



Why New Zealand's Indigenous reconciliation process has failed to empower Māori fishers: Distributional, procedural, and recognition-based injustices



Hekia Bodwitch^{a,b,*}, Andrew M. Song^c, Owen Temby^d, John Reid^b, Megan Bailey^a, Gordon M. Hickey^e

^a Marine Affairs, Dalhousie University, Halifax, Nova Scotia, Canada

^b Ngāi Tahu Research Centre, University of Canterbury, Christchurch, New Zealand

^c University of Technology Sydney, C-SERC (Climate, Society & Environment Research Centre), Ultimo NSW 2007, Australia

^d School of Earth, Environmental, and Marine Sciences, The University of Texas Rio Grande Valley, Brownsville, TX, United States

^e Department of Natural Resource Sciences, McGill University, Sainte-Anne-de-Bellevue, Quebec, Canada

ARTICLE INFO

Article history:

Accepted 15 March 2022

Keywords:

Land-sea interface
Small-scale fisheries
Co-management
Agriculture
Environmental justice
Equity

ABSTRACT

How is it that the New Zealand government's process for re-establishing Indigenous fishing rights has failed to deliver thriving Māori fisheries? This paper examines why, at Te Waihora, a coastal lake, and site of one of the nation's longest running and best-funded state-Māori co-governance agreements, Māori fishers have been unable to use their rights to support their fishery. As of 2018, the lake's culturally and ecologically significant eel population was no longer commercially viable, a decline fishers have attributed to rampant dairy industry expansion upstream. Drawing on environmental justice literatures, we deploy a multi-dimensional framework to identify factors shaping possibilities for justice in the wake of rights reconciliation, as experienced by Māori fishers, scientists, and leaders. We engage theories of political economic relations to interpret the implications of these experiences for environmental justice theory and politics. Ethnographic accounts demonstrate that the New Zealand government's process for re-establishing Māori rights falls short of achieving distributional, procedural, and recognition-based dimensions of environmental justice, and that these effects are interlinked. In particular: (i) downstream fishers are placed to bear disproportionate costs of runoff from upstream land use change; (ii) Māori fishers have little influence over governance decisions that affect land use; and (iii) government claims, including that Māori should, "move beyond grievance mode," obscure logics for resistance. We suggest that the government's support for dairy industry expansion represents an attempt to mitigate crises of overaccumulation, characteristic of competitive markets. Unlike those who identify persistent injustice as a logic for turning away from the state, we argue that the recurring nature of these crises, and the role state organizations play in directing responses, indicates a rationale for continued engagement with state governing bodies to advance justice.

© 2022 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

In 2015, our lead author first arrived at Te Waihora,¹ a Māori owned and governed coastal lake, home to New Zealand's, then highly acclaimed and well-funded, Indigenous-state co-governance agreement between the Ngāi Tahu tribe and the Canterbury Regional

Council (Lomax et al., 2015; Prystupa, 1998). She was there, on the east coast of New Zealand's South Island, to interview Māori fishers about their experiences using their state-recognized rights, obtained through an internationally-renown treaty settlement process (Anaya, 2011), to develop their fishery. At that time, Te Waihora harbored New Zealand's most robust eel fishery, a species that had experienced massive population declines across the globe (Dekker et al., 2003). In both academic and government reports the co-governance agreement had been represented as a success (Prystupa, 1998). However, walking past fish bins, nets, dogs, and chickens, and up to the hut of the lake's kaitiaki, a tribally appointed customary guardian, the first words she heard, called out from the back room, were, "Co-management is shit!"

* Corresponding author at: Marine Affairs Program, Dalhousie University, Faculty of Science, 1355 Oxford Street, Rm 805, 8th Floor Life Sciences Centre (Biology), Halifax, Nova Scotia B3H 4R2, Canada.

E-mail addresses: Hekia.Bodwitch@dal.ca (H. Bodwitch), Andrew.Song@uts.edu.au (A.M. Song), Owen.Temby@utrgv.edu (O. Temby), John.Reid@canterbury.ac.nz (J. Reid), Megan.Bailey@dal.ca (M. Bailey), Gordon.Hickey@mcgill.ca (G.M. Hickey).

¹ Also referred to as Lake Ellesmere.

Ngāi Tahu leaders, who co-governed the lake with the Canterbury Regional Council, had granted Roger Tainui,² an intergenerational lake fisher, the status of kaitiaki. As kaitiaki, Tainui held the legal authority to write permits for fish above daily recreational catch limits. Yet, despite formal recognition of his fishery expertise, in 2014, Tainui stopped attending co-management meetings, on the grounds that his understanding of the primary threat to fishery health – rapid land-use change upstream, primarily to support the expansion of the nation's dairy industry – was insufficiently accounted for. From 2000 to 2015, the number of hectares managed as dairy in Te Waihora's drainage basin had increased by over fifty percent, as had the number of cows in the Selwyn-Waihora district, located upstream from and comprising Te Waihora (Ford et al., 2017). The co-governing groups' efforts to mitigate the effects of farm runoff by planting native plants along waterways, in Tainui's view, failed to mitigate the threats that upstream land use change posed to Te Waihora's culturally significant short-finned eel (*Anguilla australis*) fishery.

In 2017, Tainui's concerns appeared validated by a government-funded analysis, which stated that every dairy in the Canterbury region, comprising Te Waihora, needed to be shut down for the lake to meet the national water quality standards (Mitchell, 2017). To be in compliance, Te Waihora required a seventy-six percent reduction in nitrogen and a fifty percent reduction in phosphorus (Mitchell, 2017). The Regional Council, then run by commissioners appointed by the national government, requested a compliance exemption on the grounds that the "social and economic consequences" for the region would be "too severe" (Mitchell, 2017). As treaty partners with the New Zealand government, Ngāi Tahu leaders, representing one of the largest and wealthiest iwi (tribes) in New Zealand and covering most of the South Island, had the authority to contest this regional council's decision, but did not exercise this right.

In 2018, amid deteriorating water quality, Te Waihora's commercial fishers stopped fishing on account of there being no eel. Several months later, the funding for the lake's co-governance agreement ran out and Ngāi Tahu leaders, at that stage, did not request additional funds. Tainui attributed this quiet end to leaders' shame, associated with their inability to protect the health of a fishery, which, several decades prior in treaty settlement negotiations, Ngāi Tahu leaders had presented as crucial to their cultural well-being (Waitangi Tribunal, 1992).

1.1. Indigenous rights and environmental justice

This case represents defining characteristics of environmental injustices, or disproportionate distributions of burdens and benefits from natural resources, which continue to affect Indigenous and other historically disadvantaged groups' abilities to support their livelihoods (Huber, 2019; Llamazares et al., 2020, Tauli-Corpus et al., 2020). These injustices have persisted despite state governments' commitments to Indigenous rights and environmental justice. One explanation given as to why injustices continue to occur alongside stated efforts by governments to mitigate them, is that states are predestined to govern in ways that reinforce inequalities (Pulido et al., 2016; Pellow 2018), and when environmental justice activists seek support from state organizations, they reinforce state authority (Coulthard, 2014). Scholars advocating this line of thinking have encouraged Indigenous and environmental justice groups to "turn away" from the state³ (Coulthard, 2014) and advance their own forms of development. Those advocating for environmental justice politics based on "turning away" (Coulthard,

2014), and even, in some cases, abolishing the state (Pellow, 2018), however, have been critiqued on the grounds that the state is not a singular entity, but rather, operates as a series of relationships⁴ (Purucker, 2021). Moreover, for those without territory, engagements with state organizations may be necessary for survival (Purucker, 2021). Te Waihora's fishers' experiences represent an additional context in which engagement with state governing bodies is warranted, as occurs when a group's livelihoods and well-being are affected by upstream resource use that is governed by entities representing the state. In this case, state practices, including regulatory initiatives and, also, claims that Māori should "move beyond grievance mode," have made possible and mitigated resistance against intensified resource use upstream. This identification of state-sanctioned injustices in the wake of an Indigenous rights reconciliation initiative demonstrates how efforts to redistribute wealth and rights, and incorporate Indigenous groups into governing procedures are, on their own, insufficient to advance justice. Possibilities for participation are tied to the extent to which participants can garner support for their views. Given that state agencies have and can assert highly publicized claims about Indigenous peoples' place in society, engagement with state bodies to rework these claims, as well as the policies that directly support inequitable access to resources, is warranted. This study supports calls from others regarding the significance of recognition as a dimension of environmental justice (i.e., Martin et al., 2016; Schlosberg, 2004; Sikor, Martin, Fisher, & He, 2014; Whyte, 2017).

Our study draws on ten months of ethnographic research in the Te Waihora region conducted by our lead author from 2015 to 2019, which included participant observation and interviews. Participant observation at Te Waihora involved time spent living in a Māori fisher's hut and working on Māori fishers' boats. The lead author also conducted over 150 key informant interviews with fishers, iwi leaders, government officials, and other fishery stakeholders about the barriers faced and strategies deployed in their attempts to use rights granted in Indigenous-state treaty settlements to advance Māori fishery development (for details on process, see Bodwitch, 2017a). Over three-quarters of these interviews were unrecorded, in part given the sensitive nature of the strategies fishers have deployed to survive in the wake of injustices; the rest were recorded and subsequently transcribed. In addition, semi-structured and informal exchanges took place in group settings enabling identification of collective sentiments, in ways that effectively amounted to a series of focus groups (approximately 40). Separate discussions were held with farmers and scientists (10 and 5, respectively) to gather views on regional environmental and economic changes. We examined this field-based data against shifts in policies and governing initiatives, as well as representations of economic activities, biophysical processes, and Indigenous-state relations, as found in media, government reports, and scientific publications. Reports from the Waitangi Tribunal, the government-funded research organization charged to evaluate the contemporary nature of Māori grievance claims, were also examined (i.e., Waitangi Tribunal, 1992).

To organize these data, we outline theoretical considerations from environmental justice, political ecology, Indigenous rights, and environmental governance literatures to define a framework for analyzing the outcomes of Indigenous-state settlement negotiations. The need to define an approach to evaluating the effects of Indigenous rights recognition initiatives, in New Zealand especially, is due in part to claims from public and academic commentators (i.e. de Alessi, 2012; Rata, 2011) that iwi leaders' decisions, rather than the context in which these decisions are made, are

² All names have been changed.

³ See also, Fanon (1965), who describes "turning away" as a strategy to resist colonial domination.

