experience confiscation. This is consistent with the notion that there exists a level of historic trauma stemming from Māori land loss which may be persisting over time, again illustrating the importance of whenua and the central role it has in facilitating the intergenerational transfer of wellbeing. Iwi that suffered a greater proportional loss of the land within their rohe and those who suffered confiscation not only experienced a greater loss of an economic resource but more importantly, it meant the loss of a significant cultural resource.

Iwi that experienced a greater proportional loss of land and those who experienced confiscation may have been more likely to move away from their rohe and into westernised urban areas; a decision which may have been motivated by an economic need as a consequence of land alienations. For those iwi who avoided urbanisation and remained living in their rohe, the historic trauma caused by land loss, in



particular, that taken through confiscation, may have been exacerbated by the fact that they remained living near where the historic trauma event of land loss occurred, thereby experiencing constant reminders of this trauma (Walters et al., 2011a). For individuals and whānau who were part of the urbanisation, the physical disconnection from their whenua, hapū and iwi and the spiritual disconnection from tikanga Māori and te ao Māori within their daily lives, over generations, may have resulted in the fragmentation and loss of knowledge of tikanga and the cultural practices that are an intrinsic part of te ao Māori, resulting in intergenerational cultural wellbeing loss among iwi today.

### 6.3.3 Importance of Involvement in Māori Culture

The results discussed in section 5.3.3 indicate that individuals that belonged to an iwi who suffered some proportion of land alienations through confiscation were more likely to find it important being involved in Māori culture in 2013 compared to individuals that belonged to an iwi who did not experience confiscation (for a given level of Māori land ownership as a percentage of iwi rohe). Furthermore, individuals that belonged to an iwi who suffered confiscation were more likely to state that they find it "very important" being involved in Māori culture in 2013.

These results suggest that individuals that belonged to an iwi who suffered some proportion of land alienations through confiscation were more likely to state that they placed "high importance" on being involved in Māori culture compared to individuals that belonged to an iwi who did not experience confiscation, while also being more likely to state that they needed help with Māori cultural practices.<sup>48</sup> When considering both results together and with a more holistic view, the potential reasoning for this begins to appear, in particular when considered as part of the historic trauma literature.

Under the New Zealand Settlements Act 1863, following the New Zealand Wars, many iwi suffered land alienation through confiscation. Given the explicitly aggressive way in which this confiscated land was acquired, these iwi experienced a "cataclysmic" historical traumatic event (Pihama et al., 2014). These confiscations dispossessed many tangata whenua from their land, without any compensation. For iwi, the loss of whenua and the loss of access to other taonga within that whenua would have been devastating, with this loss being akin to "assault on the body and the people" and being "stripped from one's family of origin" (Reid et al., 2017). In many instances, confiscation forced those disposed to relocate (Meredith,

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<sup>48</sup> To be precise, they were less likely to state that they "don't need help" with Māori cultural practices.

2015). For those dispossessed of their land, their eventual place of settlement may have been far away from their rohe and whenua. Many may have been forced to move to colonised urban areas, most of which would have been void of tikanga Māori and te ao Māori. The historic trauma may have been exacerbated if iwi remained living near where the historic trauma event of land loss occurred, thereby experiencing constant reminders of this trauma (Walters et al., 2011a). Unlike in the case of public and private land acquisitions, where Māori land was exchanged for money<sup>49</sup>, iwi who suffered confiscation did not receive any remuneration for their land, which would have added further difficulty to this process. The process of relocation may have also divided many Māori from their hapū and iwi, disconnecting them not only from mātauranga Māori which was passed down through these social networks, but also disconnecting them from the social support structures needed to help them deal with the trauma caused by these confiscations.

