

SPECIAL ISSUE PAPER

River conversations: A confluence of lessons and emergence from the Taieri River and the Nechako River

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Abstract

Drawing on ongoing patterns of learning and relationship, this paper offers a reflection and acknowledgement on the notable influence of two rivers and their role as respected and highly valued “eco-social elders”: The Taieri River in Otago, New Zealand, and the Nechako River in northern British Columbia, Canada. The paper is motivated by the question: “*If a river has ‘voice’, what can be learned from the emergence arising from rivers ‘in conversation’?*”. At the heart of the reflection are the themes of confluence and emergence—ways in which we grasp the coming together of things, especially when that combination is more than the sum of their parts. The paper aims to explore a “conversation” between the river teachings of the Taieri River and the Nechako River, identifying examples of patterns and connections between distinct river “voices,” and how these may contribute to emergence and ongoing conversations among different rivers and their teachings. The paper commences with an introduction to both rivers, identifying points of direct comparison and contrast, then moving to explore themes of confluence, weaving and emergence, combining ecological, metaphorical, and personal perspectives. The conversation then progresses downstream to river–ocean relationships, reflecting on rivers as eco-social elders that inspire conversations, provide a sense of home, and offer a point of reference to consider the wider influence on rivers and waterways on the health of diverse species within catchments and across the planet.

KEYWORDS

catchment, confluence, eco-social, emergence, Nechako River, river, Taieri River, watershed

1 | INTRODUCTION

The influence of rivers, landscapes, and living systems on writing and other creative and scholarly efforts is well recognized (Cunningham, 2019; Parkes, 2004). This paper offers a reflection and acknowledgement on the notable influence of two rivers on the ideas, themes, and perspectives that have characterized my development as an educator, scholar, professor, and (global) citizen. At the heart of the

reflection are the themes of confluence and emergence—ways in which we grasp the coming together of things, especially when that combination is more than the sum of their parts. Drawing on patterns of learning and relationship over several decades, this written “offering” aims to recognize, pay tribute, and honor what I have come to think of and describe as two highly respected “eco-social elders”: The Taieri River in Otago, New Zealand, and the Nechako River in northern British Columbia, Canada.

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In offering this reflection, I acknowledge my role as a humble visitor on lands and territories through which these two rivers flow, and which comprise their “catchments”, or areas drained by these rivers and their tributaries. The Taieri River flows through the *rohe* (territory) of the Kāi Tahu *iwi* (tribe) of Te Wai Pounamu (the South Island) of Aotearoa/NZ. The Nechako watershed flows through the territories of 15 First Nations who are mostly part of the Dakelh-speaking peoples continuing to live in unceded territory in north central British Columbia, Canada. As a woman whose heritage is of English, Irish, and Scottish descent, born in Aotearoa/NZ in the east coast town of Timaru in the lands of Kāi Tahu, I have also been fortunate to (re)orient to, visit and occasionally live at Taieri Mouth (where the Taieri River meets the Pacific Ocean), for the five decades since I was born. For the past decade, I have also been privileged to mostly live, work, learn, play, love, mourn, and be filled with wonder, within the unceded territory of the Lheidli T'enneh, which, in Dakelh language, describes “the people of the confluence of the two rivers” (Lheidli T'enneh First Nation, 2021), referring to the Nechako and the Lhtakoh (or Fraser) Rivers. For over two decades, living mostly in these two territories, my research, teaching, and writing has been deeply informed by the connections between rivers (including catchments and watersheds), and the health and well-being of humans and other species (Bunch et al., 2014; Gislason, Morgan, Mitchell-Foster, & Parkes, 2018; Jenkins et al., 2018; Parkes, 2003a; Parkes, 2016a; Parkes et al., 2010; Parkes & Horwitz, 2009; Parkes & Panelli, 2001; Picketts, Déry, Parkes, Sharma, & Matthews, 2020). For the last decade, I have increasingly acknowledged rivers as important teachers, but it is only recently that I have overtly started to acknowledge rivers as “eco-social elders” (Parkes, 2020a, 2020b). This paper is, therefore, in part, a retrospective collation and acknowledgement of some of the teachings and lessons from two of these elders.