⁴ See Thelen et al. (2014) and Jessop (2016) for analysis of the state as a series of relationships.

the primary reason so few Māori individuals can make a living from fishing, despite Māori collectively owning major portions of the nation's fishing rights (Bodwitch, 2017b; Song et al., 2018a). Our analysis challenges this narrative, to demonstrate some aspects of the institutional and political contexts in which rights are asserted that affect leaders' abilities to manage collectively held fishing rights to support Māori fishery development.

In the next section, we review theories of environmental justice and capital accumulation that contribute to understanding why environmental justice is or is not achieved through state-Indigenous reconciliation processes. In the following section, we outline our framework for analyzing justice in the wake of Indigenous rights re-establishment initiatives. We then apply this framework to identify practices affecting justice, as described by Māori fishers, scientists, and leaders. In the concluding discussion, we explore the implications of Māori fishers' experiences for understanding processes giving rise to environmental injustice, including, in this case, state representations of Indigenous groups.

2. Literature Review: Conceptualizations of justice and theories of state power

The field of environmental justice studies gained prominence in the early 1990s through scholarship and activism that highlighted the inequitable distribution of environmental benefits and burdens experienced by communities of color in the US (Bullard, 1990; Čapek, 1993; Cutter, 1994). Scholarship in the field then expanded to include accounts of injustices in international contexts affecting various groups based on particular categories of difference (Martinez-Alier et al., 2016). Environmental justice scholars and activists have highlighted the ways environmental issues are also justice issues (Mohai et al., 2009), and how civil rights issues are also environmental (Bullard, 1990; Whyte, 2017). A primary contribution from scholarship in the field has been to define what counts, as Cutter et al. describe, as an "equity problem" (Cutter, 1994; Cutter, Holm, & Clark, 1996). And also, to develop analyses that account for a wider range of processes operating at multiple scales than equity assessments (Sikor et al., 2014).

In evaluating and studying justice, scholars increasingly view justice as a multi-dimensional phenomenon, comprised of distributional, procedural, and recognition-based dimensions (Sikor et al., 2014). The distributional dimension of justice is tied to the extent to which environmental harms and economic benefits are equitably distributed (Wenz, 1988; Cutter, 1994). Much of the early environmental justice scholarship served to document injustices as distributional, through quantitative analyses that demonstrated relationships between race, ethnicity, and class – accounting for the intersectionality of these categories (Crenshaw, 1991) – and disproportionate exposures to various forms of pollution (Wenz, 1988; Cutter, 1994). Accounts of environmental (in)justice subsequently expanded to include qualitative analyses of how political decisions are made, with scholars documenting injustice as a process, that in part reflects the extent to which groups can influence the procedures of environmental governance (Mohai et al., 2009). Analyses of the recognition dimension have accounted for justice as tied to the ways group interests are represented and social difference and diversity of knowledge is respected (Figueroa, 2001; Whyte, 2010; 2017; Martin et al., 2016). Recognition-based forms of justice offer a means to resist cultural domination (Sikor et al., 2014) or assimilation (He et al., 2021), and have been argued to be key for conservation planning in light of relationships between the recognition of

resource users' diverse needs and users' support for environmental governing initiatives (Martin et al., 2016). Some have argued that recognition is a precursor to other dimensions of justice, and as such, does not warrant distinct analytical attention (Rawls, 1993). The idea that recognition is necessary to advance justice is a complement to the idea that seeking recognition legitimizes the authority of those from whom recognition is sought (Coulthard, 2014), and as such, raises questions about which entities might be engaged to advance recognition-based forms of justice. Scholars have also considered justice as tied to capabilities, although this dimension is less examined and those who have engaged it have been critiqued for homogenous representations of disadvantaged groups (Svarstad & Benjaminsen, 2020).

The multi-dimensional environmental justice framework has been used to identify equity issues related to processes of both environmental governance (e.g., Sikor et al., 2014; Martin et al., 2016; He et al., 2021) and Indigenous development (e.g., Whyte, 2010; Sikor et al., 2014). In these studies, dimensions have also been referred to as criteria to apply when evaluating the effects of particular governing interventions (i.e., Whyte, 2010). Accounts of justice dimensions hold also potential significance for multi-disciplinary studies of environmental governance. Svarstad & Benjaminsen (2020), for example, argue that scholarship in the field of political ecology might benefit from explicit accounts of what amounts for justice to better identify policy solutions to advancing justice. Environmental justice scholarship and activism, by contrast, has been credited with prompting policy changes, including in the US, presidential mandates to evaluate environmental justice implications in federal policy decision making processes (Pulido et al., 2016). Yet, as has been noted, such commitments have fallen short of achieving meaningful change (Pulido et al., 2016; Pellow, 2018).

Theories that account for capitalist relations as marked by crises of overaccumulation can help us to understand why a policy initiative to advance justice can fail to work as intended. Crises of overaccumulation require those without capital to seek out new resources for investment, as market competition diminishes opportunities for profit (Cass, 1972; Harvey, 1990). The recurring nature of these crises helps explain why state groups may face pressure to support intensified forms of resource use, despite the potential injustices these forms perpetuate. The relatively fixed nature of capital invested in land (Varri, 1987), and the incentives that regional governing bodies face to govern in ways that ensure economic benefits from that land, can also perpetuate injustice. Additionally, the history of colonial practices whereby British and other colonizing nations sought land for agriculture, mining, and forestry, pushing Indigenous groups to rely on other resources, including fisheries, for subsistence, has affected the contemporary moment whereby those with pre-invested capital in land are likely non-Indigenous. These colonial histories, and the theories indicating that capital accumulation is always at stake, unless new forms of investment are made possible (Rasmussen & Lund, 2018), highlight the pressures state representatives can face to sanction exploitative forms of resource use. These theories help to explain the New Zealand government's support for dairy industry expansion upstream from Te Waihora. Accounts of justice as recognition-based, influenced by the ways groups' interests are represented (i.e., Martin et al., 2016; Whyte, 2017), illuminate why Māori representatives on regional councils did not contest these actions. To illustrate these dynamics, we first develop a framework for identifying various phenomena that have affected Indigenous fishery development at Te Waihora, with broader relevance to other national and international contexts.

3. Analytical framework

Over the last thirty years, nation-state leaders have recognized Indigenous rights through international agreements⁵ and national legislation (Merino, 2018). Studies in the wake of these recognition initiatives, however, have demonstrated multiple ways Indigenous groups remain unable to alter inequitable governing regimes, even after governments have recognized their rights (Anthias, 2018; Coulthard, 2014; Povinelli, 2002; Simpson, 2014). The issues raised in these studies can be categorized as factors affecting possibilities for distributional, procedural, and recognition-based forms of justice. Issues affecting distributional justice include the economic opportunities the rights allocated to Indigenous groups convey. Although engagement in capitalist markets can lead to increased inequality (Coulthard, 2014), efforts to “protect” Indigenous peoples from market-based forms of dispossession, through collective titling initiatives for example, can also inhibit Indigenous self-determination and a group’s abilities to use rights to address inequality (Li, 2010).

Procedural forms of justice can be compromised when governments that claim to recognize Indigenous governance rights nonetheless retain the authority to determine how or whether to incorporate Indigenous interests into policies and planning. For example, different governments in Australia (Povinelli 2002), North America (Arsenault et al., 2019; Coulthard, 2014; Simpson, 2014), and Latin America (Anthias, 2018; He et al., 2019; Merino, 2018), have in many cases recognized Indigenous rights only to the extent that recognition supports existing political projects, such as resource extraction from, and toxins loaded into, Indigenous territories (Anthias, 2018; Coulthard, 2014). Procedural justice, in contexts where Indigenous groups have rights, might also be constrained by “mis-matches” between a group’s rights and the governing processes that actually influence socio-environmental outcomes (Yandle, 2007). Indigenous groups’ abilities to influence governing processes, including the authorities ostensibly conveyed through co-governance arrangements, can be challenged by bureaucratic systems that lack effective mechanisms to incorporate Indigenous knowledge, or the practices these knowledges indicate are necessary to advance socio-environmental relations (Arsenault et al., 2019), into policy, planning, or co-governance initiatives (Nadasdy, 2004; Rahman et al., 2019).

Recognition-based forms of justice can be affected by processes that influence Indigenous groups’ abilities to mobilize political support for particular projects (Norman, 2019). Governing initiatives that recognize an Indigenous group’s rights as distinct from that of other marginalized groups, can obscure logics for political alliance building with other disadvantaged groups (Fraser, 1997; Hale, 2005). Additionally, stereotypes, including the “ecological Indian” motif (TallBear, 2000), can influence coalition-building. Historical representations of Indigenous peoples as ecological stewards have exposed Indigenous groups to outsiders’ views of what counts as environmental, to affect constraints on groups’ abilities to advance certain forms of development (Nadasdy, 1999; Deloria, 2002), demonstrating relationships between recognition-based and distributional forms of justice.

Studies of environmental governance highlight additional processes to consider in justice analyses. In particular, distributional

injustices can stem from the disproportionate and cumulative effects that downstream users experience due to upstream runoff (Pittman & Armitage, 2016). Possibilities for procedural justice may reflect a lack of alignment or coordination between land and sea-based governing jurisdictions (Pittman & Armitage, 2016). Procedural justice challenges can be magnified when upstream land is used for agriculture, as governing bodies have faced difficulties monitoring non-point source pollution and farms located in diffuse locations (Bodwitch et al., 2021; Ruhl, 2000). Recognition-based injustices include representations of landscapes, as well as peoples, in ways that justify governing initiatives that disproportionately affect certain groups (Cronon, 1996). Representations of landscapes as wilderness, absent of people, for example, have justified forced removal policies (Cronon, 1996) and made illicit local users’ livelihood activities (Peluso, 1993). Additionally, representations of ecological dynamics, such as pollution, as only warranting government responses if described scientifically and as occurring at certain thresholds, have inhibited local users’ abilities to “prove” environmental harms (Liboiron, 2021). Table 1 summarizes the factors shaping possibilities for distributional, procedural, and recognition-based forms of justice that structure our analysis of justice in the wake of rights recognition for Māori fishers at Te Waihora.

