

Let rivers be rivers: using Māori knowledge to reframe river management in Aotearoa New Zealand.

Que les rivières soient des rivières : utiliser les connaissances des Maoris pour recadrer la gestion des rivières à Aotearoa en Nouvelle-Zélande

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RÉSUMÉ

La gestion des rivières est façonnée par la façon dont une rivière est perçue. Une philosophie de commandement et de contrôle qui considérait les rivières d'Aotearoa en Nouvelle-Zélande comme des entités à apprivoiser pour servir les intérêts humains est en contraste frappant avec les conceptualisations maories des rivières en tant qu'entités dynamiques et vivantes qui fonctionnent comme l'élément vital de la terre. La récupération et l'utilisation des connaissances maories (peuples indigènes d'Aotearoa, Nouvelle-Zélande) (Mātauranga Māori) appellent à un recadrage de la manière dont les rivières sont gérées qui s'aligne sur la compréhension géomorphologique des rivières situées dans une entité de bassin dynamiquement connectée. La construction de revêtements rocheux de chenal, de protection des bords et de berges d'arrêt (digues ou murs anti-inondation) dans les plans de gestion des rivières du XXe siècle visait à fixer les rivières en place et a complètement changé le caractère et le comportement des rivières. Les inondations du 21e siècle révèlent la vulnérabilité de la gestion des rivières du 20e siècle. Laisser les rivières être des rivières et développer des liens culturels entre les communautés et leur awa (rivière) est fondamental pour une gestion efficace des rivières au XXIe siècle. Nous explorons ces idées en utilisant l'exemple de la rivière Ōtaki..

ABSTRACT

River management is shaped by the way a river is perceived. A command and control ethos which viewed Aotearoa New Zealand's rivers as entities to be tamed to serve human interests is in stark contrast with Māori conceptualizations of rivers as dynamic, living entities that function as the lifeblood of the land. Recovery and use of Māori (indigenous peoples of Aotearoa New Zealand) knowledge (Mātauranga Māori) calls for a reframing in the way rivers are managed that aligns with geomorphological understanding of rivers as situated in a dynamically connected catchment entity. Construction of channel rock-lining, edge protection and stopbanks (levees or floodwalls) in twentieth century river management schemes sought to fix rivers in place and have completely changed river character and behaviour. 21st century floods are exposing the vulnerability of 20th century river management. Letting rivers be rivers and developing cultural connections between communities and their awa (river) is fundamental to effective river management into the 21st century. We explore these ideas using the example of the Ōtaki River.

KEYWORDS

Cultural connections, Māori knowledge, paradigm change, river futures

1 INTRODUCTION

1.1 Māori knowledge and perspective

For Māori an awa is not just a river – it is an interconnected, living system that is not merely viewed as a collection of parts (water/flow, bed, banks, tidal/non-tidal, navigable), for many it is ancestral. A river is more than a resource to be used – it is a force to be lived with, reckoned with, and respected, reflected in translated whakatauki,(proverbs): “I am the river, the river is me”, “Harm the river and you harm my ancestors”, “Take care of the land, and the land will take care of you.” Rivers nurture us, so we have a responsibility to nurture them. Harmsworth et al. (2016) frame this as a reciprocal relationship comprising manaaki whenua (caring for the land) and manaaki tangata (caring for people). Custodial linkages are expressed through kaitiakitanga (guardianship). Deep respect for ancestral linkages inherently frames people as part of their landscapes and ecosystems. Working with the life force, the mauri of the river, encompasses working with a living system, at the same time protecting (or enhancing) the mana (authority) and mauri of the river and its communities. This conceptualization recognizes river systems are vulnerable to loss or destruction. If interdependencies falter or fail, they enter a state known as mate (ill-health, dysfunction). Its reciprocal, ora, is a state of health, vitality, prosperity and well-being for the river, as well as people, plants and animals – the river communities.

1.2 Ōtaki River

In the late nineteenth and early twentieth centuries ancestral Māori connections inscribed distinctive meaning to different parts of the Ōtaki River. In its lower course, this dynamically adjusting entity comprised a range of landforms (geomorphic units) that made up a rich and diverse physical habitat mosaic (Figure 1). Socio-cultural relations to the river reflected and built upon this diversity, with differing and often competing uses and connections to different components of the river. In this sense, there were no blank spaces on maps – everywhere was inscribed with meaning (Wilcock et al., 2013). Importantly for Māori, the entire river system, Mai i ngā Maunga ki te Moana ‘From the Mountains to the Sea’, was conceived as a living, indivisible entity. However, as in other parts of the world, a ‘command and control’ paradigm sought to assert human dominance over nature. The value of alluvial flats (floodplains and terraces), which had considerable agricultural potential, was only realised once the vegetation cover was removed, areas were drained and flood inundation managed. In the mid nineteenth century rivers were viewed as drains or sewers - conduits for the disposal of waste with a limitless capacity for self-cleansing and self-renewal. Civil engineers were tasked to ‘harness the powers of nature for human benefit’ and essentially keep rivers from destroying infrastructure and away from people. Command and control practices included building stopbanks (artificial levees) for flood control; edge protection and straightening to stabilise and simplify mobile channels (Figure 1).