Over generations this disconnection may have created dissimilation among iwi and hapū, causing many to lose touch with kaumātua (elders) and their whakapapa, making it more difficult to get help with Māori cultural practices; a realisation of the intergenerational trauma caused by confiscations. Knowledge of whakapapa, tikanga Māori, and practices important to hauora are upheld through the transfer of collective knowledge. Thus, wellbeing is dependent on an individual's cultural knowledge, which, in turn, depends on the cultural knowledge passed down to them through their whānau, hapū and iwi (Wirihana & Smith, 2014). While these disconnected individuals may have felt that they had lost the ability to be a part of the social structures from which they could get help and support with these cultural practices, the importance of Māori culture, whether practised or not, remained strong for these individuals. This can be conceptualised as the historical trauma response to the (historical trauma) event of the Raupatu. The historical trauma response is the manifestation of emotions and actions stemming from the trauma event (Brave Heart, 2003). Previous literature on historical trauma discusses how this response can be exhibited as a means to subdue the intergenerational pain and unresolved grief caused by the trauma event (Brave Heart, 2003). For the case exhibited by iwi that suffered the Raupatu, this trauma response may have manifested into an emotional and spiritual need to feel more connected to te ao Māori, acting as a means of cultural healing to help in addressing historic trauma and grief (McCreanor & Moewaka Barnes, 2019).

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<sup>49</sup> Although, in many cases, the money given in exchange for these land acquisitions was almost trivial, even for the time period, particularly in the early cases involving the South Island.

Such a response may explain the results exhibited in the cultural wellbeing measure *importance of involvement in Māori culture* by those iwi who suffered confiscation.

Collective memories held by indigenous peoples that have suffered historic trauma events may serve an important role for those peoples in healing and recovering from the said events and may be central in the intergenerational transfer of this historic trauma response. These memories serve an important function that strengthen collective identity and provide narratives of resilience that can be passed down from one generation to the next (Walters et al., 2011a). Understanding how knowledge of historic trauma events is transferred through these collective memories is important in understanding the intergenerational transmission of not only knowledge and trauma, but also resilience. Thus, historic trauma events and historic trauma responses are by no means mutually exclusive. The threats to Māori identity and cultural wellbeing perpetuated by land alienation have also, in some ways, acted as a channel to support Māori identity and cultural wellbeing through these acts of resilience (Moeke-Pickering, 1996). Acknowledging and validating the existence of historic trauma is therefore important in the healing process (Wirihana & Smith, 2014).

These findings suggest that Māori culture serves an important function both as a source of resilience against historic trauma and as a channel to address historic grief. The results observed in section 5.3.3 for the confiscation suffering iwi may be an expression of resilience against the historic trauma caused by land loss. The role that collective memories and the intergenerational transfer of cultural knowledge have as a potential historical trauma response also illustrates the importance of education in this cultural knowledge and how it can support Māori healing from historical trauma (Denham, 2008).

Knowledge of this historical trauma response could offer greater insights into the way in which these historical trauma events and the internalised responses and reaction to these traumas manifest intergenerationally. While previous literature has focused on analysing the negative and self-destructive means in which individuals respond to and deal with historical trauma, this inference discusses how individuals may respond to a historical trauma event and historical grief through increasing cultural wealth and enlightenment.

#### 6.3.4 Visited Ancestral Marae in Past 12 Months

The results discussed in section 5.3.4 indicate that individuals that belonged to an iwi who experienced confiscation were more likely to state that they had visited their ancestral marae in the last 12 months compared to individuals that belonged to an iwi who did not experience confiscation. The trends seem to

be similar to those exhibited within the *importance of involvement in Māori culture variable*. In that instance, the importance of involvement in Māori culture was still strong among individuals that belonged to an iwi who suffered confiscation despite the greater difficulty they face in getting help and support with cultural practices. The results from this cultural wellbeing measure seem to strengthen that theory.

