



Research



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'Okea ururoatia': the role of Indigenous activism in the restoration and protection of nature

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Indigenous peoples advocate for environmental and social justice in distinctive ways that may also benefit the conservation and restoration of biodiversity. We consider the ways that Māori self-determination movements have acted as a catalyst for increased environmental restoration across Aotearoa New Zealand (AoNZ). We examine contemporary understandings of cultural stewardship before examining protest movements, environmental legislation and funding for Māori-led environmental projects between 1974 and 2024. Our findings reveal that social and environmental justice are closely linked to ideas of place-based identity for Māori communities. Moreover, our research shows that support for Māori-led restoration was reflected in funding mechanisms across Aotearoa. Physical restoration of nature has oftentimes developed as a consequence of restoration of cultural knowledge, practice and rights of Māori communities to self-determination. This is clear through our analysis of both protest and environmental legislation alongside understandings of kaitiakitanga. Critically, supporting Indigenous communities to meet their responsibilities to culture, people and nature to mitigate the harms of colonization requires effort from state institutions and a shift in consciousness by wider society. The outcomes of these combined efforts for social and environmental justice can support the sustainability and conservation of nature and people.

This article is part of the theme issue 'The biosphere in the Anthropocene'.

1. Introduction

Year on year, increasing numbers of populations, species and ecosystems are threatened globally, despite the best efforts of conservationists, managers and others. Appetite for land development, urbanization and intensive land use has led to ecosystem degradation and fragmentation and real and severe consequences for human–nature relationships, as people interact less with the natural world [1]. Such appetites have wide-ranging impacts on human health and people's ability to maintain cultural knowledge and practices associated with nature [2–4]. Yet the question of how Indigenous peoples and local communities (IPLC) are impacted, or conversely how their leadership in biodiversity restoration can reduce these losses, is often overlooked [2].

Indigenous peoples' relationships with nature are an intricate web of cultural knowledge, worldview and practice [5,6]. In addition, because Indigenous communities inhabit 22% of Earth's land surface, corresponding

to >80% of Earth's biodiversity [7,8], Indigenous peoples have the opportunity to accelerate positive change. However, many Indigenous communities have also suffered land theft and dispossession, and the effects of ongoing colonization disempower Indigenous capacity to effectively address the biodiversity crisis. It is therefore useful to understand both traditional and contemporary environmental stewardship as well as the ways in which Indigenous peoples are reclaiming environmental leadership within Western jurisprudential systems. We focus on contemporary Māori environmental action in Aotearoa New Zealand (AoNZ), generally called 'kaitiakitanga', to consider the ways in which contemporary Indigenous caretaking of nature, from continuation of harvesting practices to political protest, can help to protect biodiversity.

Indigenous peoples' knowledge systems frequently embed relational views that place people as part of, not separate from, nature [9,10]. Many of these systems, including 'mātauranga' (knowledge) from Māori society in AoNZ, emphasize the interdependence of beings [11–13]. Mountains, rivers, forests and living beings are understood as relatives, integral to the development of cultural knowledge, ceremony and identity [14]. This relationship centres on respect and reciprocity to place and nature through cultural narratives and practice [7,14–16]. Together, these perspectives challenge capitalist and colonial human-centred perspectives that prioritize economic gain and human antecedence.

Place-based practices, such as medicinal harvesting, weaving and gardening among many other practices, sustain both relationships and language. These practices grow intimate observations of species and ecosystems, while feeding knowledge pools typically transmitted through generations [2,14,17–19]. These practices are essential for kaitiakitanga, a cultural system grounded in 'whakapapa', or kinship, which aims to balance the needs of human, non-human and material elements of the natural and spiritual worlds [20]. This 'environmental ethic' promotes the embodiment of 'tino rangatiratanga' (self-determination) by tribal groups [20,21]. Broadly, kaitiakitanga describes regenerative actions by Māori to foster nature and culture relationships in AoNZ while supporting sustainability efforts [2,20]. In contrast to stewardship, kaitiakitanga is embedded in Māori cultural concepts that guide actions to protect nature through responsibility and obligation to past, present and future generations [20–22].

Kyle Whyte and others have emphasized the interconnection of social and environmental justice [23–25], where, for example, removal of Indigenous rights to harvest, practise and even inhabit intergenerationally stewarded territories has resulted in grave social injustice [25]. Attacks on nature are therefore tantamount to attacks on Indigenous lifeways and survival [26]. Indigenous peoples have responded with active efforts to maintain and reclaim cultural knowledge and practice in the pursuit of self-determination [27], for example through land protection movements [26]. Protest marches and land occupations can therefore be understood as contemporary forms of cultural place-based practice (and, indeed, stewardship) that are a response to cultural and environmental injustice. Nonetheless, reinvigorating community law often does not impact law in modern societies, if jurisprudence is created by a colonial nation-state and built from the assumption that law and nature should be separated [21,26,27].

