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Restoring Sociocultural Relationships with Rivers: Experiments in Fluvial Pluralism

Dan Hikuroa¹, Gary Brierley², Marc Tadaki³, Brendon Blue²,
and Anne Salmond¹

¹Te Wānanga o Waipapa, University of Auckland, Auckland, New Zealand

²School of Environment, University of Auckland, Auckland, New Zealand

³Cawthron Institute, Nelson, New Zealand

3.1 Introduction

Selecting which rivers to restore, how and why involves complex and deeply value-laden decisions. Often understood as the responsibility of scientific and technical expertise, choices regarding which forms, processes, and ecologies merit restoration, and to what condition, are the subjective products of cultural values and assumptions (Bliss and Fischer 2011; Dufour et al. 2017; Egan et al. 2011; Gobster and Hull 2000; Sneddon et al. 2017). Aspirations for rivers and freshwater are not preexisting problems waiting for a solution but contested ideals in need of negotiation (Lave 2012). Confronting this fact requires river restorationists to ask two interrelated questions:

- 1) To what ideal standards should rivers be restored?
- 2) Who should make these decisions?

While scientists and science have an important role to play in responding to both of these questions, their roles need to be understood alongside other ways of knowing and valuing river systems.

Restoration ecology has at times been criticized for attempting to create an imaginary nature (Hilderbrand et al. 2005). For example, many river restoration practices seek to construct notions of fluvial forms that mimic predetermined visions of how rivers should look (Dufour and Piégay 2009; Palmer et al. 2010). Many rivers, in a wide range of geopolitical and geomorphologic settings, have been designed to reflect European pastoral ideals of stable, single-thread meandering channels, even though such rivers are not necessarily representative of that particular region (Kondolf 2006). Researchers have pointed to the need for interventions that reflect site-specific attributes, framed in terms of objectives that are realistically achievable given the spatial context and historical evolution of a river (Brierley et al. 2013; Simon et al. 2007). In turn, however, these scientific

considerations themselves entail presuppositions regarding what rivers could and should be (Ashmore 2015; Blue and Brierley 2016; Koppes and King 2020; Lave 2016).

Arguments for participatory approaches to restoration have arisen alongside and in response to these concerns for physical and ecological appropriateness (Eden and Tunstall 2006; Eden et al. 2000; Egan et al. 2011; Hillman 2006). The case for community engagement in river restoration has been made on the basis of a range of potential benefits for both people (e.g. fostering connections between people and the landscape, creating employment opportunities, facilitating knowledge transfer and environmental justice), and for the projects they work on (e.g. cost savings through volunteer labor, improving community buy-in, and facilitating ongoing monitoring) (Fore et al. 2001; Overdevest et al. 2004). Yet, while participatory and inclusive approaches to river restoration are increasingly acknowledged as best practice (Smith et al. 2014), in reality, community participation is often rendered instrumental and tokenistic, failing to provide meaningful challenges to prevailing assumptions or to reconnect people with their rivers (Parsons et al. 2017; Spink et al. 2009, 2010).

A key outcome of the participatory turn has been the recognition that river restoration should not be considered a purely technical task framed in relation to ecological goals. The problem confronting river restorationists is not only a degraded ecosystem awaiting ecological improvement but also the fraught and complex relationships between people and these ecosystems through time. When a river is degraded to the point of ecological catastrophe, this often reflects a wider disconnect between the people who live with and value the river and the forces driving ecological decline. As such, restoration is not simply about ecological improvement, but is also about relationships both between people, and between people and the environment.

Just as there are multiple ways of relating to rivers, there are many ways to undertake their restoration. All too often, scientifically and technologically framed approaches to river restoration impose an anthropocentric perspective upon rivers through application of engineering principles within a command-and-control ethos (Brierley and Fryirs 2005). Certain visions of nature – and people's places within it – have been historically prioritized over others (Eden 2017; Eden et al. 2000). Attempts to restore the environment without restoring people's relationships to it are self-limiting in the long term. They also raise important questions of equity, influence, and justice: whose ideals should guide restoration (Bliss and Fischer 2011; Castleden et al. 2017; Egan et al. 2011)? Taking sociocultural restoration seriously requires confronting questions of whose rivers have been degraded, whose should be restored, and who gets to decide what, exactly, “restoration” means.

In this chapter, we explore novel indigenous-led governance experiments in *Aotearoa* New Zealand to consider different ways of practicing a more socioculturally responsible river restoration. Initiatives driven by *Māori*, the collective name of the indigenous kin groups of *Aotearoa* New Zealand, have created spaces for thinking about rivers pluralistically, valuing rivers as holistic, historical, and cultural agents with lives and rights of their own (Harmsworth et al. 2016; Parsons et al. 2019). Seeking to repair both human–human and human–environment relations at the same time, these initiatives foreground cultural assumptions, values, and aspirations instead of ignoring them. Building upon relational understandings of rivers as ancestral beings that are more ancient and powerful than people, they treat water and rivers as the lifeblood of society and the land (Fox et al. 2017;

Smith 2017; Thomas 2015; Wilcock et al. 2013; Wilkinson et al. 2020; Yates et al. 2017). Such reconceptualizations show how river restoration can seek relations of care and justice among humans as well as between humans and landscapes. As *Māori* perspectives realign the guiding ideals of river restoration and management, they offer a more ethically grounded basis for environmental governance (e.g. Fisher and Parsons 2020; Parsons et al. 2021).

After reviewing the meaning of river restoration – and our use of the term – we briefly outline how sociocultural contexts influence restoration prospects. We then explore how three experiments in river governance encompass a different relational framing with which to approach restoration practice in *Aotearoa* New Zealand. After briefly reviewing some integrative concepts found in *Māori* cosmologies, we sketch key features of *Aotearoa* New Zealand's governance that have evolved to recognize and incorporate *Māori* values, knowledge, and thinking in approaches to river and environmental management. We focus on recent developments in national policy that have embedded *Māori* concepts and platforms for participation in freshwater management, and new governance institutions that have emerged to make decisions about the Waikato River and the Whanganui River. For each of these developments, we reflect on how – and how well – they enable truly plural and integrative understandings of river systems. Finally, we discuss the implications of this work, presenting a critique of emerging approaches to co-management, associated policy developments, and assertions of river rights.