The action of visiting one's marae can be seen as a form of cultural healing, with one's ancestral marae being a means in which to facilitate social interaction and strengthen cultural and spiritual connections among whānau, hapū and iwi. Perhaps the ultimate way in which these aspects of tikanga Māori are facilitated is through tangihanga (traditional Māori funeral, rites for the dead), in which Māori express their remorse through outward emotional expressions of grief, such as through crying, weeping, spontaneous singing and chants, rather than through words of condolence (Durie & Hermansson, 1990). While tangihanga is a tremendously sad and painful event, it is also an incredibly spiritual and cultural experience in which many aspects of tikanga Māori are practised and of which many distant whānau attend and participate to show their respect and honour those who have passed, making it one of the most powerful forms of cultural expression through which tikanga Māori has been maintained over generations (Nikora et al., 2010). These customs and processes exemplify the importance of emotional expression and Māori culture in healing from historic trauma (Wirihana & Smith, 2014).

As discussed previously, a potential historical trauma response by iwi that suffered the Raupatu may have manifested into an emotional and spiritual need to feel more connected to te ao Māori, a means of cultural healing of the historic trauma and unresolved grief caused by the Raupatu. Given the greater likelihood that individuals that belonged to an iwi who suffered confiscation had in stating that they had visited their ancestral marae recently, this hypothesis has evidence to support it and it may be a further indication of the prevalence of a historical trauma response centred around seeking healing through spiritual and cultural pathways.

#### 6.4 Māori Land Ownership and Contemporary Socioeconomic Wellbeing Outcomes

The results discussed in section 5.4 indicate that individuals that belonged to an iwi who lost a larger proportion of the land within their rohe had greater cell phone and mobile access in 2013, compared to individuals that belonged to an iwi who retain larger areas of the land within their rohe. Urbanisation and the underpinning early European investment and development directed towards European settlements may be a mechanism that explains this relationship between access and land loss. This is suggestive of

path dependency in which contemporary access to internet and cellular infrastructure is predicated on early European investment in infrastructure.

The lands that were alienated from Māori during the early stages of the colonisation of New Zealand were the primary hubs around which early British immigrants settled, forming the basis of many of the largest towns and cities and creating the geographical landscape of New Zealand that exists today (Thorns & Schrader, 2010). These high-density, urban areas form a basis from which to prioritise infrastructure development, with this prioritisation possibly being a contributing factor for this discrepancy in the cellular access between iwi (Cook, 2010).

Iwi who experienced significant alienation of their lands may be more likely to reside closer to a city or town within their rohe, thus having cellular access more available to them. Conversely, iwi who suffered comparatively fewer alienations may be less likely to reside near urban areas, since the land within their rohe may have been looked upon as less desirable for early settlement and less valuable. Hence, they may be more likely to live in rural areas with poorer cellular access and be less likely to own a cellular device. However, this relationship may disappear over time as cellular infrastructure continues to grow and as mobile phone access becomes more commonplace among certain age demographics. If this relationship disappears over time as cellular infrastructure continues to grow, this could imply that there may have been a difference in the prioritisation of cellular infrastructure development following on from this historic path dependency between iwi, but not necessarily on long-term cellular infrastructure and access (Apatov et al., 2018).

## 6.5 Concluding Remarks

### 6.5.1 General Discussion

The loss of Māori land resulting from Crown purchases, private acquisitions and confiscations led to many whānau, hapū and iwi being displaced from their whenua prior to the end of the 19<sup>th</sup> century (Reid et al., 2014). This displacement led to the deterioration of many established social structures, resulting in social disarticulation (Cernea, 2004). The value of land for Māori is not only determined by its ability to produce but more importantly for the role it has in forming personal and tribal identity and as a means of cohesion with other whānau, hapū and iwi members (Durie, 2004). Consequently, this displacement disrupted the important role of whenua within these social structures, generating internal division within Māori communities (Reid et al., 2014).

The alienation of Māori land isolated some iwi from their ancestral origins and tribal organisations, affecting on Māori individual and collective identity, which stems from the land (Moeke-Pickering, 1996). This ultimately reduced the opportunities available to iwi to establish a foundation from which to develop economic, social and cultural wealth from within their rohe. Thus, the alienation of Māori land through purchase and confiscation by the Crown and European settlers failed to account for the loss of 'functionings', in particular the cultural 'functionings', that these alienations would have on affected iwi and the subsequent impacts that this would have on their wellbeing (Rao, 2018).