In AoNZ, protests against state actions have been documented since the nineteenth century, following the signing of Te Tiriti o Waitangi (the Treaty of Waitangi) in 1840 by Māori chiefs and representatives of the British Crown [28,29]. Tensions quickly developed when promises of continued governance over land and waters and the guarantee of self-determination by Māori were not upheld by the British Crown [29]. Legislation increasingly sought the assimilation of Māori people, first by claiming and confiscating Māori lands and natural resources and then through dismantling the culture, language and familial structures of Māori communities [29,30]. By 1960, >95% of land in AoNZ was no longer in Māori ownership [29], and loss of connection to traditional territories was further exacerbated by Māori migration to cities. Cities, often shaped and governed by Western ideologies, have expanded over Indigenous territories, frequently without acknowledgement of Indigenous rights [2,31,32]. These urban sites accelerate biodiversity loss yet also acted as home to >50% of humanity [33] and >80% of Māori at the start of the twentieth century [34]. Similarly, waterways, wetlands and forests are now under threat and decreasing in size and native species richness, at the same time as pollution and environmental degradation increase [35,36]. In Kirikiriroa/Hamilton, one of AoNZ's major cities, native biodiversity cover is low, at <10% cover, leading to loss of cultural connection for Māori tribal groups in the Waikato area [37,38]. This trend is similar in other AoNZ urban centres [38]. These statistics have led to calls for diverse approaches to ecological restoration, especially from Māori, whose cultural frameworks support both the protection of, and enhanced connection to, nature [2,39].

We begin by examining perspectives of kaitiakitanga held by contemporary urban Māori living in Kirikiriroa/Hamilton. We then consider how the principles and practice of kaitiakitanga are reflected in both political actions and ecological restoration efforts that attend to environmental and social justice. To do this, we explore data both on Māori-led environmental and land protests from the last 50 years (1975–2024), and on funding for environmental regeneration efforts in AoNZ. In doing so, we consider how issues of Indigenous connection to place-based nature intertwine with environmental and social justice activism.

2. Methods

We used a mixed methods approach to explore both qualitative and quantitative data. Mixed methods approaches are well described in social science research [40,41], using in-depth exploration of qualitative data alongside quantitative analysis. Qualitative analyses focus on identification of significant patterns useful for environmental and social justice [42], and transferable learning opportunities from a dataset [40,41]. Importantly, a mixed methods approach allows studies such as ours to present the lived experiences of participants, while connecting their insights to historic and present-day actions for nature and Māori rights. Critically, mixed methods, undertaken within a 'Kaupapa Māori' principles research framework, support prioritization of data selection and presentation through a Māori lens [43]. Therefore, our search for data embodies this aim, which is reflected in our search terms, website searches and filtering of data. Our approach contributes to the growing critique of kaitiakitanga and its value in environmental and social justice literature today.

(a) Contemporary urban Māori views on kaitiakitanga

We begin with interview data collected as part of the first author's PhD research on kaitiakitanga and urban spaces [44]. From January to December 2019, Walker completed in-depth semi-structured interviews with 20 Māori individuals living in Kirikiriroa/Hamilton about their understanding and practices of kaitiakitanga in urban areas. Snowball sampling, a type of convenience sampling, was used to select participants [40,45]. Interviews followed principles of kaupapa Māori research by reshaping the interview space as a site for knowledge sharing and centring and respecting the knowledge shared by participants [42]. For example, the relational networking of 'whakawhanaungatanga' begins before the interviews, to create connection between interviewer and participant, and open-ended questions allow for shared conversation and learning through 'whakawhiti kōrero' (discussion, exchange of ideas) [42,46,47]. Interview questions and responses explored here are included in (electronic supplementary material tables S1 and S2). After transcribing the interviews, Walker identified major themes in participant responses before refining these themes further to reveal supporting themes [48] (electronic supplementary material table S2). Research ethics was approved by the University of Waikato, Faculty of Māori and Indigenous Studies Ethics Committee, Te Manu Taiko, on 24 July 2018.

(b) Social and environmental justice data: protests, legislation and funding

We constructed a timeline to visualize changing patterns of Māori environmental protest between 1975 and 2024. We focused on this period because although protest occurred after the events of Te Tiriti o Waitangi in 1840, protest activism was minimal during the early 1900s as Māori focused on securing their physical and cultural survival [28]. We have included protest movements connected to both environmental *and* social issues from the 1960s that have been widely covered in the academic and grey literature. We conducted three primary searches. First, we searched online for references to protest movements between 1975 and 2024 in AoNZ led by Māori communities, and recorded the leadership and purpose of these protests (electronic supplementary material table S3). We used search terms such as 'Māori protest', 'protest in New Zealand', 'occupation' and 'protest movements' in search engines such as Google. We then scanned contemporary news articles to gather information about each protest event found [28]. As well, we noted instances where Māori reoccupied land and sites of significance, protests related to mining, protests centred on Māori rights and care of nature, and protest that challenged resources' extraction offshore.