3.2 What is river restoration?

By definition, restoration entails returning something to a former condition. While this might usefully describe the process of returning an artwork or a heritage building to its former glory, its application to rivers, landscapes, and ecosystems is questionable (Brierley 2020). As landscapes and ecosystems change over time, irrespective of human intervention, reinstating a particular past condition is often neither possible nor necessarily desirable (Brierley 2020).

Attempts to restore nature can represent a particular kind of human arrogance: the assumption that we can simply “fix” parts of the world to absolve ourselves of responsibility for the destruction wrought upon it (Eden 2017). Philosophers have argued that ecological restoration as a universal objective is at best misguided; at worst it is inauthentic, fraudulent, and malicious (Katz 1996; Light 2000). Elliot (1997) describes this as “faking nature” through a replacement thesis, wherein the interests of development take precedence over environmental protection, trading off concerns for one place with another. Regardless of such contestations, river restoration is a rapidly growing industry in various parts of the world, with consulting companies, government agencies, and nonprofit groups competing for restoration funds as profit-motivated, commercial ventures create and sell environmental commodities (Kondolf and Yang 2008; Lave 2018).

Improvements to water quality in the latter decades of the twentieth century have enhanced societal reconnections to rivers in many places, re-establishing them as potentially safe and desirable environments (Ziegler 2014). Once this reconnection has been established, it is unlikely that people will want to go back to previous, more degraded conditions (Pauly 1995). Although industrial development and modern capitalism have

alienated people from landscapes and waterscapes, people across many nations want to foster restorative – if not regenerative – relationships with ecosystems.

Despite wide-ranging criticisms of river restoration as a management goal, the term resonates powerfully with many people (Kelly et al. 2018; Kondolf and Yang 2008). Increasingly, however, river management practices and aspirations have a future focus, rather than looking backwards: they are less concerned with trying to restore a river to what it was than maximizing socioecological functionality into the future (Brierley and Fryirs 2008, Dufour and Piégay 2009; Everard and Moggridge 2012). This recognizes that, while insights from the past can guide management endeavors, the future will be different in ways we do not and cannot necessarily know (Brierley and Fryirs 2016). Viewed in this way, the concept of restoration can support the articulation, incorporation, and application of sociocultural relationships with rivers (Johnston et al. 2012; Strang 2004). Rather than taking for granted particular ideals of what a river should be, careful negotiation is required to determine what is considered desirable for a given river (Blue 2018; Egan et al. 2011; Mould et al. 2018).

3.3 Placing river restoration in its biophysical and sociocultural contexts

The variable condition of rivers worldwide reflects a complex interplay between physical settings and processes, ecological dynamics, and human activities. Human activities imprint specific values, ideologies, and structures upon the landscape, such that landscapes become enduring reflections of cultural values, past and present, as well as their evolutionary histories (Ashmore 2015; Nassauer 1995; Wilcock et al. 2013). While increasing talk of the Anthropocene suggests the emergence of a human-dominated world (Wohl 2013), these impacts are not universal: variations in human imprints influence prospects for river restoration along a spectrum that ranges from extensively modified conditions through to places that have been subjected to relatively minor human impacts (Kondolf and Yang 2008). Across this spectrum, prospects for river restoration and the processes through which restoration might be practiced are very different.

For less-impacted rivers, conservation rather than restoration may be the priority. In highly domesticated landscapes, however, the boundary conditions within which rivers operate have been so modified that path dependencies constrain future management options (Beattie and Morgan 2017). Despite these limitations, there are many high-profile examples of effective restoration, whether in an urban context (Lee et al. 2014) or for major industrial rivers (Verweij 2017). Although only minor physical adjustments to these rivers are possible, improvements in water quality, ecological functionality, and the accessibility and capacity for public use of these riverscapes has engendered significant societal renewal, regeneration, and reconnection (Everard and Moggridge 2012; Petts 2007; Smith et al. 2014). As enhanced societal relationships to riverscapes regenerate the river, improved conditions enhance physical and psychological connections to, and interactions with, the river.

Rivers that fall somewhere in between the most- and least-impacted situations present the greatest opportunities for significant biophysical transformation through restoration efforts. The wide spectrum of approaches to restoration practice within this category ranges

from hands-on societal engagement through community-led riparian revegetation and associated weed management programs to freedom space or space to move initiatives that support ecological enhancement of rivers that have been modified by engineering practices (e.g. reconnection of former channels or manipulation of instream habitat while allowing the channel to adjust within an erodible corridor) (Biron et al. 2014; Buffin-Bélanger et al. 2015; Buijse et al. 2002; Piégay et al. 2005). Such practices reconceptualize societal relations to rivers, as demonstrated by Pahl-Wostl (2006, p. 1) in her overview of the social learning programs accompanying a shift in management practices from “fighting against water” to “living with floods and give room to water” in the Netherlands.

These efforts involve articulating and pursuing desirable socio-natural relationships within place-based contexts that are historically situated and biophysically constrained. In most instances, however, restoration practices reproduce the artificial separation of humans and nature, envisaging restoration as a technical task that leaves the design and implementation to experts. Many of these endeavors continue to assert human authority over the river in efforts to meet human needs, or simply replace one biophysical objective with another, failing to reconstitute the way that human communities and practices incorporate and connect with the river (or not). All too often, such approaches not only fail to engage productively with the regenerative potential of inclusive participatory practices but also sometimes further alienate some groups from their rivers (Eden and Tunstall 2006; Parsons and Fisher 2020; Spink et al. 2010), thereby overlooking opportunities to rethink and address concerns for fundamental relations between nature and society. Quite different sociocultural relations emerge through collective efforts to live with the river in harmonious ways, relative to external imposition of particular perspectives upon the river.