Considering this historical context alongside the findings of this thesis illustrates the importance of reconnecting people with their whenua and rohe, and the central role this has in improving the wellbeing outcomes of iwi. The process of individuals reconnecting with their rohe is a form of active healing, in which they are strengthening and expressing culture, rebuilding relationships and addressing trauma and grief. When whenua and hauora are considered holistically, where the strength of one is dependent on and interconnected with the strength of the other, a more profound understanding of the importance of promoting whenua is developed. Through this understanding, the concept of reconnecting people with their whenua can be seen as a practical means of uplifting the wellbeing of whānau, hapū and iwi, as well as whenua; a concept which is entrenched within mātauranga Māori (McCreanor & Moewaka Barnes, 2019). Incorporating such thinking into future policy development would enable interventions to be developed that benefit from insights that are relevant at a cultural and community level (Trickett et al., 2011).

Regeneration of the whenua of iwi is therefore vital to ensuring the intergenerational wellbeing of iwi and Māori is enhanced. Reconnection to Māori land, through succession of Māori land titles and the discovery of missing shareholders, could be a powerful way of reconnecting displaced and disconnected individuals with their tribal whenua, and thus with Māori culture. It, therefore, illustrates the importance of reconnecting contemporary Māori, who are missing shareholders in Māori Freehold Land blocks, with their land, as this would be beneficial to both individual and whānau wellbeing, as well as the wellbeing of the whenua.

This thesis contributes to the scholarship around historic trauma theory and Māori wellbeing, with the findings of this research further supporting Māori culture as a source of resilience against historic trauma. This research offers insights which may be useful in developing interventions to increase Māori wellbeing through cultural efficacy, where there is an emphasis on creating interventions that are embedded in the concept of tino rangatiratanga (self-governance and self-determination); something which is intrinsic to

upholding Māori wellbeing (Ann Roche et al., 2018). This thesis empirically supports the view that culture plays an important protective role, while also being an important way of retaining resilience within Māori communities against negative wellbeing outcomes stemming from historic trauma events, such as those experienced as a result of land loss.

Previous literature has emphasised the need for cultural efficacy in interventions aimed at benefiting Māori in order for them to be effective (Durie, 1985). These interventions can only be achieved when there is a strong partnership with Māori, where Māori lead the design and implementation of solutions. This illustrates the importance of tino rangatiratanga and the role it has in building resilience against historic trauma and the compounding effects of colonisation. This further supports the narrative proposed by post-development critics, who suggest that Western notions of development are not effective in addressing the needs of indigenous peoples.

This thesis has identified explanatory pathways through which Māori development goals can be progressed. The key to developing effective interventions moving forward will be to create flexible frameworks that are generalisable to all iwi, given their shared experience of historic land loss, but that are also able to be adapted to reflect the cultural and historical uniqueness of each iwi (Brave Heart et al., 2011). It is important in the development of policy interventions designed to address the impacts of historic trauma to not only understand and respect the collective philosophies shared by iwi but also to understand the differing degrees of historic trauma experienced between iwi. This thesis contributes to the latter by offering insights into the relationship between the historical trauma event of land alienations and the varying impacts that it had on iwi based on the type of land alienation that occurred, such as those iwi who experienced confiscation.

Māori have been intergenerationally disadvantaged as a result of development theory in New Zealand being defined from a Western hegemony, resulting in the many disparities that can be seen today. This has been the experience of many indigenous populations who have faced colonisation. What can be seen in the response of many central governments in these situations has been a greater willingness to address issues of indigenous poverty, rather than issues of indigenous self-determination (Cornell, 2006). Hence, upholding the guarantee of tino rangatiratanga within te Tiriti o Waitangi to fully embrace and support iwi, hapū and whānau in their aspirations of self-governance and self-determination is vital in forwarding Māori development.