Second, we used environmental legislation administered by the New Zealand Ministry for the Environment (MfE) as the base for a further search. We interrogated the New Zealand Legislation website (<https://www.legislation.govt.nz/>), searching all MfE-administered legislation using terms such as 'kaitiakitanga' (stewardship practice), 'kaitiaki' (guardians), and 'Māori' (all search terms for this study are listed in electronic supplementary material table S4). We then extended this search for environmental legislation on the New Zealand legislation website to locate Acts related to land, water and natural resources from the early 1930s to 2024. We limited the results to legislation that directly related to land, water, natural resources and resource protection and focused on national-level legislation. The search results are summarized in electronic supplementary material table S5.

Of the 37 Acts related to environmental protection in AoNZ between 1949 and 2024 that we sourced, we excluded Acts related to Treaty of Waitangi grievance settlements and laws that enact legal personhood for nature, as these were already heavily influenced by a Māori worldview. We also excluded legislation related to local council environmental protection measures, such as the Local Government Act, National Policy statements, regulations and bills, secondary legislation and legislation replaced by a new Act (e.g. the Resource Management Act replaced the Town and Planning Act), to remain within the scope of our search. Extending beyond these criteria would have expanded the data beyond the time and resources available for this study.

Third, we searched for information about Māori conservation efforts, funding and groups between 1975 and 2024. We initially used Google to gauge information about conservation and restoration funding in AoNZ, applying search terms such as 'Māori restoration projects' and 'restoration funding' (see electronic supplementary material table S4). Using these terms, we found a range of funding mechanisms including the Jobs for Nature (JfN) fund and the Te Wai Māori fund. We chose to focus on funding allocated through the JfN because the fund invests in conservation actions on a national scale. JfN was initiated in 2020 as part of the AoNZ government's COVID recovery package to support job creation and enable communities to restore and care for nature [49]; JfN is administered through five government organizations [50]. As well, the publicly available data were both accessible and relevant to our study aim, as they provided a wide scope of restoration and conservation action in AoNZ.

Within JfN, we identified iwi-led and iwi-partnered projects for nature, using search terms such as 'iwi' (tribal group), 'Ngāti' (a prefix for many tribal groups), 'Māori', 'hapū' (sub-tribe), 'marae' (sub-tribal gathering spaces), and 'whenua' (land) (electronic supplementary material table S4). We checked the lists for dialectal differences (e.g. double vowels) and also filtered the data by region. We then examined each project's overview to understand if the project was Māori-led, supported Māori communities, or partnered with Māori.

Finally, we retrieved statistical data about the Māori population from the 2023 New Zealand census (<https://www.stats.govt.nz/2023-census/>).

3. Results

(a) Contemporary urban Māori views on kaitiakitanga

Of the 20 participants interviewed about kaitiakitanga, half described themselves as female and half as male, with most between 20 and 50 years of age (figure 1). All participants identified as Māori and were living in the city. Seven noted connections to tribes within and close to the Kirikiriroa/Hamilton city boundary; 13 identified as 'mātāwaka' (Māori from other regions of Aotearoa). Themes extracted from the interview data show that participants shared similar perspectives of kaitiakitanga, regardless of tribal affiliation, gender and age (electronic supplementary material, table S2). We identified three overarching themes from the interviews that we expand upon below. Interview participants highlighted diverse facets of kaitiakitanga that maintain and enable the revitalization of human connection to biodiversity which we clustered as sub-themes (electronic supplementary material table S2).

(i) Kaitiakitanga knowledge and practice

Participants emphasized environmental activities alongside the need to protect resources for their tribal groups (electronic supplementary material, table S2). They acknowledged the pressures on natural resources and drew on tribal knowledge and wider cultural practices to highlight the importance of sustainable use.

Participants referred to the Māori concept of whakapapa (layers of genealogy or kin-based relationships) as a core component of kaitiakitanga that shapes place-based caretaking practices and supports the protection of nature and endemic local species (electronic supplementary material, table S2). Participants also highlighted metaphysical aspects of their kaitiakitanga practices, referring to 'mauri' (life force existing in all beings), 'mana' (to hold authority and control) and 'tapu' (sacredness). Many participants understood kaitiakitanga practices as supporting responsibility to place and the local environment, embedded in their belief system linking nature and people. They described reciprocal relationships to nature, sustained through local narratives, cultural practices and more general Māori knowledge. Nature's value and motivations for its protection were actively embedded into everyday practices for more than half the participants.