Indigenous worldviews potentially offer a more generative way of viewing relationships between nature and society, framing humans as part of nature. While caution must be taken to avoid oversimplification and overgeneralization, many indigenous knowledge systems emphasize concepts of reciprocity in which interactions with the land impact (in) directly on human society and people, land and rivers are existentially entangled (Salmond 2014; Kimmerer 2011; Wehi and Lord 2017). In this sense, restoration of land and of people are inseparable: sustaining the land sustains human communities (Fox et al. 2017; Thomas 2015). Reciprocal restoration recognizes that it is not just the land that is broken but our relationships with it, and with each other. Many indigenous viewpoints extend notions of care to the more-than-human realm, recognizing that “we live in a moral landscape governed by relationships of mutual responsibility, which are simultaneously material and spiritual” (Kimmerer 2011, p. 268).

While indigenous knowledges might challenge dominant understandings of landscapes, they do not necessarily contradict scientific knowledge. For example, Wilcock et al. (2013) demonstrate alignment in scientific and indigenous knowledges of river landscapes, highlighting shared concerns for spatial relations, evolutionary trajectories, and notions of emergence. Building upon such shared yet multiple knowledges, collaborations between scientists and indigenous peoples can conceive, design, implement, and monitor river restoration and management activities that encompass new ways of seeing and valuing rivers (Brierley et al. 2019; Fisher and Parsons 2020; Harmsworth et al. 2016; Hudson et al. 2016; Memon and Kirk 2012; Mould et al. 2018, Parsons et al. 2019; Wilkinson et al. 2020). In *Aotearoa* New Zealand and other settler colonial contexts, the histories of colonialism and

the life worlds of indigenous peoples provide an intriguing context to appraise questions of how and for whom rivers ought to be restored and managed. In Section 3.4 we consider some recent developments in what we term “fluvial pluralism” (Lyver et al. 2016). This term encompasses explicit recognition that there are different ways of knowing and managing rivers. We contend that recent developments in *Aotearoa* New Zealand present opportunities to productively reconceptualize and implement approaches to sociocultural and socio-natural restoration within the same frame of reference.

3.4 Emerging approaches to knowing and valuing rivers differently in Aotearoa New Zealand

Aotearoa New Zealand is in a freshwater crisis, with research and data showing an alarming and overwhelming trend toward degraded water quality, lost wetlands, exhausted or polluted aquifers, erosion and sedimentation problems, and habitat loss induced by intensive land modification (Elston et al. 2015; Gluckman 2017; Joy 2015; Joy et al. 2019; Kelly et al. 2014, 2017; Larned et al. 2020; Ministry for the Environment & Stats NZ 2020; Quinn et al. 2017). The OECD (2017) indicated that *Aotearoa* New Zealand’s economic growth is approaching its environmental limits, and that pollution of freshwater is spreading. The contamination of Havelock North’s drinking water supply in August 2016 led to approximately 5500 residents becoming infected with campylobacteriosis, likely causing four deaths (DIA 2017). Furthermore, the DIA has found substantial risks to drinking water, estimating that between 18 000 and 100 000 cases of waterborne illness occur each year in *Aotearoa* New Zealand (DIA 2017). Additionally, 70% of rivers do not meet Ministry of Health recreational contact guidelines (McBride and Soller 2017). Reliance on legislation such as the Resource Management Act 1991, the purpose of which is to promote the sustainable management of natural and physical resources by avoiding, remedying, or mitigating adverse effects of activities, has categorically failed to protect waterways (Joy and Canning 2020).

Like most parts of the world, river restoration in *Aotearoa* New Zealand primarily aims to repair changes resulting from excessive water extraction and nutrient leaching, damaging land uses, and the legacy of past river management practices. Other than occasional high-profile daylighting projects (Neale and Moffett 2016), fish ladder and regulation structures (Franklin and Bartels 2012), forestry management practices (Quinn and Wright-Stow 2008), and site-specific restoration initiatives (Caruso 2006a, 2006b; Ginders et al. 2016), contemporary approaches to river restoration in *Aotearoa* New Zealand are overwhelmingly dominated by community-led riparian vegetation and weed management initiatives (Collins et al. 2013; Daigneault et al. 2017; Death and Collier 2010; Greenwood et al. 2012; McKergow et al. 2016; Parkyn et al. 2003; Peters et al. 2015; Quinn et al. 2017; Storey and Wright-Stow 2017; Storey et al. 2016; Sullivan and Molles 2016).

Critically, many of these practices are part of co-governance and co-management arrangements with *Māori*, striving to link cultural and scientific values (Fisher and Parsons 2020; Harmsworth et al. 2011, 2016; Parsons et al. 2019; Tipa et al. 2017). These interventions build directly upon formal treaty arrangements that date back to the nineteenth century. The Treaty of Waitangi (the English draft) and *Te Tiriti o Waitangi* (in *Māori*), an agreement signed in 1840 between the British Crown (now represented by the

New Zealand government) and the leaders of *Māori* kin groups, established an alliance between Queen Victoria and the *rangatira* (kin group leaders) and recognition of indigenous rights and governance, providing the basis for collaborative partnership and engagement between *Māori* and the Crown (Harmsworth et al. 2016). Increasingly, attempts to enact restorative justice related to the Treaty of Waitangi have begun to reshape approaches to land and water management in *Aotearoa* New Zealand (Harmsworth et al. 2016; Hudson et al. 2016; Memon and Kirk 2012; Parsons et al. 2021; Parsons and Fisher 2020; Tipa et al. 2017). These transformational processes gained international prominence in 2017 when, for the first time in the world and following the example set by the passing of *Te Urewera* Act in 2014, the Whanganui River became a legal entity (*Te Awa Tupua* – the river which is an ancestral being) with associated rights (Boyd 2017; Brierley et al. 2019; Charpleix 2018; Ruru 2018).