4. Case study: Developing an Indigenous eel fishery in a coastal lagoon, Te Waihora

4.1. Study site and context

In New Zealand, Indigenous rights claims surround the Treaty of Waitangi,⁶ a document signed in 1840 by representatives from the British colonial government and Māori leaders from almost all iwi (tribes). The Treaty established New Zealand as a colony of Britain and promised to Māori “full exclusive and undisturbed possession” of their “properties,” broadly defined, unless they agreed to relinquish this right to the British (Orange, 2004). After generally ignoring the Treaty’s principles for more than a century, in response to Māori protests, the New Zealand government began a process to settle outstanding Māori Treaty grievances in the mid-1970s. In settlements, Māori groups obtain assets and governance rights and, in return, extinguish their right to future claims and absolve the government, representing the British Crown, from any additional responsibility to amend the effects of particular Treaty violations (Mutu, 2019). As of 2020, the New Zealand government had entered into or completed Treaty settlement negotiations with almost all Māori iwi (Awawhiti, 2020). In 2011, the UN Special Rapporteur on the Rights of Indigenous Peoples, James Anaya, described New Zealand’s Indigenous reconciliation process as, “One of the most important examples in the world of an effort to address the historical and on-going grievances of an Indigenous peoples” (Anaya, 2011).

The New Zealand government’s transfer of assets to Māori took place in the context of a neoliberal transition, through which the government transferred state owned entities and services to the private sector, entered into a series of trade liberalization agreements, and eliminated subsidies for farmers (Larner, 1997). The government’s motivation for the transition has been tied to the entrance of Britain into the Commonwealth of Nations, the European Union’s predecessor, in 1973. This initiative removed New Zealand as a preferred trading partner and exposed New Zealand’s farmers to previously unseen competition, the effects of which the government attempted to mitigate by taking on debt (Le Heron & Roche, 1999). From 1974 to 1984, New Zealand’s national debt rose from eleven to ninety-five percent of the nation’s GDP (Evans et al.,

⁵ State leaders have supported Indigenous rights through commitments to the 2007 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the 2016 American Declaration on the Rights of Indigenous Peoples, and twenty-three ratifications of the 1991 Indigenous and Tribal Peoples Convention. Global recognition of Indigenous rights has also included the United Nations Permanent Forum on Indigenous issues (UNPFII), the Expert Mechanism on the Rights of Indigenous Peoples (EMRIP), and the UN Special Rapporteur on the Rights of Indigenous Peoples (UNSR).

⁶ Here, the “Treaty.”

Table 1
A framework for analyzing the outcomes of Indigenous rights recognition initiatives based on an environmental justice approach.

<i>To what extent do rights recognition efforts advance possibilities for (i.e., research questions):</i>	<i>Factors to consider include (but are not limited to) (i.e., hypotheses):</i>
Distributional justice, or a groups' ability to alter distributions of economic and environmental burdens and benefits	Economic assets; geographical location; biophysical dynamics
Procedural justice, or a groups' ability to influence existing governing processes	Groups' decision-making authorities in relation to state actors; rights granted in relation to environmental dynamics; processes for knowledge exchange and integration; inter-institutional forms of coordination
Recognition-based justice, or a groups' ability to influence public sentiment and political knowledge making	Representations of: Indigenous groups; landscapes; environmental dynamics; knowledge systems; economic development

1996). To reduce this debt, the 1984 Labour and subsequent governments privatized formerly state-controlled services and resources, including finance and fisheries, and eliminated agricultural subsidies (Le Heron & Roche, 1999). From 1984 to 1995, government actions reduced subsidies from thirty-four percent of gross agricultural revenues to almost zero (Larner & Craig, 2005; Le Heron & Roche, 1999). This transformation corresponded to economic losses for many in the previously subsidized sheep and beef industries, while those in the previously unsubsidized dairy sector remained profitable (Le Heron & Roche, 1999).

The dairy industry's lucrativeness further increased following the New Zealand government's signing of a free trade agreement with China in 2008, making New Zealand the first OECD country to do so (Kelsey, 1997). The timing of this agreement corresponded to the 2008 Chinese "milk scandal," whereby the chemical melamine, found in Chinese baby formula, led to infant deaths and a demand for imported dairy products from a growing population of middle-class consumers (Lewis, Le Heron, & Campbell, 2017). From 2002 to 2015, the total number of cows in New Zealand increased from approximately 3.8 million to 5 million and, thanks to intensified grazing practices, the average liters per herd and the average milk solids per hectare more than tripled (Ballantine and Davies-Colley, 2014). As of 2017, New Zealand controlled one third of the world's total dairy trade, and Fonterra (a multinational dairy cooperative owned by ~10,500 New Zealand farmers) was the world's largest milk exporter (Pawson et al., 2018). The dairy industry's environmental effects have been increasingly documented, however, the relationship between dairy expansion and Māori fishing rights has received less attention.

In addition to making possible the rise of the dairy industry, in certain instances, including fisheries, the New Zealand government's neoliberal initiatives also prompted negotiations to settle Indigenous grievance claims. In 1986, the New Zealand government attempted to implement one of the world's first comprehensive Individual Transferable Quota (ITQ) systems, a privatized fishery management regime (Sissenwine and Mace, 1992). In ITQ systems, which are used throughout the world, government agencies restrict the total amount of commercial fish take and allocate a tradable percentage of that take to private entities, usually fishers or processors (Bodwitch, 2017b). While ITQs have been praised for their potential to promote environmental stewardship and sustainability (Costello & Deacon, 2007; Costello et al., 2008; Chu, 2009) and economic efficiency (Costello & Deacon, 2007; Birkenbach et al., 2017), they have also been heavily criticized for efficiency coming at the cost of distributional equity (Eythórsson, 2000; Pinkerton, 2013; Edwards & Pinkerton, 2019).

In New Zealand, this ITQ initiative was met with resistance from Māori, who argued in court, successfully, that the government's presumed ownership of the nation's fishery resources, necessary to obtain quota, violated Treaty and aboriginal title rights (Boast, 1999). In the resulting 1992 Fisheries' Settlement⁷ Māori collectively obtained ten percent of the quota for all fish stocks already in the ITQ system, twenty percent of the quota for any new stocks added and fifty-percent ownership of the nation's largest fishing company (Boast, 1999). In 2004, iwi leaders reached a decision to divide the settlement quota based on population and coastline (Bodwitch, 2017b). Māori also received non-commercial, or so-called "customary"⁸ fisheries take and guardianship authorities, including those held by Tainui, as kaitiaki (customary guardian), at Te Waihora.

Importantly, the majority of Māori-owned commercial quota rights are leased to non-Māori companies who pay premiums for leases (Bodwitch, 2017b). At Te Waihora, however, eel quota is leased directly to Māori fishers. The case thus marks an exception to this trend, and as such, fishers' development efforts in the region are important contexts for examining barriers and opportunities for Māori to use commercial quota rights allocated in settlement to advance fishery development.

The New Zealand government has also transferred assets and governance rights to Māori through land-based settlement claims. In 1998, the New Zealand government implemented the Ngāi Tahu Land Claims Settlement Act, which included a transfer of co-governance and lakebed ownership rights to Te Waihora to the Ngāi Tahu iwi, as well as governance rights to other entities in the Ngāi Tahu rohe, or claimed territory (Fig. 1), and financial assets. These financial assets were designed, in part, to compensate for colonial-era land acquisitions that violated Treaty rights. These included the British Crown's assumption of the land upstream from Te Waihora, which was subsequently drained to make way for farmland (Waitangi Tribunal, 1992) (Fig. 2).

The government, represented by the regional council, continues the process of draining upstream land and Te Waihora itself, by maintaining ditches and, when lake levels reach a certain height, draining Te Waihora by cutting a channel in the rocky shoal between the lake and the ocean to release water. The co-governance agreement, established in 2011, was designed in part to allow Ngāi Tahu to weigh in on when lake openings would occur, to ensure openings aligned with fish harvest practices (Prystupa, 1998). In sum, the rights Māori fishers and the Ngāi Tahu tribal members, collectively, hold at Te Waihora include: commercial fishing quota rights, to eel as well as flounder and yellow eyed-mullet; co-governance rights (for details on process, see Prystupa, 1998); and also, non-majority seats on the regional and district councils charged with authorizing land and water use activities, including irrigation system expansion. In what follows, we analyze fishers' and other stakeholders' experiences attempting to implement these rights using the environmental justice framework presented in Table 1. Our aim was to illuminate why the New Zealand government's transfer of rights to Māori in New Zealand has yet to provide the means necessary to develop Te Waihora fisheries.

4.2. Distributional injustices

For Te Waihora fishers, following government recognition of their fishing rights, distributional injustices stem from the ways downstream fisheries disproportionately experience certain cumu-

⁷ Here, the "Settlement."

⁸ Some Māori fishers contest the characterization of their customary rights as non-commercial, arguing that exchange has always been necessary to allow their fishing practices to persist (Bodwitch, 2017b).