Knowledge of biodiversity and kaitiakitanga held by participants was frequently transmitted by older generations, and most participants directly engaged with the concept of inter-generational responsibility. In their responses, participants mentioned elderly family members, mothers, fathers and wider community members as important teachers. Knowledge related to care for nature was also shared across tribal groups, with participants noting multiple teachers.

(b) Kaitiakitanga experiences during childhood

In response to questions about childhood experiences of kaitiakitanga, participants noted the way that inter-generational experiences informed their connections to nature, from harvesting practices, through to the sharing of resources and the need to care for community, families and wider tribal kin groups. Participants described kaitiakitanga as 'instinctive', and, therefore, there was no specific prompt to practise kaitiakitanga. Rather, because participants relied on natural resources for their sustenance when young, cultural knowledge intertwined with practice focused on the concept of careful and measured use in kaitiakitanga teachings during participants' childhood. The value of nature and cultural knowledge for participant sustenance was closely entwined. Participant comments reinforced the importance of place for embedding cultural knowledge and practices associated with nature.

Participants who were both near and far from their own tribal areas noted the importance of being close to natural areas (electronic supplementary material, table S2). They also noted marine areas, forests and cultural sites such as marae as vital for developing an ethos of care for nature, as well as the shaping of practices specific to these sites. Participants who grew up away from their tribal territories also expressed the need for reconnection to tribal places in their adult lives (electronic supplementary material, table S2).

(i) Challenges for kaitiakitanga

Participants highlighted a range of challenges in the expression of kaitiakitanga in tribal areas other than one's own. Most noted that access to biodiverse areas of nature remained paramount for maintaining kinship relationships with nature and knowledge of biodiversity. However, participants also highlighted that they were reluctant to override 'local' kaitiakitanga in tribal areas where they did not share genealogical links (electronic supplementary material, table S2). Distance and access to culturally supportive spaces were also highlighted as challenges, impacting opportunities for participants to maintain connection to culture and nature. Participants noted not only the competing demands of modern daily living but also the limited validation that such cultural practices and knowledge receive from non-Māori communities (electronic supplementary material, table S2). In some cases, this halted the expression of kaitiakitanga and the maintenance of nature relationships while living outside their tribal territories.

Although interview participants indicated the presence of social, cultural and environmental mechanisms that strengthen Māori people's connection to nature, people and culture, captured in the concept of kaitiakitanga (electronic supplementary material, table S2), they also noted the tensions that arose with diverse interpretations of kaitiakitanga by a range of actors, resulting in conceptual dissonance. One participant noted that notions of kaitiakitanga have been applied to economic well-being, which may oppose environmental sustainability (electronic supplementary material, table S2). Another participant noted

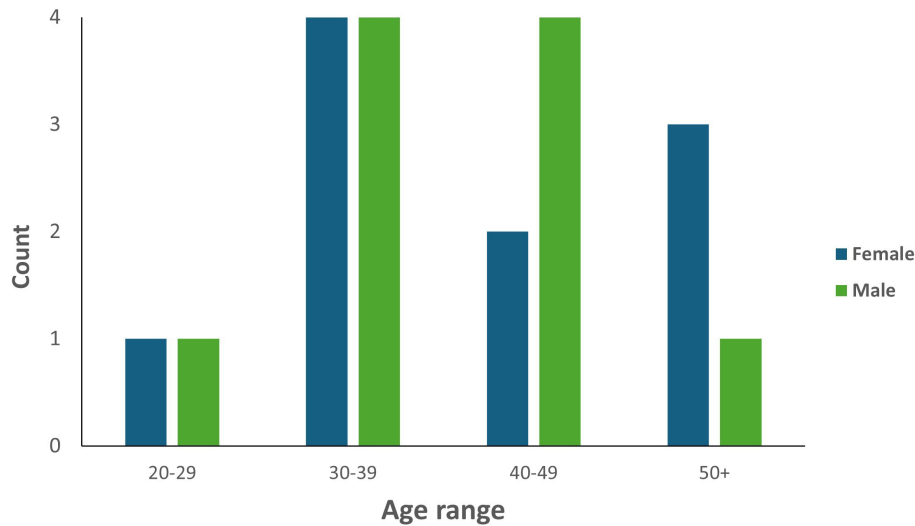


Figure 1. The age of the participants varied, with most over the age of 30. A high portion of the participants were aged between 30 and 39, while others were scattered above 40 years of age.

that without the support of local councils and government, it is difficult for knowledge associated with kaitiakitanga to be sustained in complex environments like cities (electronic supplementary material, table S2).