3.4.1 *Te Ao Māori, the Māori world*

In *Te Ao Māori*, the *Māori* world, humans exist in a kin-based relationship with *Te Taiao* – the earth, universe, and everything in it – tracing shared descent from the primal parents *Ranginui* (Sky Father) and *Papatūānuku* (Earth Mother) (Hikuroa 2017). This relational understanding, known as *whakapapa*, positions people as just one element in a cosmic kin network, linked with everything through their shared descent from the primal parents (Salmond 2014). As direct descendants of *Papatūānuku* and *Ranginui*, *Māori* see themselves not merely “of the land” but “as the land” (Te Aho 2010, p. 285). In this relational schema, ancestors are literally planted in the earth. For this reason, *Māori* identify as *tāngata whenua*: people of the land. Kin-based networks of people, plants, and animals live together in intricate patterns of seasonal movement and exchange, governed by various kinds of *tapu* or ancestral restrictions (Salmond 2018). Kinship is tied to place through reciprocal relationships in which an individual is considered a part of that place. In the ontology of *Māori* language, people, land, and ancestors existentially overlap (Salmond 2014). In this way of being, rivers may be conceptualized as plaited ropes that entwine genealogical lines, tying land, people, and ancestors together.

Through *Māori* perspectives, rivers are inextricably linked to tribal identities, yet at the same time they have their own life force, their own energy, and their own powerful identities, authority, prestige, and sacredness (Te Aho 2010). Rivers such as the Whanganui and the Waikato, for instance, are understood as ancestral beings, with their own life and power. When first meeting, *Māori* might ask: “*Na wai koe?*” (“Of whose waters are you?”) (Morgan 2006a). *Māori* have always valued water as a *taonga* – something to be treasured, owing to its life-giving properties and importance in sustaining aquatic environments from which food was sourced through *mahinga kai* (food gathering practices). Carefully prescribed codes of practice based on detailed observations made over the generations maintained water quality and sustainable levels of *tuna* (eels), *piharau/kanakana* (lamprey), *ika* (fish), *koura* (freshwater crayfish), and other freshwater species (Harmsworth and Awatere 2013). Designated places were put aside for activities such as washing and religious ceremonies. Restrictions were often placed on the use of water, whether temporary (*rāhui*) or more permanent by placement of *owheo* (Williams 2006).

Viewed through a Māori lens, the economy is a wholly owned subsidiary of the environment, expressed in the *whakataukī* (proverb) “*Toi tū te whenua, whatungarongaro te tangata*” (“the land endures, while people come and go”). Custodial linkages are expressed through *kaitiakitanga* (guardianship), with deep respect for ancestral connections that inherently frame people as part of their landscapes and ecosystems. This is expressed in common sayings such as: “Harm the river and you harm my ancestors,” “Take care of the land, and the land will take care of you,” “If the river is dying, so am I.” A reciprocal relationship relates *manaaki whenua* (caring for the land) and *manaaki tangata* (caring for people) (Harmsworth et al. 2016).

Te Ao Māori positions the well-being of the river – its *mauri* (life force) – as intertwined with the well-being of its people. Ideally, this maintains a state of *ora*: peace, prosperity, and well-being for people, plants, and animals, as well as the river. If human activities deplete the *mauri* of a river, those who depend on it will ultimately suffer through a state known as *mate* (ill health, dysfunction). Shifts toward a state of *mate* and associated declines in the state of *mauri* have been induced through loss of habitat, water quality impacts, altered flow regimes, changes to flora and fauna populations, and the poor condition of ecosystems and resources. This has had a negative impact on *mahinga kai* (food gathering practices) and *taonga* species (biota of special significance and importance to Māori).

3.4.2 Colonization, transformation, and the case for restorative justice

In the initial years following the signing of the Treaty of Waitangi (1840), Māori still controlled much of the land that was notionally sold to colonists. However, a significant influx of European immigrants, especially after the 1860s, brought a progressive decline in Māori control of land and resources, as land was notionally purchased or confiscated if tribes refused to sell. Even before the first parties of settlers arrived in New Zealand, surveyors began to map out and subdivide the land, using grids based on latitude and longitude to define sections and settlements in what Māori bitterly referred to as “cutting up the land” (Salmond 2014). As *Papatūānuku*, the earth mother, was divided into bounded blocks to be owned and sold by people, the genealogical networks of relationship with land and sea, mountains and rivers were also severed. This shift was profound, alienating Māori kin groups from much of their ancestral land and water resources, and also from each other (Harmsworth and Awatere 2013). *Iwi* and *hapū* not only lost their living connection with their *awa* (rivers) but were also set at odds with each other and excluded from decision-making processes that would determine the management of rivers: in effect, they lost their voice and *mana* (authority, ancestral power). This had a fundamental impact on the Māori economy, way of life, and identity, initiating a state of *mate* that affected both Māori kin groups and their ancestral rivers (Parsons et al. 2021).

Colonial settlement not only brought about the wholesale clearance of bush, the drainage of wetlands, and the creation of large grassland areas for pastoral farming on steep, erodible hills as well as foothills and plains, it also often reconceptualized river systems as drains or sewers: conduits for the disposal of waste with an assumed limitless capacity for self-cleansing and self-renewal (Knight 2016). Cumulative responses to bush or forest clearance, sawmilling plants, drainage of wetlands, flax-milling, local mining activities,

pastoral farming, the operation of tanneries, dairy factories and meat works, and incursions of exotic species transformed rivers across most of the country. These impacts were compounded further by various command and control engineering practices: construction of dams for hydroelectricity and irrigation schemes, wastewater facilities, emplacement of stop-banks (artificial levees) for flood control, and piping or channelizing streams (especially in urban areas). Institutional framings asserted and embedded the values of a ‘rivered Eden’ (Beattie and Morgan 2017). Civil engineers were tasked with harnessing the powers of nature for human benefit, and keeping rivers away from people (Knight 2016). Agriculture has been the mainstay of the economy – initially sheep, but increasingly dairy production. Industrial systems of forestry, fishing, and farming have caused significant biodiversity losses, as waterways and harbors have become choked with sediment, pollutants, and contaminants, and aquifers and streams have been depleted beyond sustainable limits.