### 6.5.2 Limitations and Future Research

One limitation of the geospatial dataset used within this thesis is that it was created using high-resolution images from the He Tohu exhibition, which were created by Click Suite studios. Thus, the accuracy of the geospatial dataset is limited by the source files and by the digitisation process of these map images. For the analysis this thesis is performing (at this 'macro' level), the level of accuracy attained is sufficient. Potential issues of inaccuracy are reduced by using proportions of Māori land within an iwi rohe, rather than using a unit of area of Māori land within an iwi rohe, as this mitigates scaling errors. Other limitations, as outlined in detail in the data section, include the inability to be able to control for all demographic covariates that may exist within an iwi due to data limitations and the accuracy of the historical iwi population statistics.

Another limitation acknowledged is that the cultural wellbeing data used within this thesis may not fully encapsulate all measures that are important to the development goals of Māori, or those of certain iwi. Future research may wish to consider the contributions of Whānau Ora as a source of individual and collective resilience against the impacts of historic trauma, such as that resulting from land alienations. Whānau Ora refers to the wellbeing of the extended family and is considered important to both the individual and collective resilience of Māori wellbeing (Boulton & Gifford, 2014). This could not be considered in this thesis because of data limitations. However, the cultural wellbeing measure *ease of getting support with Māori culture practices* may be considered a weak proxy for Whānau Ora, capturing a small aspect of what Whānau Ora represents. While there is no conclusive definition of Whānau Ora, there is some acknowledgement of participation in te ao Māori as being a contributor to family wellbeing (Boulton & Gifford, 2014).

The lack of significance in the majority of the regression results for the socioeconomic wellbeing measures suggests that historic land losses may not explain the discrepancy seen between some socioeconomic outcomes of different iwi. However, this is only in regard to these specific socioeconomic wellbeing measures. Thus, future research should look at the relationship that the loss of Māori landholdings has had on other measures of wellbeing, in particular, additional measures relating to Māori culture and spiritual wellbeing, such as those available in Te Kupenga. Further research is also needed to understand other factors that may buffer against the impacts stemming from historic trauma, such as Māori identity, and the role that culture has in the formation of these complex and multidimensional factors.



Another important factor to consider in future research that looks to build a greater understanding of the relationship between Māori land loss and contemporary wellbeing outcomes will be information and data on Tiriti settlements and those affected iwi. It may be that Tiriti settlements helped to address differences in certain socioeconomic wellbeing outcomes between iwi, which may explain part of the reason as to why certain wellbeing measures analysed within this thesis do not appear to have a significant relationship with historic land loss. Future work may wish to assess the relationship that exists between the historic land losses of Māori and socioeconomic wellbeing measures according to 1991 census figures by iwi (if such information exists), reproducing the regression model from section 4.3. This may help to develop an understanding of the potential impacts that te Tiriti o Waitangi settlements may have had on improving the socioeconomic wellbeing outcomes of iwi who received iwi settlements and whether this change differs for iwi who have not received a settlement.

## Chapter 7 - Conclusion

This thesis analyses the relationship between iwi-specific historic land losses, following the signing of te Tiriti o Waitangi, and the wellbeing outcomes of contemporary iwi. The research contributes to scholarship into the intergenerational impacts that land alienations have had on the cultural wellbeing of iwi. It finds that there is a negative relationship between land loss and certain contemporary cultural wellbeing measures, such as *te reo Māori proficiency* and *ease of getting support with Māori cultural practices*. This supports the narrative that the displacement of iwi from their land impacted intergenerational wellbeing and led to the loss of cultural efficacy and wellbeing for contemporary iwi members.

The research also considers how such impacts may be being remedied and illustrates the central role that mātauranga and tikanga Māori have in enhancing the wellbeing of Māori. Importantly, it demonstrates how this cultural knowledge operates as a source of resilience for Māori and has the potential to support healing from historic trauma, such as that experienced by iwi who suffered land alienations through confiscation; trauma which continues to affect the wellbeing outcomes of contemporary Māori. Thus, this thesis contributes to the understanding of the conceptual links that exist between the historic trauma event of Māori land alienations and contemporary cultural and socioeconomic wellbeing outcomes experienced among iwi.