(c) Social and environmental justice data: protests, legislation and funding

(i) Protection through protest

Analysis of protest movements between 1975 and 2024 showed that key issues related to environmental, cultural and social issues for Māori were intertwined. The restoration of Māori rights, including land rights, was persistent, with concerns for environmental protection for future generations (see electronic supplementary material, table S3 for details of protests and key issues). Protests represented a range of concerns, from land occupation in rural north communities to land reclamation in Whaingaroa/Raglan, to protection of ancestral burial sites at Rotokākahi and seabed mining along the Taranaki coast (electronic supplementary material, table S3). Although some protest actions were local and tribally led, some were pan-tribal movements for cultural and environmental justice. National protest marches ranged from the 1975 Land March led by 79-year-old Māori elder Whina Cooper and the group Te Rōpū Matakite, where protesters walked 1000 km to Parliament to protest the continuing loss of Māori land, through to the 2024 Treaty Principles Bill protests, where hundreds of thousands of people nationally marched against the erosion of Indigenous rights, including control over land [51,52]. The Bill submission process also attracted a record >307 000 written submissions, 92% of which opposed the proposed legislation [53].

(ii) Relationships between protest and legislation

Māori-led protest marches and occupations related to environmental issues and land rights increased between 1975 and 2024 in AoNZ (figure 2). Similarly, a rising trend in reference to Māori in environmental legislation occurred. There appears to be a broad relationship between protest movements and changes to environmental law in AoNZ, although time lags between the enactment of legislation and the protest movements occur.

(iii) Conservation funding

In attempts to support nature revitalization efforts in AoNZ, successive governments have funded works by local hapū and iwi, specifically through the JfN Fund. The JfN funding data show a range of Māori-led and Māori-partnered activities that have supported Māori communities to enact kaitiakitanga, including in forest conservation, marine protection, biodiversity restoration, pest management and water care. Both the number of Māori-led restoration projects and the amount of allocated funding are greater in regions with large Māori populations (figure 3). The allocation of funding thus indicates strong place-based connections between conservation and restoration activities and Māori communities. Two of these high-allocation regions, notably Northland and the East Cape area of the North Island (inset, figure 3), are rural, with many Māori living within their traditional tribal boundaries in these regions. These regions have also been heavily impacted by extreme weather events such as Cyclone Gabrielle in early 2023 [54], which may also explain the allocation of funding.

Areas with no or minimal funding allocated are also of interest. For example, the Tūhoe–Te Urewera region of the North Island appears to have received minimal funding for restoration and conservation activities, despite the existence of the co-governed Te Urewera, which has many local Māori communities on the edges of Te Urewera. The South Island has fewer Māori-led restoration sites with JfN funding allocated, but also lower percentages of the population identifying as Māori.

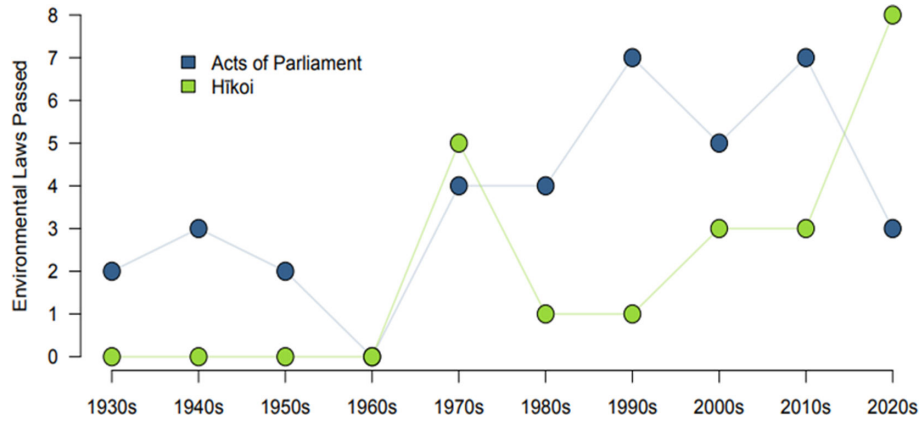


Figure 2. Māori protest movements and legislation that refers to or has provisions for Māori through time. Protest movements tend to spike prior to an increase in references to Māori in environmental legislation.