In 1975, the Waitangi Tribunal was established to hear grievances related to historic Crown actions that breached Treaty promises. Many claims relate to the loss or degradation of ancestral rivers, lakes, springs, wetlands, estuaries, and other waterways (Morgan 2006b). This process has directly driven the creation of Treaty settlement legislation – often passed with cross-parliament support – that includes a formal apology to affected *Māori* on behalf of the Crown, as well as economic and cultural redress (Ruru 2009). Treaty settlements often emphasize the ancestral and cultural significance of freshwater to *Māori*, recognizing that the Treaty of Waitangi guaranteed *Māori tino rangatiratanga* (absolute authority) over their lands, resources, and *taonga* (Waitangi Tribunal 2011). The ability of *hapū* and *iwi* to exercise *rangatiratanga* (chiefly authority) in water management is pivotal to enacting the Treaty’s guarantee of *tino rangatiratanga* (Ruru 2012). Incrementally, this is being supported through national freshwater policy and Treaty settlement legislation (Harmsworth et al. 2016).

Approaches to river restoration practice in *Aotearoa* New Zealand are in a state of flux, prospectively in the midst of a transformative reframing. To highlight the potential that is offered and the challenges that are faced, we focus upon three examples of fluvial pluralism: emerging approaches to co-management and co-governance arrangements for the Waikato River, national-scale policy developments, and assertions of river rights for the Whanganui River.

3.4.3 Co-management plans for restoration of the Waikato River that build on *kaitiakitanga* (guardianship)

The Waikato River is New Zealand’s largest river in terms of flow volume and length (425 km) (Figure 3.1). The catchment has been subject to myriad contested uses including land clearance and drainage of wetlands for agricultural use, construction of eight dams for hydropower generation, disposal of various human, industrial and agricultural wastes, and provision of domestic water for Auckland. Many of these developments were undertaken with little or no regard for *Māori* concerns and interests, in what Te Aho (2010) refers to as a paradigm of exclusion (see also Knight 2016; Muru-Lanning 2016; Young 2013). For *Waikato-Tainui iwi*, the Waikato River is conceptualized as a living ancestor and is recognized as having its own *mauri* and spiritual integrity. The river’s very origins are said to contain the life-giving water sent by one ancestral mountain, *Tongariro*, to heal another,

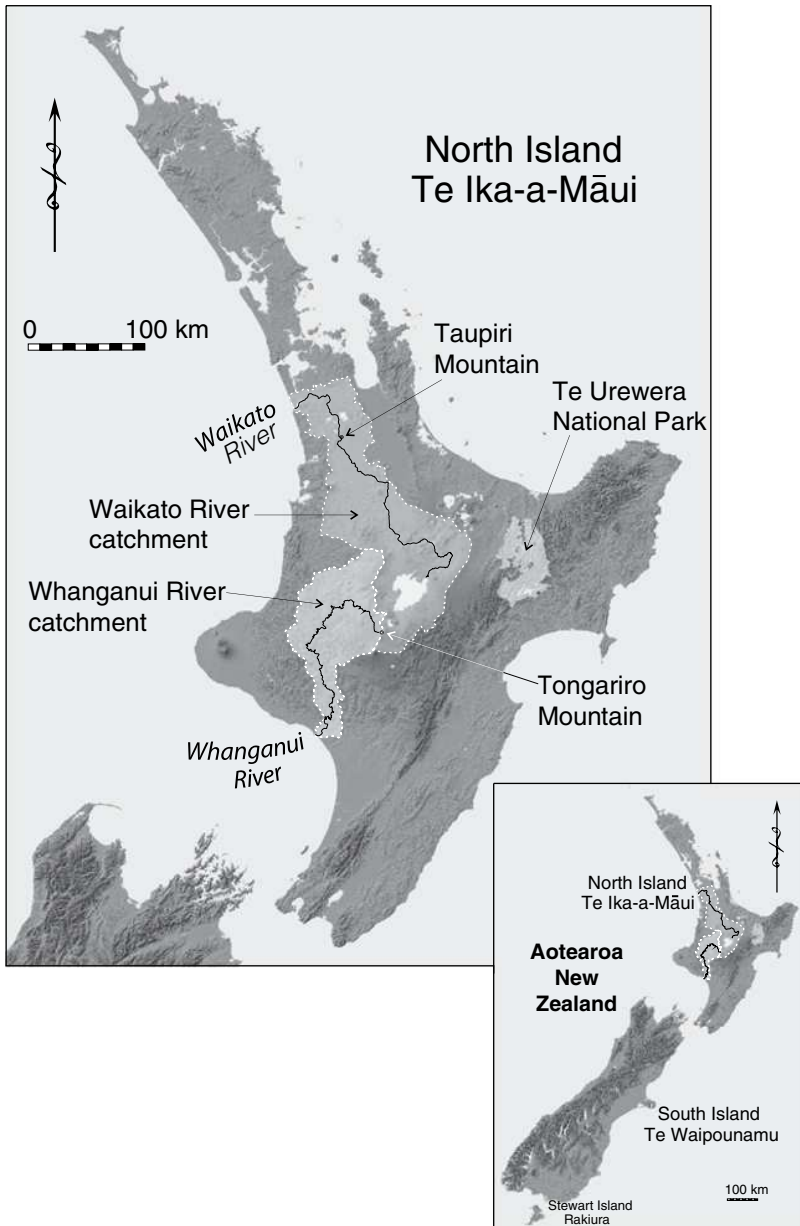


Figure 3.1 Map of Waikato River and Whanganui River catchments, Aotearoa New Zealand.
Source: Louise Cotterall.