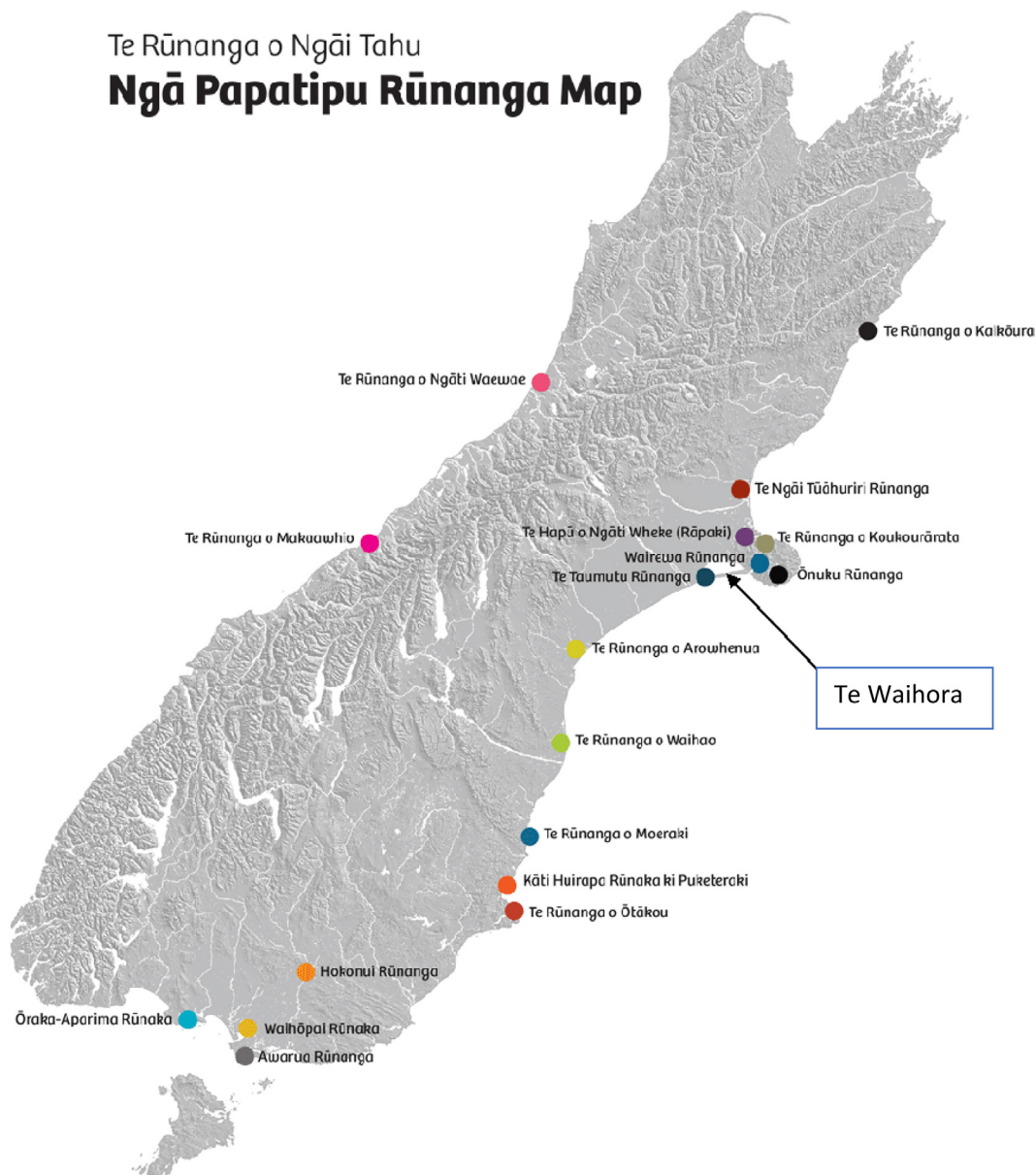


Fig. 1. Map of Ngāi Tahu tribal territory New Zealand's South Island with subtribes (rūnanga) and Te Waihora. Source: Te Rūnanga o Ngāi Tahu, <https://ngaitahu.iwi.nz/>.

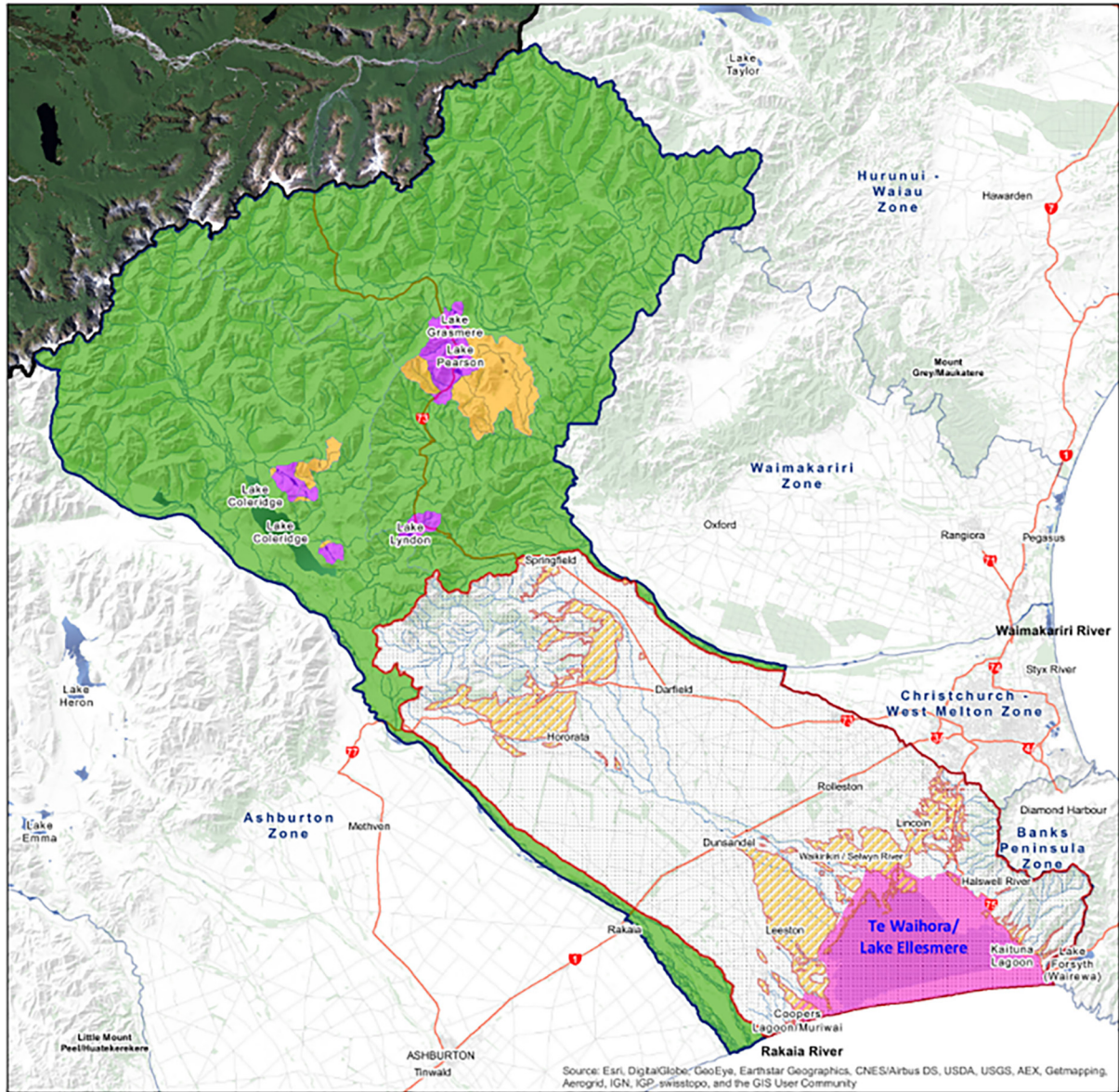
lative effects of an expanded and intensified dairy industry upstream. These effects include runoff from nitrate-rich livestock effluent as well as nitrogen and phosphate fertilizers, all of which increase the likelihood an aquatic system will enter a eutrophic state and exhibit algal blooms toxic to fish and humans (Foote et al., 2015; Hale et al., 2020). The rate of agricultural run-off is exacerbated by farming practices and government initiatives that have reduced soil filtration capacities (Ford et al., 2017). Upstream, cows' hooves pack soil more firmly than that of the sheep they replaced, and the Regional Council's authorization of irrigation system expansion (through processes amounting to procedural injustices, as discussed below), has streamlined the waterways that feed Te Waihora (Ford et al., 2017).

The structural dynamics motivating farmer decision making were illuminated by Peter Frey, a good friend of Roger Tainui's, who owned a farm in the Te Waihora watershed. Frey commented that many of his neighbors had replaced their sheep herds with dairy cows, irrigated and fertilized their pastures, and then sold their farms to corporate entities, who further increased herd sizes

and fertilizer use to increase outputs, and likely also, runoff. He noted that the decision to convert and sell was a struggle for some of his neighbors, who were sad to see the farm leave the family but did not want to be dairy farmers – milking multiple times a day – and did not want to pass up the lucrative opportunity the land use conversion offered. Frey himself did not convert his farm because he also fished the lake and saw effects of dairying on Te Waihora. He expressed immense frustration with the Regional Council's decision to allow dairy farm expansion, especially the council's approval of the land next to the irrigation channels for grazing, which increased, in Frey's account, the risk of fertilizers and cow effluent running into the lake.

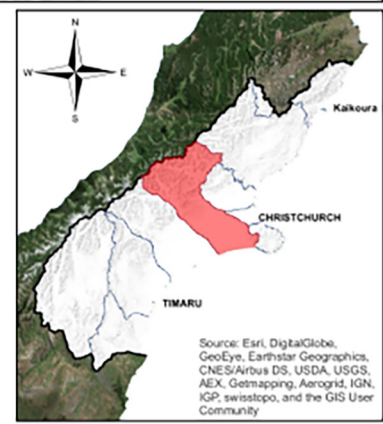
Frey's descriptions were corroborated by analyses of the relationships between dairy industry expansion and water quality, which identified how increased fertilizer and pesticide use in the Te Waihora catchment, combined with the effects of streamlined waterways for irrigation, had diminished water quality below national standards, giving rise to eutrophic conditions in the lake (Mitchell, 2017; Hu et al., 2019). Globally, habitat alterations have

Selwyn - Waihora Zone Canterbury Water Management Strategy



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Canterbury Regional Boundary	Nutrient Allocation Zones
CWMS Zone Boundary	Lake Zone
Selwyn/Waihora Catchment	At Risk
Phosphorus Sediment Risk Area	Meets Water Quality Outcomes
Te Waihora Cultural Landscape/ Values Management Area - Lake Area	Selwyn/Waihora



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

\\fileservices02\ManagedShares\GIS\Projects\WTR\2015_2016\CWMS_NAZ_151223\NAZ_CWMS_SW_A3P_151223.mxd

Fig. 2. Map of Te Waihora watershed. CWMS Zone Boundary refers to the region's irrigation scheme.

posed major threats to eel populations that live part or all of their life in inland waterways (Drouineau et al., 2018), as is the case for Te Waihora's diadromous short-finned population, and is likely also occurring here (Kearney et al., 2008). Dairy is the major land use in the area and is likely a far bigger driver of water quality concerns than other forms of land use change, including housing developments, due to the use of fertilizers and pesticides by farmers. Fishing pressure in the region is regulated by the ITQ system, and as such overfishing is unlikely to be the primary threat to eel population health.

Possibilities for distributional justices are also affected by the disproportionate economic costs Te Waihora fishers bear due to upstream land use change (for dairy or other processes). These costs are highlighted in the experiences of Māori father and son team, William and Richard Golden, who, in 2012, began leasing the Ngāi Tahu commercial fishing rights to Te Waihora. Shortly after obtaining fishing rights from the iwi, the Golden's began to employ locally, distribute fish to community members in need, provide customary guardians with routine updates on fish population health, and rebuild three previously abandoned huts in a lake-shore community (Bodwitch, 2017b). In 2016, the pair invested over \$500,000NZD (~\$333,000USD) and unquantified labor time to construct an export-certified processing facility to capture additional value from their catches. Former non-readers and writers, they enrolled in courses to help navigate extensive reporting requirements and became experts in the nation's fisheries policies. They set aside their generations' old fish-drying techniques and spent hours in business development and regulatory compliance classes. Yet, after one season processing for export, by 2018, the factory, by far the newest, most expensive building on the landscape, was no longer running, as eel fishing on the lake was no longer profitable.