4. Discussion

The research shows that connection and care for nature are central to kaitiakitanga, similar to other work on Indigenous care of country [2,15,20,55]. IPLC globally have nurtured nature in ways that benefit biodiversity through conservation approaches shaped from IPLC knowledge [56]. The research supports the notion that sustaining Indigenous culture also contributes to a culture of biodiversity protection, even among those far from their tribal areas. Strong cultural values of care and connection are central to Māori who seek better outcomes for nature in Aotearoa. Although the well-being of nature has deteriorated over time in Aotearoa [57], nature remains an important driver for Māori action, for example in the normalization of cultural well-being indices [58] and importantly, in the pursuit of tino rangatiratanga. Kaitiakitanga can therefore connect generations through a collective approach for nature's sustainable protection.

Both the interview and JfN data indicate that physical restoration of nature is important to contemporary kaitiakitanga. We show that this holds both for those who remain deeply connected to place [19] and for those who are removed from or dispossessed of their place-based homes. Urban Māori expressed kaitiakitanga in diverse ways supporting the concept of mātauranga Māori as an evolving and adaptable knowledge system with core values [43]. Although the practices of kaitiakitanga varied, the fundamental principles as guided through 'tikanga Māori' (Māori protocol) were clearly articulated. Because >80% of Māori now live in urban areas [34], local council and other recognition of kaitiakitanga obligations could accelerate urban nature protection, especially in cities with at-risk or decreasing biodiversity. Enabling the sharing of kaitiakitanga principles may help in shifting urban consciousness about nature's value in cities and align with kaitiakitanga obligation of local iwi, hapū and their associated groups. Our findings suggest that kaitiakitanga provides a bridge for Māori to care for nature in many ways, but that its expression is represented today through multi-layered applications in adaptive localized practices, law, protest movements and ecological restoration. We propose that kaitiakitanga principles offer valuable insight into the care of nature by reinforcing the need for place-based and nature-based connections. Importantly, kaitiakitanga can serve to uncover challenges for Māori that may be overlooked in nature's protection.

The interview data reveal that participants are deeply concerned with the protection of nature and the implications of biodiversity loss for the sustainability of culture. That is, kaitiakitanga encourages nature's engagement through a cultural lens, informed by genealogical recognition of nature's sacredness and kinship with nature, even in other tribal areas. These motivations were expressed through everyday practices, leading with future generations in mind. Participants touched on the major underpinnings of kaitiakitanga, with concepts of mauri, whakapapa and mana emerging in their discussion. Social and cultural mechanisms, therefore, shape kaitiakitanga practices that support biodiversity and permeate how participants understand caring for nature in these contemporary times. These approaches are similarly seen in efforts by IPLC in Canada to respond to changing environmental conditions [59].

The interview data show that early nature and cultural engagement enabled lifelong relationships between participants' communities and the natural world. Through everyday practice, responsibilities to nature and people were sustained and recognized in adulthood. This study suggests that early experience of kaitiakitanga encourages Māori to remain committed to the care of nature. This insight aligns with other findings globally that indicate early exposure to nature encourages lifelong nature connection and development of pro-environmental behaviours [60].

Interview participants raised a range of challenges that correspond to concerns raised by other Indigenous communities, particularly around deteriorating ecosystems, limitations to nature access, and growing tension in how cultural knowledge is validated [24,61]. These challenges, along with disconnection from tribal territories, have impacted the expression of nature relationships by Indigenous peoples. However, interview data suggest that these relationships are not severed but have found new form. The protest movement data are also suggestive of new expressions for kaitiakitanga, with intertwined environmental and social justice concerns at the fore of these movements.

The urban kaitiakitanga, protest and the JfN data highlight a sustained thread of awareness about nature's critical role in both cities and rural areas. Nonetheless, conceptual dissonance can disrupt responsibility to nature, especially where kaitiakitanga is misused for the benefit of resource control [20]. Justice for nature and people, through physical practices such as