the maiden mountain *Taupiri* (Te Aho 2010) (located on Figure 3.1). To *Waikato-Tainui* the Waikato River is a *tupuna* (ancestor) which has its own *mana* and in turn represents the *mana* and *mauri* of the tribe. The river is a single indivisible being. Disregard for Māori cultural heritage and sacred sites was directly acknowledged by the Waitangi Tribunal

(1993): “the failure to acknowledge the significance of *wāhi tapu* (sacred place) in *Māori* terms has contributed to a sense of powerlessness and grievance among *Māori* people” (quoted in Knight 2016, p. 141).

In 2008, *Waikato-Tainui iwi* and the Crown established a new co-governance structure in which *Waikato-Tainui* members became the guardians of the Waikato River (Harmsworth et al. 2016). The *Waikato-Tainui Raupatu Claims* (Waikato River) Settlement Act 2010 also ushered in a new era of co-management arrangements that seek to restore and protect the health and wellbeing of the Waikato River, addressing the social, cultural, and economic injustices of alienating *Māori* from the Waikato River and its surrounding lands (Muru-Lanning 2016, p. 142). In the Deed of Settlement the Crown accepts that it failed to respect, provide for, and protect the special relationship *Waikato-Tainui* have with the river as their *tupuna*, and accepts responsibility for the degradation of the river that has occurred while the Crown has had authority over the river. The Waikato River Act 2010 recognizes two important principles:

- 1) *Te mana o te awa* reflects that, to *Waikato-Tainui*, the Waikato River is an ancestor that possesses *mana* and *mauri*,
- 2) *Mana whakahaere* (mandate or authority) embodies the authority that *Waikato-Tainui* and other river *iwi* have established over many generations to exercise control, access to, and management of the river and its resources in accordance with *tikanga* (values, ethics, and norms of conduct).

Governance is the responsibility of the newly formed Waikato River Authority, made up of equal numbers of Crown and *iwi*-appointed members, including some of the other *iwi* with interests along the river, with the Crown retaining the overall decision-making ability in the case of disagreement. The authority administers a clean-up fund for restoring and protecting the health and well-being of the river that has allocated \$38 million to over 250 projects since it was established. One funded program is the *Waipā* Catchment Plan, the implementation of which spans 35 properties and includes the retirement of 477 hectares of land from grazing, fencing-off stock from 57 km of streams, and riparian revegetation using native species (88 700 plants). A concerted emphasis has been placed upon newly formed relationships between and amongst landowners, *iwi* members, local government staff, and the general community – united in their passion and effort to clean up the river (Fisher and Parsons 2020; Parsons et al. 2021). Similarly, *Ngā Kaitiaki o te awa o Pūniu* (Guardians of Pūniu River) is a five-year project initiated in 2018 which aims to improve water quality, the *mauri* of the *awa*, as well as helping to restore *tuna* (eel) habitat and terrestrial biodiversity. Activities for this project include fencing 32 km of bank length to exclude stock, erosion management works, planting 160 000 native trees, and the creation of a *marae*³-based restoration guide to enable growth in the development of other new organizations and groups to undertake similar activities. Stream-fencing and riparian revegetation programs support efforts at socioeconomic and cultural renewal based upon relations to the river (Waikato River Plan 2018). *Iwi*-appointed commissioners are involved in any decisions relating to applications for resource consents for activities affecting the river, including taking, using, damming or diverting water, and discharges to the river.

However, these deliberations have been divisive among *Māori*, as the government repositioned and relabeled *Māori* interests as stakeholders, rather than rights-holders,

reclassifying and relabeling particular *Māori* with newly defined roles and rights (Muru-Lanning 2016). The *iwi* representation in the Waikato River Authority is disproportionate and deeply contested, with the largest *iwi* having the same representation and decision-making power as the smallest, thereby failing to provide for equitable proportional representation based on population and extent of tribal *rohe* (territory) (Muru-Lanning 2016; Te Aho 2010). This reshaping of identities has transformed the cultural landscapes of the *Waikato*, masking the “fluidity and political importance of other forms of *Māori* descent and the socio-political importance of other *Māori* descent and socio-political groupings” (Muru-Lanning 2016, p. 119).

3.4.4 Re-framing relations to the river through emerging policy frameworks

Recent developments in national freshwater policy have incorporated *Māori* concepts and included provisions for *Māori* participation in water management in Aotearoa New Zealand (New Zealand Government 2014, 2017). In 2014 the National Policy Statement on Freshwater Management⁴ was launched. It included a statement detailing *Te Mana o te Wai* – the integrated and holistic well-being of a freshwater body – and described it as a key purpose of the policy. The *Te Mana o te Wai* statement was informed by engagement between the Crown and the Iwi Leaders Group, a collective of tribal representatives. Upholding *Te Mana o te Wai* requires that the use of water also provides for *Te Hauora o te Wai* (health and *mauri* of socioecological systems), *Te Hauora o te Taiao* (health and *mauri* of the environment), and *Te Hauora o te Tangata* (the health and *mauri* of the people). The revised 2017 National Policy Statement on Freshwater Management comments that: “The health and well-being of our freshwater bodies is vital for the health and well-being of our land, our resources (including fisheries, flora, and fauna) and our communities” (New Zealand Government 2017, p. 7). Specifically, *Te Mana o te Wai* incorporates principles of *mātauranga Māori* in efforts to maintain or enhance a healthy ecosystem that is appropriate to each freshwater body type (river, lake, wetland, or aquifer) (Salmond et al. 2017). This emphasizes concerns for the integrity of the catchment and biota, the health and *mauri* of the natural form and character of the environment (including iconic values and aesthetic features), *mahinga kai* (gathering of food that is safe to eat), and the protection of *wai tapu* (sacred waters) and the health and *mauri* of the people.