The Golden's fishing operation also served as a form of social support for the broader Ngāi Tahu community. The Golden's routinely provided fish for large gatherings, including iwi events, and distributed fish to community members in need, within their hut community and beyond. These fish distribution practices provided a means through which younger community members could check on elderly individuals who had few social interactions otherwise. The Golden's described their voluntary fish distribution practices as an exercise of their mana, a term that has been loosely defined as power or authority, and which for them, denoted an investment strategy. As William Golden described, in reference to his having the right to fish Te Waihora eels, "I give, so I can take." As such, the Golden's were likely to continue to disseminate the benefits from their fishing operation to community members in ways non-Māori operations rarely do, provided there were fish.

Prior to the collapse of the eel fishery, the Golden's represented a model case of the ways iwi leaders could manage quota to support Māori fishers. Indeed, William Golden had described their operation as the "development story that has to succeed," a reflection of the ways his achievements might incentivize iwi leaders to lease quota to other Māori fishers, rather than non-Māori operations who can pay more upfront. Without eel, their case highlights how the reallocation of goods, in this case commercial fishing rights, on its own, can be insufficient as a mechanism to advance justice for Indigenous groups (see also Schlosberg, 2004). The Golden's experience also suggests that criteria beyond distribution are needed to more fully understand how justice can be advanced through processes to recognize Indigenous rights.

4.3. Procedural injustices

The inequitable distributions of environmental burdens and economic benefits that the Golden's and others at Te Waihora have experienced reflect procedural injustices arising from government

decisions made in contexts where Māori fishers' interests were not considered, and fishers had no veto authority. On multiple occasions during the course of this research, Tainui identified the processes he perceived to be driving fishery degradation. These included: (1) a lack of regulation of farmer's environmental practices, due in part to the longstanding notion that the nation's grass-fed agricultural industry had minimal environmental effects (Tall & Campbell, 2018); (2) the government's removal of agricultural subsidies; and (3) the lack of a capital gains tax, a phenomena Tainui believed, based on his longstanding relationships with upstream landowners, incentivized farmers to convert to dairy and expand their use of irrigation to realize increased value from future farm sales. Yes, the co-governance regime had processes for incorporating Tainui's ecological knowledge about fishery dynamics, including the authority he has to write fishing permits above daily take limits (if he deemed the fishery capable of handling such pressure). However, the regime did not include processes for responding to Tainui's knowledge of political-economic factors shaping upstream land use change. The primary strategy the co-governance group deployed was instead largely technical and reactionary (e.g., encouraging farmers to plant native plants along waterways to offset the rate at which dairy run-off entered waterways), the effects of which have also been difficult to evaluate (Lomax et al., 2015).

Procedural injustices also reflect challenges associated with the position of the lake's co-governance partnership within the confines of a governance regime Māori had limited authority to alter. This regime included processes for allocating funds for research related to the region as well as institutional processes affecting the types of knowledge deemed legitimate to trigger regulatory change. In 2017, the lead author attended a meeting for various rights and stakeholders associated with the lake to discuss the science needed to advance lake health. At the meeting, she asked about the possibility of including analyses of the factors motivating farmers' land use decisions. She was told that this type of analysis was beyond the scope of the co-governance group. The government, as co-governance partner, was more interested in strategies to clean up the lake, as opposed to strategies to curb dairy industry expansion upstream. The co-governing initiative had no authority to determine land use activities upstream, which were instead regulated by regional and district councils. These bodies were ostensibly, constitutionally mandated to adhere to Treaty principles, but as exemplified by Tainui's frustration with co-governance at Te Waihora, mechanisms to incorporate Treaty principles as they relate to Māori fishers' concerns, had yet to be established. "Treaty principles," as a directive for governing bodies to adhere to, has been an evolving concept that remains open to interpretation (Jackson, 2013).

Fishers' limited authority to influence governing processes was exacerbated by a mismatch between how fishers' knowledges are held and conveyed and how the knowledges deemed suitable for influencing decision making are typically presented. Over tea at Tainui's hut following the meeting to discuss research related to Te Waihora, Tainui remarked that he no longer attends such meetings because he gets too flustered and angry when attempting to convey his knowledge and experiences. The forums in which these meetings occurred, in this case, in a university conference room, did not align with the ways Tainui's knowledge had been presented to the lead researcher – over tea and cookies (or fish) in his hut, or walking around the yard, observing the Golden's activities next door, or in group discussions with neighboring fishers or farmers.

Challenges fishers faced in attempting to influence the governance processes that affect them were also evidenced in an attempt to scientifically "prove" fishers' oral accounts of fish population changes associated with dairy industry expansion. Fishers

had expressed to iwi leaders that the expanded presence of drainage ditches for irrigation were disrupting fish habitat. In part to address fishers' concerns, the co-governance group hired a freshwater ecologist to, among other tasks, document the presence of freshwater crayfish, or kōura, a culturally important species for Māori, in the irrigation ditches feeding into the lake. These ditches formerly existed as fish-harboring streams, at least according to Māori fishers.

Proof of species' presence could indicate ecological impacts of irrigation system expansion, which Regional Councils are mandated to consider when authorizing development activities, as per the nation's Resource Management Act (Jackson, 2016). Fishers' oral accounts had yet to be incorporated into regional council decision-making, and as fishers and iwi leaders indicated, were unlikely to be without scientific "proof." The stakes of this lack of recognition of fishers' oral accounts were magnified when the scientist's attempt to document kōura presence was ultimately unsuccessful, in large part due to the labor costs involved. Kōura are nocturnal, which meant expeditions to find them took place at night, in steep drains, requiring the scientist to submerge in often cold water.

The scientist, when interviewed, indicated that she felt she was letting the iwi down, with her inability to translate fishers' oral accounts into formats perceived as necessary to affect regulatory actions. She requested funds for additional trips, but none were made available, largely because these funds were already directed to (also, ultimately unsuccessful) efforts to clean up the lake. An environmental justice perspective suggests that strategies to rework how fishers' knowledge is accounted for in decision making, rather than (or at least in addition to) additional funds to translate these accounts into language suitable for non-Indigenous governing systems, are warranted to support Indigenous fishery development (i.e., Martin et al., 2016; Whyte, 2017). Relationships between how knowledges are represented and governance decisions are made can also be captured in analysis of recognition-based forms of justice. However, because these dynamics are accounted for in studies of procedural justice, we categorize them as such. In examining factors affecting justice as recognition-based, we thus focus on dynamics not obviously accounted for in studies of distributional or procedural justice, to, in turn, provide evidence to support calls to evaluate recognition as a distinct dimension (i.e., Sikor et al., 2014) or set of criteria (i.e., Whyte, 2017) to evaluate in justice analyses.

4.4. Recognition-based injustices

Evidence of recognition-based injustices are found in discursive representations that obscure the challenges fishers have faced as fish populations have declined. These include accounts of the dairy industry's economic benefits. Farming has long been viewed as an important contributor to the New Zealand economy (Gray & Le Heron, 2010). The Regional Council's comments that the dairy industry is too significant economically justified their decision not to adopt the steps necessary to advance water quality (see Introduction). This narrative does not appropriately account for the social and environmental externalities associated with dairy industry expansion, namely, the effects of land use change on downstream fish populations and the livelihoods of those dependent on the fishery.

Representations of Māori-state settlements as in Te Waihora and elsewhere, have also affected possibilities for recognition-based justice. Claims from government agencies that settlements have been a "full and final" resolution of Māori grievances (Mutu, 2019), coupled with the idea that Māori should, "move beyond grievance" (Sullivan, 2016; Waitangi Tribunal, 2011), have suggested that iwi, or tribal, leaders, in post-settlement New Zealand,

should generally refrain from blocking government actions. Frustration from certain sectors of the non-Māori public surrounding the transfer of state assets to Māori, coupled with the emotional and time commitments these processes involve, help to explain the government's motivation to ensure settlements indeed give rise to a new era of Māori-state relations. Yet, these ideas also amount to an "unfair," (i.e., Whyte, 2010), representation of the Māori-state partnership, given that government actions that arguably warrant grievance claims including actions in support of irrigation system development, have affected how Māori can use their rights to govern fisheries.

The effects of these misalignments between the ways national government agencies have presented the Māori-state partnership, and iwi leaders' and fishers' attempts to implement rights achieved in settlements, are evidenced in accounts from leaders who expressed a desire not to contest Regional Council decision-making due to the perceived likelihood that the regional government would not respond favorably to either their grievance claims or proposals for other forms of development. Regional Councils in rural regions were depicted by the leaders we interviewed as sympathetic to farmers. In the Te Waihora watershed, the national government played a key role in ensuring the Regional Council supported irrigation system expansion, specifically, with its replacement of the region's elected officials, some of whom were elected on pro-environment platforms, with appointed commissioners who "streamlined" the process to enable resource consent applications to go through (Thomas & Bond, 2016). Holding non-majority seats, iwi leaders required support from other council members to contest irrigation system expansion. National and regional governments are, in addition to operating as Treaty partners, also directed to represent the interests of all New Zealanders, some of whom have expressed frustration with the transfer of state-owned assets to Māori. On more than one occasion the lead author heard non-Māori, often farmers, lament in racist language their views of settlements as being "handouts" to Māori. Claims from government agencies that Māori should "move beyond grievance" likely perpetuated this sentiment.

Leaders also expressed disincentives to contest national, as well as regional council decision making, over concern that such contestations would jeopardize efforts to assert rights to advance fishery development elsewhere or land-based forms of development. In the post-settlement climate, leaders are tasked with the responsibility to manage their "full and final" settlement assets, which amount to far less than the total value of assets taken, to benefit future generations. Leaders have engaged in land-based forms of development that require council approval, creating incentives for leaders to work collaboratively with regional councils, rather than antagonistically. Given that the majority of New Zealanders (85%) are non-Māori, how Māori issues are represented holds potentially major implications for the ways iwi leaders, who represent non-majority seats on regional councils, can gain support to either contest distributional or procedural injustices or advance particular development activities.

5. Discussion & conclusion

Guided by an environmental justice framework, our analysis of why Te Waihora fishers remain unable to develop their fishery, and why iwi leaders have yet to act in ways to advance Te Waihora fishery development, illustrates why obtaining rights does not necessarily mean obtaining benefits. The New Zealand government's recognition of Te Waihora fisheries as partially Māori owned and governed did not convey to iwi leaders the political means necessary to govern these resources. As a result, the co-management partnership at Te Waihora has served as a back-end attempt to deal

with the effects of decisions made with little consideration of Te Waihora health. State-sanctioned governing initiatives related to the forums in which knowledge is asserted, how science is funded, and how development is permitted, have given rise to procedural and recognition-based injustices that influence how resource use occurs upstream, leading to distributional injustices. Māori fishers lack the authority and iwi leaders face disincentives to contest these processes.