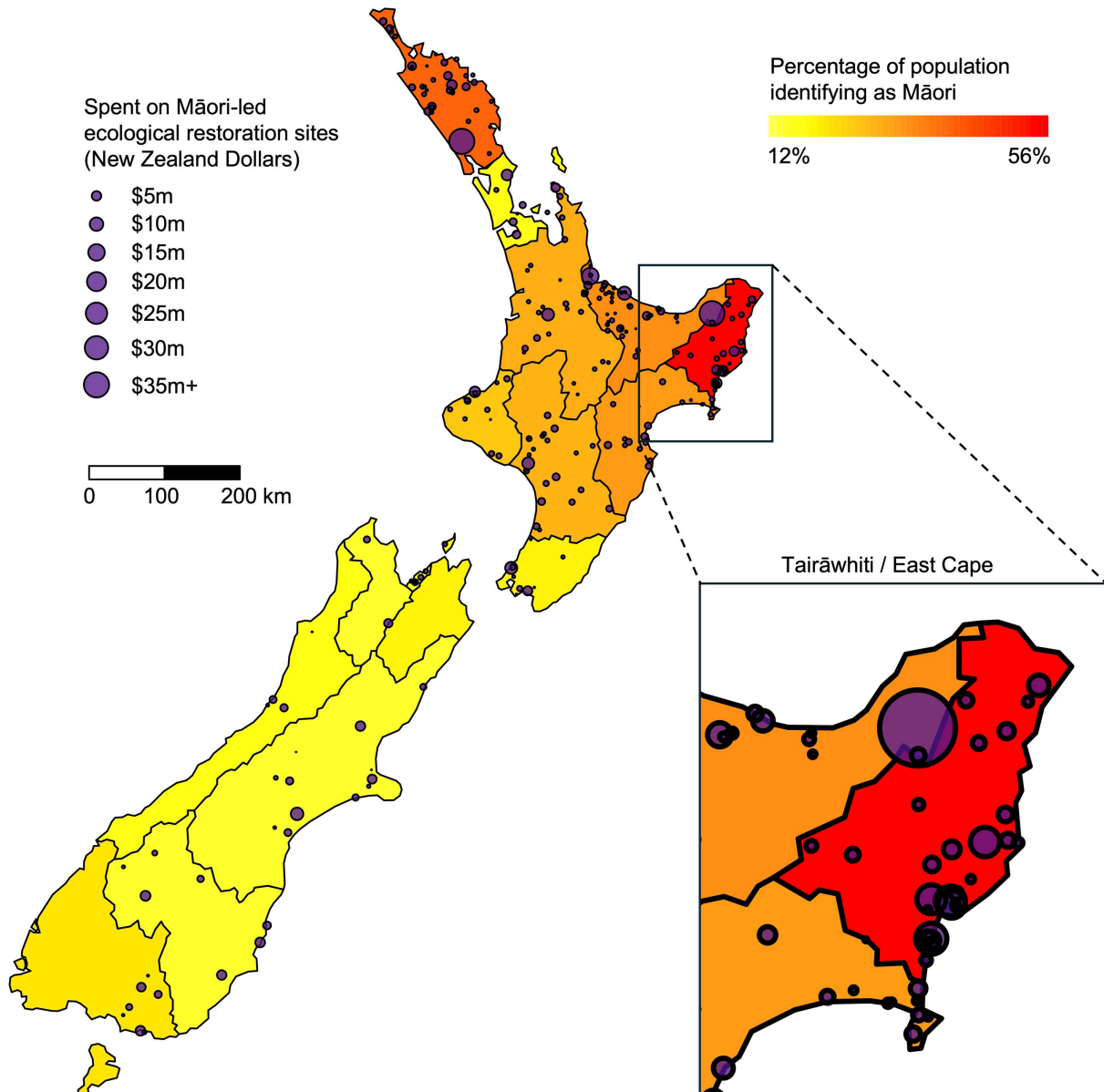


Figure 3. Māori populations and corresponding data pertaining to funded Māori-led restoration work in Aotearoa New Zealand. The North and East Cape of the North Island show higher populations of Māori and greater money spent on Māori-led restoration sites.

hiko (marching for land and land rights), embodies the ethos of kaitiakitanga by using a contemporary form of practice that resonates across a range of Māori communities.

The increasing activism we observed in the period 1975–2024 was accompanied by a corresponding surge of recognition for Māori in environmental legislation. This trend does not appear to be new in Aotearoa; social and environmental rights have been closely linked in prior decades. In the 1960s, social protest movements in the United States inspired a rise in Māori protest across Aotearoa to address Māori inequalities [28,51]. Social protests associated with cultural revitalization efforts, including the Māori language petition in 1972, resulted in the legal protection of the Māori language [62–64]. We therefore speculate that increased protest may result in better recognition and integration of Māori needs in environmental legislation. The trends seen here might potentially indicate reliance on social action for change, supporting activism as an effective catalyst for societal recognition of social, cultural and environmental concerns. In other work, protest action has been noted as accelerating social change while also advancing decolonial processes in Western society [65]. Further qualitative work could be valuable to better understand relationships between protests and environmental rights and responsibilities of Indigenous communities.

Collective conscientization through protest has the potential to move both IPLC and other communities towards supporting better relationships between nature and people [66]. For some Indigenous peoples globally, however, activism is often met by the aggression of the state, harming such communities and silencing their rights to protect their own livelihoods against the backdrop of resource depletion, increasing development and growing environmental degradation [67]. As Indigenous communities worldwide contend with the destruction of their ancestral sites and natural resources, protests like those in Hawai'i pertaining to Mauna Kea [68] raise global awareness of the challenges faced by Indigenous communities to protect nature. The opportunity for Indigenous communities to enact their cultural and genealogical responsibilities to place may cause discomfort for those who reap the benefits of Indigenous peoples' displacement. However, activism becomes a way for Indigenous communities to enact steward roles, especially in places where lands and natural resources have been removed from the care of Indigenous communities.