These *Māori* concepts and values have been embedded within the National Policy Statement as a part of the government recognizing its responsibility to honor the guarantees of *Te Tiriti o Waitangi* (the Treaty of Waitangi). While the language of *Te Mana o te Wai* is aspirational and integrative, however, it does not provide detail and is not given specific priority over other objectives. Objective A1 requires regional authorities “To consider and recognise *Te Mana o te Wai* in the management of fresh water” (p. 11). In contrast, Objective A4 – which was added in 2017 – requires regional authorities “To enable communities to provide for their economic well-being, including productive economic opportunities” (p. 12). Although *Te Mana o te Wai* adds integrative language to the National Policy Statement, it also sits in a contradictory relation to other elements of the policy, and indeed other policy priorities of the government. In this way, the extent to which *Te Mana o te Wai* provides a substantive mechanism for *Māori* to exercise authority over waterways remains an open question, to be worked out through interpretative battles in the legal and planning systems. Despite widespread

support for the intent of *Te Mana o te Wai*, regional and local governments have thus far largely failed to deliver on upholding and implementing associated practices. As a consequence, the transformative potential therein is yet to be realized. Nevertheless, the evolution of such policies is promising and has considerable restorative potential.

3.4.5 The rights of the Whanganui River: the agency of the river

Recent Treaty settlements (e.g. *Rukutia te Mana Ngāti Rangī* Deed of Settlement 2018 and Pare Hauraki Settlement Redress 2018) potentially mark ground-breaking developments in emerging sociocultural, political, and governance arrangements in the management and restoration of rivers in *Aotearoa* New Zealand. In contrast to the Waikato River settlement, which centered on the Waikato River Authority as a mechanism for *iwi* to exercise authority over the river, the recent Whanganui settlement legislation is built around granting the Whanganui River the rights of legal personhood (Charpleix 2018; see Figure 3.1). In March 2017, the *Te Awa Tupua* (Whanganui River Claims Settlement) Act was passed by the New Zealand Parliament. This is one of only a few instances in the world where a natural entity has been recognized as having its own legal personality and rights (Boyd 2017). In the Act, the Whanganui River is described as “an indivisible and living whole, comprising the Whanganui River from the mountains to the sea, incorporating all its physical and meta-physical elements.” Designating the river as a “living being” and recognizing the river as a legal entity with an independent voice placed the Whanganui River in a new set of relationships with human beings, more closely aligning with ancestral ways of knowing and being. The river’s own needs and rights are given legal protection. Within the Act, *Tupua te Kawa*, the values that define the essence of the river, describe the Whanganui River as the source of *ora* (life, health, and well-being). This is expressed in a *whakatauaiki* (proverb) often used by Whanganui people, “*E rere kau mai te awa nui mai i Te Kāhui Maunga ki Tangaroa; ko au te awa, ko te awa ko au*” – “The great river flows from the Mountains to the Sea; I am the river, the river is me” (Rangiwaiaata Rangitihī Tahuparae in Wilson 2010) and is often shortened to “*ko au te awa, ko te awa ko au*.” Such framings reflect a reciprocal merging of rights and obligations. Brierley et al. (2019) explore potential implications of river rights in reconceptualizing the incorporation of scientific principles to guide river management practices in *Aotearoa* New Zealand (c.f. Wilkinson et al. 2020). They argue that river scientists can act as allies for indigenous peoples and as advocates for local communities, endorsing others’ aspirations and support progressive visions of living with/in nature, concluding that partnerships that incorporate such framings acknowledge the fundamental importance of cultural identity, building upon understanding and respect for multiple knowledge systems, values, and perspectives (Brierley et al. 2019).

The origins of the *Te Awa Tupua* Act can be traced back to US law academic Christopher Stone, and his book *Should Trees Have Standing?* (Stone 1974), in which he argues that forests, oceans, and the environment should have the ability to be heard and have someone speak on their behalf. Linking such principles to *Te Tiriti o Waitangi*, Morris and Ruru (2010, p. 50) propose that “to afford legal personality to New Zealand’s rivers would create an exciting link between the *Māori* legal system and the state legal system,” noting further that “the legal personality concept aligns with the *Māori* legal concept of a personified natural world” (p. 50). The legal argument provided the opportunity for the Government to give

consideration to a solution for the claim by *Te Atihaunui-a-Paparangi* (Whanganui River people), who first petitioned the Government for the restoration of an active relationship with their ancestral river in 1887, and had been persistently seeking resolution thereafter.

Although *Te Awa Tupua* Act declares the Whanganui river to be a legal person, this only roughly approximates ancestral realities. A *tupua* is not a person but a powerful being from the dark, ancestral realm; an *awa* is not an individual, but a living community of fish, plants, people, ancestors, and water, linked by *whakapapa* (Salmond 2017). In the deed of settlement for the Whanganui River Treaty claim, two people, mutually chosen by the Crown and the Whanganui tribes, are established as *Te Pou Tupua*, “the human (living) face” of the river, acting in its name (representing its voice) and in its interests (protecting its rights) and administering *Te Korotete* (literally, a storage basket for food from the river), a fund of \$30 million to support the health and well-being of the river, the criteria for which are being developed. In addition, a payment of \$80 million is made to *Whanganui iwi* as redress for breaches of their rights in relation to the river under the Treaty of Waitangi. It is yet to be seen whether making the *Whanganui* a legal person with its own rights is merely a modernist device that ultimately undermines conventional Māori values, or whether it underpins a regime in which both people and the river have rights and responsibilities, aimed at returning the river to a state of *ora* (Ruru 2018; Salmond 2017).