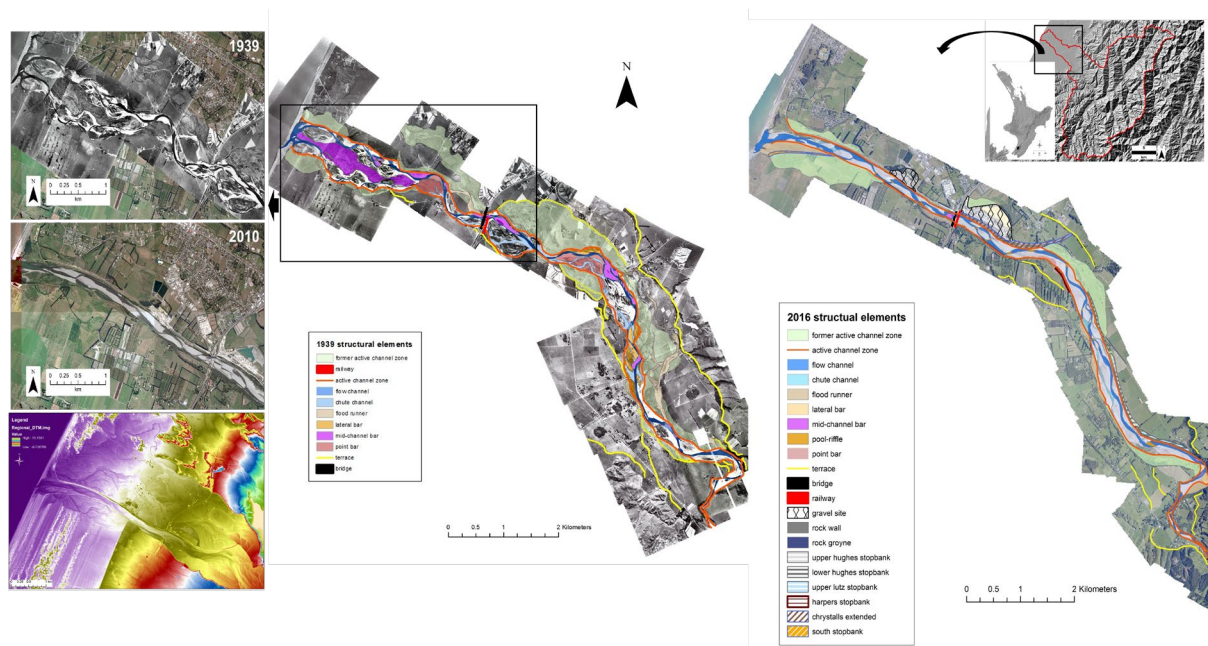


Figure 1. Ōtaki River in 1939 prior to engineering and in the early 21st century with substantial hard structural control. Inset shows location in New Zealand (top right) and LIDAR-derived floodplain DEM (lower left).

2 PROSPECTIVE FUTURES

The capacity for adjustment and range of variability in the Ōtaki river in this 'tamed' form has been greatly reduced (Figure 1). However, this has come at enormous cost, not merely in economic terms associated with construction and maintenance (e.g. programmed works in the Ōtaki alone in 1997 cost over \$NZ 5 million). Biophysical costs include loss of habitat, altered riparian vegetation interactions, and associated biotic (biodiversity) relations. In socio-cultural terms, ancestral relations and connections to the river have been profoundly disrupted. These rivers have been transformed into different forms of living entity. While narratives and memories provide a sense of ancestral relations, the psychological underpinning of environmental loss (solastalgia) is little understood. Critically, these historical circumstances set the scene for future prospects, as we seek to reframe connections to rivers and associated policy implications.

2.1 Reframing river management

We in Aotearoa New Zealand are at a cross-roads in the way we manage rivers. We have the choice to continue on the pathway of a defensive mindset, in which society is pitted against the natural processes and function of our rivers, alternatively we can develop that relational mindset in which society makes a conscious decision to live with rivers, and recognises the 'rights of the river', informed by indigenous Māori knowledge. The framing of river management is, arguably, unique here. Elsewhere river health has been mandated as part of statutory frameworks, such as the European Water Framework Directive, which perhaps miss the cultural connections with rivers that are so strongly part of indigenous understandings of river function in Aotearoa New Zealand. Advice from our scientific community for river management often inevitably focuses on tools and databases to understand physical parameters and connections in catchments. But in Aotearoa New Zealand we must take into account the unique social-ecological context for any attempts at restoration to be effective (cf. Arsénio et al., 2020).

Under the current National Policy Framework for Freshwater Management in New Zealand, the principle of Te Mana o te Wai emphasises specific provision for river health connected with the community and cultural meaning. The focus to date on these National Policies has been on water quality: community concerns largely relate to swimmability and gathering kai (food). There remains a need to overtly incorporate the physical processes and dynamics of river channels into these frameworks. A succession of major floods across the country between 2018-2021 has focused public attention on our river corridors and river managers are increasingly of the opinion that the status quo is not fit for purpose from an economic perspective, particularly given the prospect of increasing flood frequency and magnitude in a warming climate.

2.2 Letting rivers be rivers

In light of changing flood magnitudes and frequencies, there is a need to work with, rather than against, river processes if future river management is to be effective. Contemporary scientifically-informed approaches to river management, which recognise rivers require space to adjust and accommodate change in flood regimes, will understand and plan for dynamically adjusting river channels responding to events impacting their catchments. These approaches align directly with Māori knowledge in which cultural connections are respected and rivers are embraced as living entities to be lived alongside, rather than controlled. Working with river processes in this way restores the mana of the river and enables 'rivers to be rivers'. Mātauranga Māori helps reframe river management in a more environmentally sustainable way that truly respects the rights of the river. We are potentially on the cusp of a paradigm change, giving recognition to indigenous cultural values and perspectives in managing rivers in Aotearoa New Zealand by managing our relationships with rivers. A clear national statement informed by both science and mātauranga Māori is required to give effect to this reframing.

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