This study builds understandings of the processes giving rise to justice, and state's roles in supporting or inhibiting these processes, in multiple ways. First, fishers', scientists', and leaders' accounts demonstrate that the achievement of justice is a multidimensional process, and that distributional, procedural, and recognition-based dimensions of justice can all affect authority to govern resource use and trade, even after rights are re-established. Distributional injustices experienced by Māori fishers relate to the effects of upstream land-use change, and indicate why reallocating rights to resources, on its own, does not necessarily amount to benefits, unless the governance of the biophysical dynamics that affect resource access is also addressed. This case therefore provides evidence in support of calls made globally to integrate governing systems across land-sea divides (Song et al., 2018b). This seemingly obvious point has not been taken into consideration in the majority of state-led fishery management regimes, including New Zealand's ITQ system, where governance decisions are primarily targeted at regulating fishers' actions and rarely the actions of land-based resource users.

Procedural injustices identified here demonstrate how practices of governance decision making can affect possibilities for justice. Challenges of participation related to an inability to contest regulatory decisions, due to limited evidence of impacts in forms amenable to governing partners, namely, reports from scientists or consultants. The forums in which knowledge was shared and the formats through which it was shared disadvantaged individuals for whom knowledge communication is an oral rather than written process, as is the case for the vast majority of Māori fishers interviewed. Difficulty translating Indigenous knowledge into forms amiable to bureaucratic governing systems have also been identified as limiting possibilities for Indigenous-state co-management partnerships elsewhere (e.g., Nadasdy, 2004). This study provides an additional illustration of such dynamics and also indicates how the processes through which science is funded can affect possibilities for participation in governing procedures. Limited capacity on the part of iwi to fund science meant that those in governance positions had limited data with which to contest outcomes.

This study also draws attention to how representations of particular groups can influence the political authority representatives of those groups hold. In doing so, it identifies a less well-documented means through which state officials' actions affect possibilities for recognition-based justice. The primary means through which states have been identified as influencing possibilities for recognition-based justice is through regulatory actions that fail to support particular culturally desired forms of resource use (i.e., Martin et al., 2016; Whyte, 2017). This case, we suggest, indicates that the specific claims state organizations make regarding Indigenous groups can also influence recognition-based justice. Here, these claims include assertions that Māori groups' grievances have been settled in a "full and final" manner, and that Māori should "move beyond grievance mode," in their partnership with the state (Waitangi Tribunal, 2011). To the extent these claims legitimize public resistance to any critiques Māori leaders might make of state actions, including actions that support upstream land development at the expense of downstream fisheries, these claims also serve to limit possibilities for procedural justice. Indeed, on more than one occasion during this course of this research, non-

Māori were heard complaining about news broadcasts describing Māori groups who were asking state organizations to change governing practices in specific ways. This case therefore highlights how the recognition dimension of justice can serve as a precursor to other forms while simultaneously demonstrating why recognition also warrants consideration as a distinct dimension (i.e., Sikor et al., 2014) or criterion (i.e., Whyte, 2017). An analysis of procedural justice that did not also consider issues around recognition, as might have occurred through an analysis of governance structures that did not also attend to discourse, would be insufficient to explain the political landscape shaping fishery development at Te Waihora.

In addition to building understanding of the processes affecting relationships between various dimensions of justice, this study also provides specific insights into actions to consider in efforts to advance environmental justice. In particular, diverse metrics for documenting ecological impacts, especially processes for recognizing oral knowledge, will help destabilize knowledge hierarchies to advance procedural- and recognition-based forms of justice, as well as culturally desired forms of development. For Indigenous fisheries, one way this can occur is through processes that account for fishers' knowledges in the contexts in which they are typically conveyed – on the land, in the boat, over meals. The provision of funds, or a koha (gift), to communities to support their abilities to host and feed visitors, will facilitate this form of knowledge communication. Alongside this, the sites where collaborative environmental governance occurs may need to extend not only beyond the land-sea divide (Song et al., 2018b), but also to spaces rarely considered as contexts for environmental governance. Specifically, regulations that influence upstream landowners' decision making, including tax policies and international trade agreements, can also hold implications for downstream environmental outcomes. In New Zealand, the national government's present commitment to reworking trade standards (New Zealand Foreign Affairs and Trade, 2020) presents one example of a forum in which it may be appropriate to incorporate analysis of social and ecological outcomes.

Of note, however, is that in New Zealand, ongoing actions that limit Māori development mean that the government may need to take radical actions to uphold its end of the Treaty partnership with Māori. The political disincentives that exist for leaders to contest regional and district council decision-making indicate that council seats alone are insufficient to empower leaders to advance justice for downstream fishers. National government or court actions are needed. Current initiatives that hold the potential to advance Te Waihora fishery development include the current Labour government's proposal to regulate farmers' nitrogen levels and the Ngāi Tahu iwi's claim to freshwater ownership, lodged with the High Court. If successful, these proposals will, respectively, put many farmers in the Te Waihora watershed out of business and grant Ngāi Tahu leaders greater control over water use at the land-sea interface. Policy strategies that bring actors together across the land and seascape to build shared understandings (Norman, 2019; Hale et al., 2020) will help mobilize political support for these and other fishery-related initiatives. Additionally, the Ngāi Tahu iwi is exploring strategies to support land-use transitions to non-polluting farming practices. These experiments will provide information on the technologies and practices that enable farmers to move into alternative regimes and should be supported financially and administratively as they are implemented.

In conclusion, this study demonstrates why on-going engagement with state governing bodies may be necessary to advance justice. Not only is disengagement hard because the state involves multiple organizations and operates as a series of relationships (i.e., Purucker, 2021), choosing not to engage is a less tenable option when upstream resource users are operating within capital-

ist economic systems, in which market competition creates incentives for resource exploitation. The trajectory of dairy expansion upstream from Te Waihora provides evidence that possibilities for capital accumulation are marked by crises that produce incentives for those with capital to lobby governments to support new opportunities for investment and potentially exploitative resource use practices. A crisis period in New Zealand followed Britain's entrance into the European Union, altering existing social orders. Advancement of free-trade initiatives provided opportunities for new market relations, and farmers engaged in new practices of dairy intensification to derive benefit from potential market gains. When market competition increased, as China entered into free trade agreements with other nations, another crisis period arose, followed by intensified forms of state-sanctioned resource use, to produce more dairy at lower cost. To increase the likelihood that government responses to future crises minimize environmental burdens, engagement with certain state organizations may be advantageous given the potential influence state organizations can have in reaching broad public audiences and delivering messages that influence public support for or against particular groups. That said, engaging with the state is time consuming, and being in "grievance mode" can have real material consequences. As a result, the responsibility to engage with state organizations to challenge injustice should not be viewed as solely held by those experiencing environmental injustices. Instead, analysts have an important role to play in identifying contradictions in state officials' justifications for governing actions to highlight logics for acting otherwise. The use of an environmental justice framework provides a mechanism through which such contradictions can be identified. While state authority may be legitimized by the settlement of Māori or other Indigenous groups' claims, additional identification of the ways the governments have fallen short of achieving the promises of rights reconciliation initiatives can serve to destabilize this authority until remedial efforts are adopted.

CRediT authorship contribution statement

Hekia Bodwitch: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. **Andrew M. Song:** Writing – review & editing. **Owen Temby:** Funding acquisition, Writing – review & editing. **John Reid:** Funding acquisition, Supervision. **Megan Bailey:** Writing – review & editing, Supervision. **Gordon M. Hickey:** Funding acquisition, Supervision, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The authors thank the interview participants who generously donated their valuable time, experience, and knowledge to the study. We also thank the constructive feedback of three anonymous reviewers. Additional thank you to Nancy Peluso's LandLab and Elizabeth Macpherson for comments on an earlier draft. This work was supported by the Social Sciences and Humanities Research Council of Canada [435-2014-0970] and the New Zealand Ministry for Business, Innovation, and Employment's Unlocking Export Prosperity Programme [LINX1701]. Hekia Bodwitch and Megan Bailey gratefully acknowledge support from a Canada First

Research Excellence Fund grant through the Ocean Frontier Institute as well as the Ocean Nexus Center at the University of Washington EarthLab. Andrew Song acknowledges the support of the Australian Government through an ARC Discovery Early Career Researcher Award [DE200100712]. Owen Temby acknowledges the support of the National Oceanic and Atmospheric Administration, Office of Education Educational Partnership Program award [NA16SEC4810009]. The study's contents are solely the responsibility of the award recipient and do not necessarily represent the official views of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration. Our funders had no involvement in: study design; the collection, analysis and interpretation of data; writing of the report; and the decision to submit the article for publication. This study received approval for research with human subjects from the University of California, Berkeley [2011-05-3221 and 2013-07-5445] and McGill University [174-0918].