The reform of Western jurisprudence to reflect Māori worldviews has been used by Māori communities to seek social change for Māori and nature [69] and secure Māori rights to natural resources management [30]. We argue that decades of activism, settlement processes and legal tools upholding tikanga Māori (including new approaches such as legal personhood of the Whanganui River, Te Urewera and, most recently, maunga (mountain) Taranaki) have likely contributed to developing awareness of Māori kinship to nature and further facilitated Indigenous approaches for nature's protection [30,69,70]. However, Western jurisprudence has not been definitive for Indigenous environmental leadership and the protection of Indigenous rights to nature, as in many instances Acts of Parliament have also attempted to remove Māori rights [71]. While some legal instruments have helped to acknowledge Māori rights and knowledge, a cautious approach is needed.

The JfN data demonstrate that restoring natural areas is a critical activity that many Māori communities, including those in cities, use to meet the responsibilities of kaitiakitanga and enact physical practices. A high proportion of Māori-led projects were funded by JfN, with >50% of JfN funding allocated to Māori-led and Māori-supported projects. The funding allocation in low socio-economic, rural regions like Northland and the East Cape acknowledges Māori leadership in climate, social and environmental issues, including those caused by extreme weather events and during COVID-19. Critically, these environmental crises force communities to re-evaluate practices and adapt accordingly [5]. The administration of funding through the JfN fund, therefore, has contributed to biodiversity restoration and simultaneously enabled kaitiakitanga through the expression of cultural and environmental responsibility to people and place. Place-based restoration is critical for the continuation of knowledge and especially where harm has been done to nature [5]. Supporting IPLC to re-establish important connections to nature through restoration and conservation, benefiting environmentally degraded areas, also connects social and environmental justice goals. The success of this funding highlights the positive role that states can play in supporting contemporary caretaking by Indigenous communities. However, we also note that these initiatives can be temporary, and such policies and priorities change with successive governments. While we have attempted to highlight this support through funding for Māori projects, tracking funding over time is difficult as a range of funding mechanisms exist (e.g. private sector and local government funding). Although our focus on JfN has shown some promise, further exploration of the range of funding mechanisms would be useful. As well, the breadth of legal instruments (including bills and regulations) and their role in supporting kaitiakitanga aspirations should also be scoped in future studies.

This research shows that acceptance of Indigenous people's rights to their traditional territories can have the support of the state, whether through enshrining Indigenous perspectives in law or through financial backing, with positive environmental outcomes. In this study, interviews with urban Māori, protest data and financial records from JfN all suggest that the inseparable link between nature and Indigenous peoples that draws from both physical and metaphysical concepts including whakapapa and mauri appears to motivate kaitiakitanga action and practice, irrespective of state support. With ongoing financial support and legal change, we might therefore expect increased restoration work and decisions that favour sustainability to occur in places with a high Māori population. Given the increase in Māori-led protest activity in 2024, we might also predict increased pressure to protect both nature and Māori rights in law.

5. Conclusion

Ongoing colonization continues across the world through land dispossession, forced assimilation into a dominant culture, environmental degradation and the loss of integral knowledge and practice. However, Māori, in common with other IPLC, remain committed to the practice of kaitiakitanga through both traditional and contemporary methods. Responsibility to people, place and nature will continue to inspire Indigenous peoples to meet the needs of their communities and advocate for the well-being of people and nature.

Ethics. Ethical approval for the interviews was approved by the University of Waikato, Faculty of Māori and Indigenous Studies Ethics Committee, Te Manu Taiko, on 24 July 2018.

Data accessibility. Interview data for this project will be archived on the University of Waikato cloud. As the data pertain to an Indigenous group, we follow the Māori Data Sovereignty and CARE principles for data storage and use. Therefore, access to the dataset for the interviews must be requested from the lead author. Information pertaining to the content of the dataset can be viewed through [72]. Access to the full Jobs for Nature fund data, legislation data as well as the protest data can be accessed at [73].

Supplementary material is available online at [74,75].

Declaration of AI use. We have not used AI-assisted technologies in creating this article.

Authors' contributions. E.W.: conceptualization, data curation, formal analysis, investigation, methodology, project administration, writing—original draft, writing—review and editing; M.C.: conceptualization, data curation, visualization, writing—review and editing; H.W.: formal analysis, writing—review and editing; P.W.: conceptualization, formal analysis, methodology, writing—original draft, writing—review and editing.

All authors gave final approval for publication and agreed to be held accountable for the work performed herein.

Conflict of interest declaration. We declare we have no competing interests.

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