The thesis also explores the role that Land Use Capability may have had in determining which areas of land were alienated from Māori earlier on and subsequently, which iwi were impacted more heavily as a result of this. It finds that iwi who had a large proportion of arable land were more likely to experience the greatest proportion of land loss overall. This reaffirms the historical narrative that Māori land that was suitable for arable use was targeted for acquisitions and confiscations, and alienated from iwi to establish and facilitate European settlement.

This thesis also contributes to the literature on evolutionary economics and historic path dependency of infrastructure investment and development, specifically in relation to cellular infrastructure. It finds that individuals that belonged to an iwi who lost a larger proportion of the land within their rohe had greater cell phone and mobile access in 2013, suggesting that contemporary access to internet and cellular infrastructure in Aotearoa New Zealand is predicated on early European investment in infrastructure.

Understanding the social, economic and political issues that exist within contemporary society cannot be achieved when these issues are interpreted without historical context. Incorporating historical narratives

into such thinking enables interventions to be developed that benefit from insights that are relevant at a cultural and community level. This historical context is essential in understanding why socioeconomic disparities within contemporary Aotearoa New Zealand exist and the central role that Māori culture has in addressing historical injustices and building resilience within affected communities. As such, the findings of this thesis may be useful in the development of policies that support the wellbeing outcomes of Māori through the cultural empowerment of whānau, hapū and iwi.

No measure can ever be thought to fully capture the immense traumas endured by iwi that came as a result of the loss of Māori land and the colonisation of Aotearoa New Zealand, which continues to this day. Not enough attention is given to the combined effects that the loss of land, culture, and traditional governance structures have contributed to the intergenerational suffering of iwi. However, if the tino rangatiratanga of Māori is fully embraced, then Aotearoa New Zealand will be closer to developing a system that not only removes current disparities but, more importantly, actively contributes to thriving iwi, hapū and whānau, uplifting the intergenerational wellbeing of Māori.

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## Appendices

Appendix table 1: Census questions and definitions relating to iwi affiliation

Year	Definition	Question	Max. Iwi Affiliations
1986		No question	None
1991	Those who usually live in NZ and/or were in paid work in NZ last week, and who admit to Maori ancestry. The connection a person of New Zealand Maori ancestry has with a tribe or tribes (Iwi). Included are the main (PRIMARY) iwi to which a person of New Zealand Maori ancestry belongs, as well as any other (SECONDARY) iwi with which such a person has strong ties (that is, tribes which are important to that person).	<b>9 a) What is the main iwi (tribe) you belong to?</b> (Please state one iwi only) _____ 27 Don't know 28 Don't belong to any iwi (tribe) <b>b) What other iwi (tribes) do you have strong ties with?</b> (Please state no more than two iwi) _____	3
1996	Those who live and/or work in NZ, and who admit to NZ Māori descent. The iwi today is the focal economic and political unit of the traditional Māori descendant kinship based hierarchy of: • waka (founding canoe) • iwi (tribe) • hapu (sub-tribe) • whanau (family).	<b>14. Do you know the name(s) of your iwi (tribe or tribes)?</b> • yes → Print the name and region of your iwi. Iwi (tribe) _____ Region _____ • no	5
2001	Those who live in New Zealand and admit to Māori descent. The concept of iwi has changed over time. Today it is the focal economic and political unit of the traditional Māori descent and kinship based hierarchy of: • Waka (founding canoe) • Iwi (tribe) • Hapū (sub-tribe) • Whānau (family).	<b>17. Do you know the name(s) of your iwi (tribe or tribes)?</b> • yes. Print the name and home area, rohe or region of your iwi below. (A list of iwi can be found in the Help Notes.) Iwi _____ Rohe (iwi area) _____ • no, go to 18.	5
2006	Those who live in New Zealand and admit to Māori descent. The concept of iwi has changed over time. Today it is the focal economic and political unit of the traditional Māori descent and kinship based hierarchy of: • Waka (founding canoe) • Iwi (tribe) • Hapū (sub-tribe) • Whānau (family).	<b>15. Do you know the name(s) of your iwi (tribe or tribes)?</b> • yes. Mark your answer and print the name and home area, rohe or region of your iwi below Iwi _____ Rohe (iwi area) _____ •no→mark your answer and go to 16	5
2013	(same definition as in 2001)	(same worded question as in 2006)	5