References

- Anaya, J. (2011). *Report of the Special Rapporteur on the rights of Indigenous peoples: The situation of Māori people in New Zealand*. United Nations Human Rights Council. A/HRC/18/35/Add.4.
- Anthias, P. (2018). *Limits to decolonization: Indigeneity, territory, and hydrocarbon politics in the Bolivian Chaco*. Ithaca, NY: Cornell University Press.
- Arsenault, R., Bourassa, C., Diver, S., & Witham, A. (2019). Including indigenous knowledge systems in environmental assessments: Restructuring the process. *Global Environmental Politics*, 19(3), 120–132. https://doi.org/10.1162/glep_a.00519.
- Ballantine, D. J., & Davies-Colley, R. J. (2014). Water quality trends in New Zealand rivers: 1989–2009. *Environmental Monitoring and Assessment*, 186(3), 1939–1950. <https://doi.org/10.1007/s10661-013-3508-5>.
- Birkenbach, A. M., Kaczan, D. J., & Smith, M. D. (2017). Catch shares slow the race to fish. *Nature*, 544, 223–226. <https://doi.org/10.1038/nature21728>.
- Boast, R. P. (1999). Māori Fisheries 1986–1998: A Reflection. *Victoria University of Wellington Law Review*, 30(1), 111–134. <https://doi.org/10.26686/vuwlr.v30i1.6023>.
- Bodwitch, H. (2017a). Property is not sovereignty: Barriers to indigenous economic development in Aotearoa/New Zealand's fisheries. UC Berkeley. ProQuest ID: Bodwitch_berkeley_0028E_17400. Merritt ID: ark:/13030/m5tb63tj. Retrieved from <https://escholarship.org/uc/item/7hq099dr..>
- Bodwitch, H. (2017b). Challenges for New Zealand's individual transferable quota system: Processor consolidation, fisher exclusion, & Māori quota rights. *Marine Policy*, 80, 88–95. <https://doi.org/10.1016/j.marpol.2016.11.030>.
- Bodwitch, H., Polson, M., Biber, E., Hickey, G. M., & Butsic, V. (2021). Why comply? Farmer motivations and barriers in cannabis agriculture. *Journal of Rural Studies*, 86, 155–170. <https://doi.org/10.1016/j.jrurstud.2021.05.006>.
- Bullard, R. D. (1990). *Dumping in Dixie: Race, class, and environmental quality*. Westview Press.
- Čapek, S. M. (1993). The "Environmental Justice" frame: A conceptual discussion and an application. *Social Problems*, 40(1), 5–24. <https://doi.org/10.2307/3097023>.
- Cass, D. (1972). On capital overaccumulation in the aggregative, neoclassical model of economic growth: A complete characterization. *Journal of Economic Theory*, 4(2), 200–223. [https://doi.org/10.1016/0022-0531\(72\)90149-4](https://doi.org/10.1016/0022-0531(72)90149-4).
- Chu, C. (2009). Thirty years later: The global growth of ITQs and their influence on stock status in marine fisheries. *Fish and Fisheries*, 10(2), 217–230. <https://doi.org/10.1111/j.1467-2979.2008.00313.x>.
- Costello, C., & Deacon, R. (2007). The efficiency gains from fully delineating rights in an ITQ fishery. *Marine Resource Economics*, 22, 347–361 <http://www.jstor.org/stable/42629566>.
- Costello, C., Gaines, S. D., & Lynham, J. (2008). Can catch shares prevent fisheries collapse?. *Science*, 321(September), 1678–1681. <https://doi.org/10.1126/science.1159478>.
- Coulthard, G. S. (2014). *Red skin, white masks: Rejecting the colonial politics of recognition*. Minneapolis: University of Minnesota Press.
- Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, 43(6), 1241–1299. <https://doi.org/10.2307/1229039>.
- Cronon, W. (1996). The trouble with wilderness: Or, getting back to the wrong nature. *Environmental History*, 1(1), 7–28 <http://www.jstor.org/stable/3985059>.
- Cutter, S. L. (1994). Race, class and environmental justice. *Progress in Human Geography*, 19(1), 111–122. <https://doi.org/10.1177/030913259501900111>.
- Cutter, S. L., Holm, J. D., & Clark, L. (1996). The role of geographic scale in monitoring environmental justice. *Risk Analysis*, 16(4), 517–526. <https://doi.org/10.1111/j.1539-6924.1996.tb01097.x>.
- De Alessi, M. (2012). The political economy of fishing rights and claims: The Māori experience in New Zealand. *Journal of Agrarian Change*, 12(July), 390–412. <https://doi.org/10.1111/j.1471-0366.2011.00346.x>.

- Dekker, W., Casselman, J. M., Cairns, D. K., Tsukamoto, K., Jellyman, D., & Lickers, H. (2003). Worldwide decline of eel resources necessitates immediate action. Québec Declaration of Concern. *Fisheries*, 28(12), 28–30 <https://core.ac.uk/download/pdf/77127986.pdf>.
- Deloria, S. (2002). Commentary on Nation-Building: The future of Indian nations. *Arizona State Law Review*, 34(55), 55–62.
- Drouineau, H., Durif, C., Castonguay, M., Mateo, M., Rochard, E., Verreault, G., ... Lambert, P. (2018). Freshwater eels: A symbol of the effects of global change. *Fish and Fisheries*, 19, 903–931. <https://doi.org/10.1111/faf.12300>.
- Edwards, D. N., & Pinkerton, E. (2019). The hidden role of processors in an individual transferable quota fishery. *Ecology and Society*, 24(3). <https://doi.org/10.5751/ES-11148-240336>.
- Eythórsson, E. (2000). A decade of ITQ-management in Icelandic Fisheries: Consolidation without consensus. *Marine Policy*, 24, 483–492. [https://doi.org/10.1016/S0308-597X\(00\)00021-X](https://doi.org/10.1016/S0308-597X(00)00021-X).
- Evans, L., Grimes, A., Wilkinson, B., & Teece, D. (1996). Economic reform in New Zealand 1984–1995: The pursuit of efficiency. *Journal of Economic Literature*, 34(4), 1856–1902 <https://www.jstor.org/stable/2729596>.
- Fanon, F. (1965). *A dying colonialism*. New York, NY: Grove Press.
- Figueroa, R. M. (2001). Other faces: Latinos and environmental justice. In Bill E. Lawson & Laura Westra (Eds.), *Faces of environmental racism: Confronting issues of global justice* (pp. 167–186). Boston: Rowman and Littlefield Publishers.
- Foot, K. J., Joy, M. K., & Death, R. G. (2015). New Zealand dairy farming: Milking our environment for all its worth. *Environmental Management*, 56, 709–720. <https://doi.org/10.1007/s00267-015-0517-x>.
- Ford, D. E., Hughey, K. F. D., & Taylor, K. J. W. (2017). Te Waihora/Lake Ellesmere State of the Lake 2017. Waihora Ellesmere Trust Technical Report No.3. Retrieved from <http://www.wet.org.nz/State-of-the-lake-report-final.pdf>. Accessed: 7 Sept 2020.
- Fraser, N. (1997). *Justice interruptus: Critical reflections on the postsocialist condition*. London: Routledge.
- Gray, S., & Le Heron, R. (2010). Globalising New Zealand: Fonterra Co-operative Group, and shaping the future. *New Zealand Geographer*, 66(1), 1–13. <https://doi.org/10.1111/j.1745-7939.2010.01173.x>.
- Hale, C. R. (2005). Neoliberal multiculturalism: The remaking of cultural rights and racial dominance in Central America. *Political and Legal Anthropology Review*, 28(1), 10–28. <https://doi.org/10.1525/pol.2005.28.1.10>.
- Hale, J., Legun, K., & Campbell, H. (2020). Accounting for accountabilities: Examining the relationships between farm nutrient measurement and collaborative water governance dynamics in Canterbury. New Zealand. *Journal of Rural Studies*. <https://doi.org/10.1016/j.jrurstud.2019.07.006>.
- Harvey, D. (1990). *The condition of postmodernity*. Malden, MA: Blackwell.
- He, Y., Baldvizio, J. P., Agrawal, A., Candaguira, V., & Perfecto, I. (2019). Guardians of the forests: How should an indigenous community in Eastern Bolivia defend their land and forests under increasing political and economic pressures?. *Case Studies in the Environment*, 1–14. <https://doi.org/10.1525/cse.2019.sc.946307>.
- He, J., Martin, A., Lang, R., & Gross-camp, N. (2021). Explaining success on community forestry through a lens of environmental justice: Local justice norms and practices in China. *World Development*, 142. <https://doi.org/10.1016/j.worlddev.2021.105450>.
- Huber, M. (2019). *Ecological politics for the working class*. *Catalyst*, 3(1), 7–45. <https://catalyst-journal.com/vol3/no1/ecological-politics-for-the-working-class>.
- Hu, Q., Turnbull, M., & Hawes, I. (2019). Estimated light compensation depth explains growth of *Stuckenia pectinata* in Te Waihora. *Aquatic Botany*, 156(May), 57–64. <https://doi.org/10.1016/j.aquabot.2019.04.005>.
- Jackson, A.-M. (2013). A discursive analysis of Rangatiratanga in a Māori fisheries context. *MAI Review*, 1(2), 3–17.
- Jackson, J. (2016). *Predictions in an uncertain world - Assessing effects under the Resource Management Act 1991*. New Zealand Law Society Continuing Legal Education Programme <https://www.environmentcourt.govt.nz/assets/Documents/Publications/NZLS-Predictions-in-an-Uncertain-World-FINAL.pdf>.
- Jessop, B. (2016). *The state: Past, present, future*. Cambridge, UK: Polity Press.
- Kearney, M., Jeffs, A., & Lee, P. (2008). Effects of salinity and temperature on the growth and survival of New Zealand shortfin, *Anguilla australis*, and longfin, *A. dieffenbachii*, glass eels. *Aquaculture Research*, 39, 1769–1777. <https://doi.org/10.1111/j.1365-2109.2008.02053.x>.
- Kelsey, J. (1997). *The New Zealand experiment: A world model for structural adjustment?*. Wellington, New Zealand: Bridget Williams Books.
- Larner, W. (1997). "A Means to an End": Neoliberalism and state processes in New Zealand. *Studies in Political Economy*, 52, 7–38. <https://doi.org/10.1080/19187033.1997.11675320>.
- Larner, W., & Craig, D. (2005). After neoliberalism? Community Activism and Local Partnerships in Aotearoa New Zealand. *Antipode*, 37(3), 402–424. <https://doi.org/10.1111/j.0066-4812.2005.00504.x>.
- Le Heron, R., & Roche, M. (1999). Rapid deregulation, agricultural restructuring, and the reimagining of agriculture in New Zealand. *Rural Sociology*, 64(2), 203–218. <https://doi.org/10.1111/j.1549-0831.1999.tb00014.x>.
- Li, T. M. (2010). Indigeneity, capitalism, and the management of dispossession. *Current Anthropology*, 51(3), 385–414. <https://doi.org/10.1086/651942>.
- Liboiron, M. (2021). *Pollution is colonialism*. Durham and London: Duke University Press.
- Llamazares, Á. F., Garteizgoeascoa, M., Basu, N., Brondizio, E. S., Cabeza, M., Alier, J. M., ... García, V. R. (2020). Critical Review A State - of - the - Art review of indigenous peoples and environmental pollution. *Integrated Environmental Assessment and Management*, 16(3), 324–341. <https://doi.org/10.1002/ieam.4239>.
- Lewis, N., Le Heron, R., & Campbell, H. 2017. The mouse that died: Stabilizing economic practices in free trade space. In: *Assembling neoliberalism: Expertise, practices, subjects*, V. Higgins & W. Larner (Eds.), (pp. 151–170).
- Lomax, A. J., Johnston, K. A., Hughey, K. F. D., & Taylor, K. J. W. (eds). (2015). Te Waihora/Lake Ellesmere State of the Lake 2015. In Waihora Ellesmere Trust Technical Report No.2. Retrieved from <http://www.wet.org.nz/wp-content/uploads/2015/10/2015-State-of-the-Lake-FULL-REPORT.pdf>. Accessed: 9 September 2020.
- Martin, A., Coolsaet, B., Corbera, E., Dawson, N. M., Fraser, J. A., Lehmann, I., & Rodriguez, I. (2016). Justice and conservation: The need to incorporate recognition. *Biological Conservation*, 197(2016), 254–261. <https://doi.org/10.1016/j.biocon.2016.03.021>.
- Martinez-Alier, J., Temper, L., Bene, D. D., Scheidel, A., Temper, L., Bene, D. D., ... Bene, D. D. (2016). Is there a global environmental justice movement?. *The Journal of Peasant Studies*, 43(3), 731–755. <https://doi.org/10.1080/03066150.2016.1141198>.
- Merino, R. (2018). Re-politicizing participation or reframing environmental governance? Beyond Indigenous' prior consultation and citizen participation. *World Development*, 111, 75–83. <https://doi.org/10.1016/j.worlddev.2018.06.025>.
- Mitchell, C. (2017). Improving lake to national standard would have 'severe social and economic' consequences. Stuff. Retrieved from: <https://www.stuff.co.nz/environment/95610302/improving-lake-to-national-standard-would-have-severe-social-and-economic-consequences>. Accessed 5 April 2022.
- Mohai, P., Pellow, D., & Roberts, J. T. (2009). Environmental justice. *Annual Review of Environment and Resources*, 34(405–30), 405–430. <https://doi.org/10.1146/annurev-environ-082508-094348>.
- Mutu, M. (2019). The treaty claims settlement process in New Zealand and its impact on Māori. *Land*, 152, 1–18. <https://doi.org/10.3390/land8100152>.
- Nadasdy, P. (1999). The politics of TEK: And the "Integration" of knowledge. *Arctic Anthropology*, 36(1), 1–18 <https://www.jstor.org/stable/40316502>.
- Nadasdy, P. (2004). *Hunters and bureaucrats: Power, knowledge, and aboriginal-state relations in the Southwest Yukon*. Vancouver, BC and Toronto, ON: UBC Press.
- New Zealand Foreign Affairs and Trade. (2020). Trade for All Agenda. Retrieved from: <https://www.mfat.govt.nz/Trade/New Zealand-trade-policy/trade-for-all-agenda/>. Accessed: 9 September 2020.
- Norman, E. S. (2019). Finding common ground: Negotiating downstream rights to harvest with upstream responsibilities to protect – Dairies, berries, and shellfish in the Salish Sea. *Global Environmental Politics*, 19(2), 77–97. https://doi.org/10.1162/glep_a_00516.
- Orange, C. (2004). *An illustrated history of the Treaty of Waitangi*. Wellington, New Zealand: Bridget Williams Books Ltd.
- Pawson, E., le Hero, R., Campbell, H., Henry, M., Heron, E. L., Legun, K., Lewis, N., Perkins, H. C., Roche, M., & Rosin, C. (2018). *The new biological economy: How New Zealanders are creating value from the land*. Auckland: Auckland University Press.
- Pellow, D. N. (2018). *What is critical environmental justice?*. Cambridge, UK: Polity Press. <https://doi.org/10.1007/s41130-018-0078-5>.
- Peluso, N. L. (1993). Coercing conservation? The politics of state resource control. *Global Environmental Change*, 3(2), 199–217. [https://doi.org/10.1016/0959-3780\(93\)90006-7](https://doi.org/10.1016/0959-3780(93)90006-7).
- Pinkerton, E. (2013). Alternatives to ITQs in equity-efficiency-effectiveness trade-offs: How the lay-up system spread effort in the BC halibut fishery. *Marine Policy*, 42, 5–13. <https://doi.org/10.1016/j.marpol.2013.01.010>.
- Pittman, J., & Armitage, D. (2016). Governance across the land-sea interface: A systematic review. *Environmental Science and Policy*, 64, 9–17. <https://doi.org/10.1016/j.envsci.2016.05.022>.
- Povinelli, E. (2002). *The cunning of recognition: Indigenous alterities and the making of Australian multiculturalism*. Durham, NC: Duke University Press.
- Purucker, D. (2021). Critical environmental justice and the state: A critique of pellow. *Environmental Sociology*, 1–11. <https://doi.org/10.1080/23251042.2021.1878575>.
- Prystupa, M. V. (1998). Barriers and strategies to the development of co-management regimes in New Zealand: The case of Te Waihora. *Human Organization*, 57(2), 134–144. <https://doi.org/10.17730/humo.57.2.113m215970882016>.
- Pulido, L., Kohl, E., & Cotton, N.-M. (2016). State regulation and environmental justice: The need for strategy reassessment. *Capitalism Nature Socialism*, 27(2), 12–31. <https://doi.org/10.1080/10455752.2016.1146782>.
- Rahman, H. T., Po, J. Y., Saint Ville, A. S., Brunet, N. D., Clare, S. M., Darling, S., & Hickey, G. M. (2019). Legitimacy of different knowledge types in natural resource governance and their functions in inter-institutional gaps. *Society & Natural Resources*, 32(12), 1344–1363. <https://doi.org/10.1080/08941920.2019.1658140>.
- Rasmussen, M. B., & Lund, C. (2018). Reconfiguring Frontier Spaces: The territorialization of resource control. *World Development*, 101, 388–399. <https://doi.org/10.1016/j.worlddev.2017.01.018>.
- Rata, E. (2011). Encircling the commons: Neoliberal capitalism in New Zealand since 2000. *Anthropological Theory*, 11(3), 327–353. <https://doi.org/10.1177/1463499611416724>.
- Rawls, J. (1993). *Political liberalism*. New York: Columbia University Press.
- Ruhl, J. B. (2000). Farms, their environmental harms, and environmental law. *Ecology Law Quarterly*, 27(2), 263–350. <https://doi.org/10.15779/Z38C555>.
- Schlossberg, D. (2004). Reconceiving environmental justice: Global movements and political theories. *Environmental Politics*, 13(3), 517–540. <https://doi.org/10.1080/0964401042000229025>.