3.4.6 Reconceptualizing river restoration in Aotearoa New Zealand

These case studies point to several key issues that emerge from the reconceptualization of rivers as a focal point for their restoration in Aotearoa New Zealand. A river-centric perspective moves beyond imposition of an anthropocentric lens, embracing concerns for more-than-human relations to the river (Brierley 2020). This emphasizes the prevention and minimization of harm through implementation of a duty of care. Equivalent approaches to working with the river are outlined in a UN report on nature-based solutions for water management problems (UN Water 2018). Typically, this entails a whole of system approach, taking conscious decisions to live with the river as a living entity (Brierley et al. 2019). Such framings reconceptualize restoration practice, extending beyond the realms of scientific and technical experts to embrace more inclusive approaches to participatory practices. However, many issues are yet to be addressed in efforts to maximize the potential of such experiments in fluvial pluralism (cf. Parsons et al. 2019, 2021).

3.5 Conclusions

Administrative and governance arrangements in Aotearoa New Zealand are being reconceptualized and reconfigured in ways that encapsulate and encompass Māori values, knowledge, and perspectives. This offers prospects to forge new, albeit based upon old, relations to rivers, wherein human activities including restoration practices are understood as part of an emergent, evolutionary nature. Through these negotiations, we are beginning to re-know rivers in different ways, reframing socio-natures in ways that build upon indigenous (Māori) knowledges (Parsons et al. 2017; Wilcock et al. 2013; Wilkinson et al. 2020). A wide range of new approaches to managing and restoring rivers builds upon these emerging relationships

(Awatere et al. 2017; Fisher and Parsons 2020; Harmsworth et al. 2016; Hikuroa et al. 2018; Hudson et al. 2016; Tipa et al. 2017). Such prospects are considered here as a form of fluvial pluralism – a way of embedding different relations between humans and nature through a platform for restorative justice (Charpleix 2018; Lyver et al. 2016).

These developments are starting to dismantle visions of river restoration which are rooted in the past, viewing people as integral parts of contemporary living riverscapes (e.g. *Te Awa Tupua* [Whanganui River Claims Settlement] Act in 2017). Emerging approaches to restorative justice offer promise for better outcomes through re-imagined and remembered relationships between people and freshwater. *Māori* understandings of rivers can guide the constructive renegotiation of river restoration efforts, recognizing the independent life and power of rivers and the interdependence – rather than the separation – of people and the more-than-human (Brierley 2020). Prospectively, restoration provides a platform to promote human–environment relations that are inclusive of differing cultural identities as well as different species (Ziegler 2014), seeking to address issues of power and privilege (Egan et al. 2011; Fox et al. 2017; Magallanes 2018).

In such deliberations it is inappropriate to simply present indigenous peoples as natural protectors of the environment, or to merely conflate their interests with “the local” (Coombes et al. 2012, 2013). Rather, this chapter has argued that incorporation of *Māori* ideas into contemporary management regimes reconceptualizes river restoration as a simultaneously biophysical and sociocultural process (Mould et al. 2018; Wilcock et al. 2013). We have explored three mechanisms through which *Māori* and the Crown have tried to enact a fluvial pluralism, and identified practical, scientific, and political tensions with their implementation. The freshwater policies discussed herein map a progression of increased influence of *mātauranga Māori*, each step celebrated for its novelty and innovation. All three policies involve creating space to reappraise what constitutes successful river management (cf. Le Heron et al. 2021). The real challenge lies in the implementation of these innovations.

While our examples are indelibly New Zealand-specific, our examination can offer insight for river restorationists in other settings. At a basic level, these three mechanisms can be conceptualized as different attempts to incorporate holistic concepts of rivers into environmental management and environmental policy. To abstract from our case, others may be interested in the form and function of these innovative governance arrangements. Institutions matter, and it is likely that new decision-making structures based on strong values with specific mandates (as exemplified by the Waikato and Whanganui co-governance arrangements) may be able to realize better outcomes than vague, symbolic language of national policy. At the same time, however, every place and people must find their own path, recognizing their histories and ancestors, giving effect to their values, and providing a set of shared aspirations for the future.

In the context of *Aotearoa* New Zealand, recent developments guided by *mātauranga Māori* offer prospects for reciprocal and regenerative restoration that re-engages people with land and waterways, renews human–place connections, and enables people to reclaim responsibility for sustaining the land and waterways that sustain them. Such fundamental reconceptualizations do not envisage restoration of waterways as a trade-off between the economy and the environment; rather, they envisage prospects that everyone acts as an agent of change, wherein we all have a shared responsibility for these *taonga* (treasures) for future generations. To date, far too many restoration efforts have been little more than symbolic in their aspirations and applications, encompassing middle- to upper-class values in

both their orientation and benefit accrual. Engagements with fluvial pluralism offer prospects that restoration can achieve much more than this.

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Notes

- 1 *Aotearoa* is a *Māori* name for New Zealand's North Island, and the combination of *Aotearoa* New Zealand is often used as a name for the entire country to reflect its bicultural history.
- 2 Although *Māori* is the collective name of the indigenous kin groups of *Aotearoa* New Zealand, *iwi* (tribal nations) and *hapū* (subtribal groups) are the key groupings that underpin *Māori* identity. *Māori* people share common ancestry and a language and culture that are closely related to those of peoples inhabiting the Polynesian triangle, delineated by the Hawai'ian Islands in the north, Rapanui (Easter Island) in the east, and *Aotearoa* New Zealand in the south and all those in between.
- 3 A *mārae* is a *Māori* community institution, usually comprising an ancestral house and a food preparation and dining house. They are a bastion of *Māori* culture and serve communal, social, and religious functions.
- 4 The National Policy Statement on Freshwater Management is a key instrument of the Resource Management Act 1991, that provides water quality and quantity objectives and policies that must be given effect in regional policy statements, and regional and district plans.

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