Source: Dixon et al. (2007), Definitions and Questionnaires, various years

Appendix table 2: Changes in the iwi identified population by number specified from 1996 to 2013

Number and proportion of iwi identified population by number specified, 1996-2013				
Number specified	1996	2001	2006	2013
One iwi	310,002	292,614	316,866	332,808
Two iwi	85,560	107,274	127,080	132,291
Three iwi or more	30,672	54,591	68,379	70,842
Total iwi stated <sup>1</sup>	426,234	454,479	512,325	535,941
Percentage of Total iwi stated	1996	2001	2006	2013
One iwi	72.7%	64.4%	61.8%	62.1%
Two iwi	20.1%	23.6%	24.8%	24.7%
Three iwi or more	7.2%	12.0%	13.3%	13.2%

Source: Reported from Table 2 of Kukutai and Rarere (2015)

<sup>1</sup>Excludes 'Not Elsewhere Included' & 'Don't Know'

**Appendix table 3: Land Use Capability (LUC) for Māori land compared with New Zealand LUC figures**

Land Use Capability (LUC) for Māori land compared with New Zealand LUC statistics (2010)				
LUC Class	% of Total NZ	Māori Land Area (ha)	% of Māori Land	Description of Land Use Capability
1	0.70%	7,514.76	0.50%	Most versatile multiple-use land – virtually no limitations to arable use
2	4.55%	43,733.59	2.89%	Good land with slight limitations to arable use
3	9.22%	85,534.33	5.65%	Moderate limitations to arable use restricting crops able to be grown
4	10.50%	153,972.29	10.16%	Severe limitations to arable use. More suitable to pastoral and forestry
5	0.80%	6,883.47	0.45%	Unsuitable for cropping – pastoral or forestry
6	28.10%	507,706.36	33.51%	Non-arable land. Moderate limitations and hazards when under a perennial vegetation cover
7	21.40%	469,830.47	31.01%	With few exceptions can only support extensive grazing or erosion control forestry
8	21.80%	230,142.75	15.19%	Very severe limitations or hazards for any agricultural use
Other	3%	9,752.96	0.64%	Non-arable land. Moderate limitations and hazards when under a perennial vegetation cover.
Total	100.00%	1,515,070.98	100.00%	

Source: Reported from Table 6 of Harmsworth & Tahi (2010, p. 21)

**Appendix table 4: Metadata for cultural wellbeing measures used**

Variable	Description	Range
Family connectedness	How easy or hard would it be to find someone to help you with Māori cultural practices?	11 very easy 12 easy 13 sometimes easy, sometimes hard 14 hard 15 very hard 77 not applicable (I don't need help) 88 DK (don't know) 99 RF (refused to answer)
Tikanga tūturu – tūrangawaewae (traditional culture)	Have you been to a marae in the last 12 months?	1 yes 2 no 88 DK 99 RF
Views and perceptions	Thinking about your life as a whole, how important is it for you to be involved in things to do with Māori culture?	11 very important 12 quite important 13 somewhat important 14 a little important 15 not at all important 88 DK 99 RF
Te reo	How well are you able to speak Māori in day-to-day conversation?	11 very well (I can talk about almost anything in Māori) 12 well (I can talk about many things in Māori) 13 fairly well (I can talk about some things in Māori) 14 not very well (I can only talk about simple/basic things in Māori) 15 no more than a few words or phrases 88 DK 99 RF

Source: Statistics New Zealand (2017), Te Kupenga 2013 data dictionary (2<sup>nd</sup> edition)