- Sikor, T., Martin, A., Fisher, J., & He, J. (2014). Toward an empirical analysis of justice in ecosystem governance. *Conservation Letters*, 7(6), 524–532. <https://doi.org/10.1111/conl.12142>.
- Simpson, A. (2014). *Mohawk interruptus: Political life across the borders of settler states*. Durham, NC: Duke University Press.
- Sissenwine, M. P., & Mace, P. M. (1992). ITQs in New Zealand: The era of fixed quota in perpetuity. *Fishery Bulletin*, 90, 147–160. <https://spo.nmfs.noaa.gov/sites/default/files/pdf-content/1992/901/sissenwine.pdf>.
- Song, A. M., Bodwitch, H., & Scholtens, J. (2018). Why marginality persists in a governable fishery—the case of New Zealand. *Maritime Studies*, 17(3), 285–293. <https://doi.org/10.1007/s40152-018-0121-9>.
- Song, A. M., Bower, S. D., Onyango, P., Cooke, S. J., Akintola, S. L., Baer, J., Gurung, T. B., Hettiarachchi, M., Islam, M., Mhlanga, W., Nunan, F., Salmi, P., Singh, V., Tezzo, X., Funge-Smith, S. J., Nayak, P. K., & Chuenpagdee, R. (2018). Intersectorality in the governance of inland fisheries. *Ecology and Society*, 23(2), 17. <https://doi.org/10.5751/ES-10076-230217>.
- Sullivan, A. (2016). *The politics of reconciliation in New Zealand*. *Political Science*, 68(2), 124–142. <https://doi.org/10.1177/0032318716676290>.
- Tall, I., & Campbell, H. (2018). The “dirty dairying” campaign in New Zealand: Constructing problems and assembling responses. In J. Forney, C. Rosin, & H. Campbell (Eds.), *Agri-environmental governance as an assemblage* (pp. 161–176). London: Routledge.
- TallBear, K. (2000). Shepard Krech's The ecological Indian: One Indian's perspective. *The Ecological Indian Review*, 1–5.
- Tauli-Corpuz, V., Alcorn, J., Molnar, A., Healy, C., & Barrow, E. (2020). Cornered by PAs: Adopting rights-based approaches to enable cost-effective conservation and climate action. *World Development*, 130, 104923. <https://doi.org/10.1016/j.worlddev.2020.104923>.
- Svarstad, H., & Benjaminsen, T. A. (2020). Reading radical environmental justice through a political ecology lens. *Geoforum*, 108, 1–11. <https://doi.org/10.1016/j.geoforum.2019.11.007>.
- Thelen, T., Vettters, L., & von Benda-Beckmann, K. (2014). Introduction to stategraphy: Toward a relational anthropology of the state. *Social Analysis*, 58(3), 1–20. <https://doi.org/10.3167/sa.2014.580302>.
- Thomas, A. C., & Bond, S. (2016). Reregulating for freshwater enclosure: A state of exception in Canterbury, Aotearoa New Zealand. *Antipode*, 48(3), 770–789. <https://doi.org/10.1111/anti.12214>.
- Varri, P. (1987). Fixed Capital. In S. Durlauf & L. Blume (Eds.), *The New Palgrave Dictionary of Economics*. London: Palgrave Macmillan.
- Te Awahititi, Office for Māori Crown Relations, New Zealand Government. (2020). Te Kāhui Whakataū (Treaty Settlements) 12 Month Progress Report 1 July 2019 – 30 June 2020. <https://www.govt.nz/assets/Documents/OTS/Quarterly-reports/Quarterly-report-to-30-Jun-2020.pdf>. Accessed: 5 April 2022..
- Waitangi Tribunal, New Zealand Government. (2011). Time to move beyond grievance in treaty relationship. Press Release. Retrieved from: <https://www.scoop.co.nz/Zealand/stories/PO1107/S00017/time-to-move-beyond-grievance-in-treaty-relationship.htm>. Accessed: 9 September 2020..
- Waitangi Tribunal & New Zealand (1992). *The Ngāi Tahu Sea Fisheries Report*. Wai 27. Wellington, New Zealand: Brooker and Friend.
- Wenz, P. S. (1988). *Environmental justice*. Albany: State University of New York Press.
- Whyte, K. P. (2010). An environmental justice framework for indigenous tourism. *Environmental Philosophy*, 7(2), 75–92.
- Whyte, K. (2017). The recognition paradigm of environmental injustice. In R. Holifield, J. Chakraborty, & G. Walker (Eds.), *The Routledge handbook of environmental justice* (pp. 113–123). Routledge.
- Yandle, T. (2007). Understanding the consequences of property rights mismatches: A case study of New Zealand's marine resources. *Ecology and Society*, 12(2) <http://www.ecologyandsociety.org/vol12/iss2/art27/>.