Although many of the ideas explored in this paper could be attributed to lessons learned from either the Taieri River or the Nechako River, the patterns and insights shared here draw on the influence of both. A question that has guided and woven through these ideas is: “*If a river has ‘voice’, what can be learned from the emergence arising from rivers ‘in conversation’?*” As a contribution to a Special issue on “Voicing Rivers” (Wooltorton, Poelina, Guimond, & Horwitz, 2021), this paper, therefore, has a dual purpose. The primary aim is to explore a “conversation” between river teachings with a particular interest in the lessons and insight possible from a confluence of these teachings, in the spirit of a “junction of two rivers” (Oxford Dictionary, 2009). A second, related, aim is to identify examples of patterns and connections between distinct river “voices,” and how these may contribute to conversations among rivers and their teachings. To achieve this, the conversation begins with introductions, identifying points of direct comparison and contrast between the two rivers, and then moving to explore themes of confluence, weaving, and emergence, combining ecological, metaphorical, and personal perspectives. The conversation progresses downstream to river–ocean relationships, reflecting on rivers as eco-social elders that are connected not only in the ways they inspire conversation, but also as homes and points of reference for diverse species, across the planet.

1.1 | Toward river conversations

All rivers have their own emergent and unfolding relationships with the past, present, and future of our planetary home, and these specifics are instructive to consider both separately and together. Describing these characteristics as a “conversation” among river teachings as I have experienced them also helps to avoid the daunting task of speaking “for” a river, or attempting to encapsulate all the relationships and lessons any river offers. The nature of this unfolding relationship is explored throughout the paper, reflecting an ongoing personal and professional response to the ontological challenge eloquently described by Redvers that “we cannot solve complex problems from the same worldview that created them in the first place, as it will continue to perpetuate a disconnect between us and the planet as ‘relatives’.” (2021, p. 112). Presenting lessons as emerging from conversations with eco-social river elders also reflects a posture of humility, where any learning is linked to un-learning and re-learning about the nature of being: in relation to other species and the living systems all life depends on. In this context, glimpses of insight are questioned and revisited, part of what Wahl (2016) describes as “being in a process and seeing in relationships” and as an exploration and potential expression of Thich Nhat Hanh’s powerful evocation of “interbeing” (Hanh, 1988). Opening the potential for ongoing river conversations begins, therefore, with an introduction to, and my relationship with, both the Taieri and Nechako as eco-social river elders.

First to introductions: the basis for a conversation. There are many ways to introduce both of these eco-social river elders and their potential to fuel conversation. The approach used here is, mostly, a physical description, that could support “meeting” a river through a visual depiction, such as those in Figure 1.

The Taieri river and its tributaries drain a catchment of 5,650 km² in Otago, the south-east of the South Island of New Zealand (Figure 1a) making up 21% of the land area of Aotearoa/NZ. The catchment falls within the tribal territory of the Kāi Tahu *iwi*, with ongoing travel, harvest, and culture–environment connections “*ki uta ki tai*” (from the mountains to the sea) (Panelli & Tipa, 2007) extending across several *rūnanga* including Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki, and Te Rūnanga o Ōtākou. At 288 km long, the Taieri is the fourth longest river in Aotearoa, characterized by a circuitous route through several alluvial flood plains and gorges. From its headwaters, the river drains north (away from the coast) through the Maniototo valley initially as a series of coiling scroll plains. The river turns east and south near Kokonga (meaning “corner” in Māori); through the Hyde George to the Strath Taieri Plain. After cascading through the Taieri Gorge, the river flows more slowly south and east through the low-lying Taieri Plains, another fertile alluvial plain, highly channelized for intensive livestock agriculture, and receiving the outflow of the estuarine Waihola–Waipori wetland complex, prior to passing through the lower gorge to Taieri Mouth (Parkes, 2003a).

The Nechako River (Figure 1b) is the second largest tributary of the iconic Fraser River, known for being one of the most important Salmon bearing rivers in the world. The Nechako River and tributaries

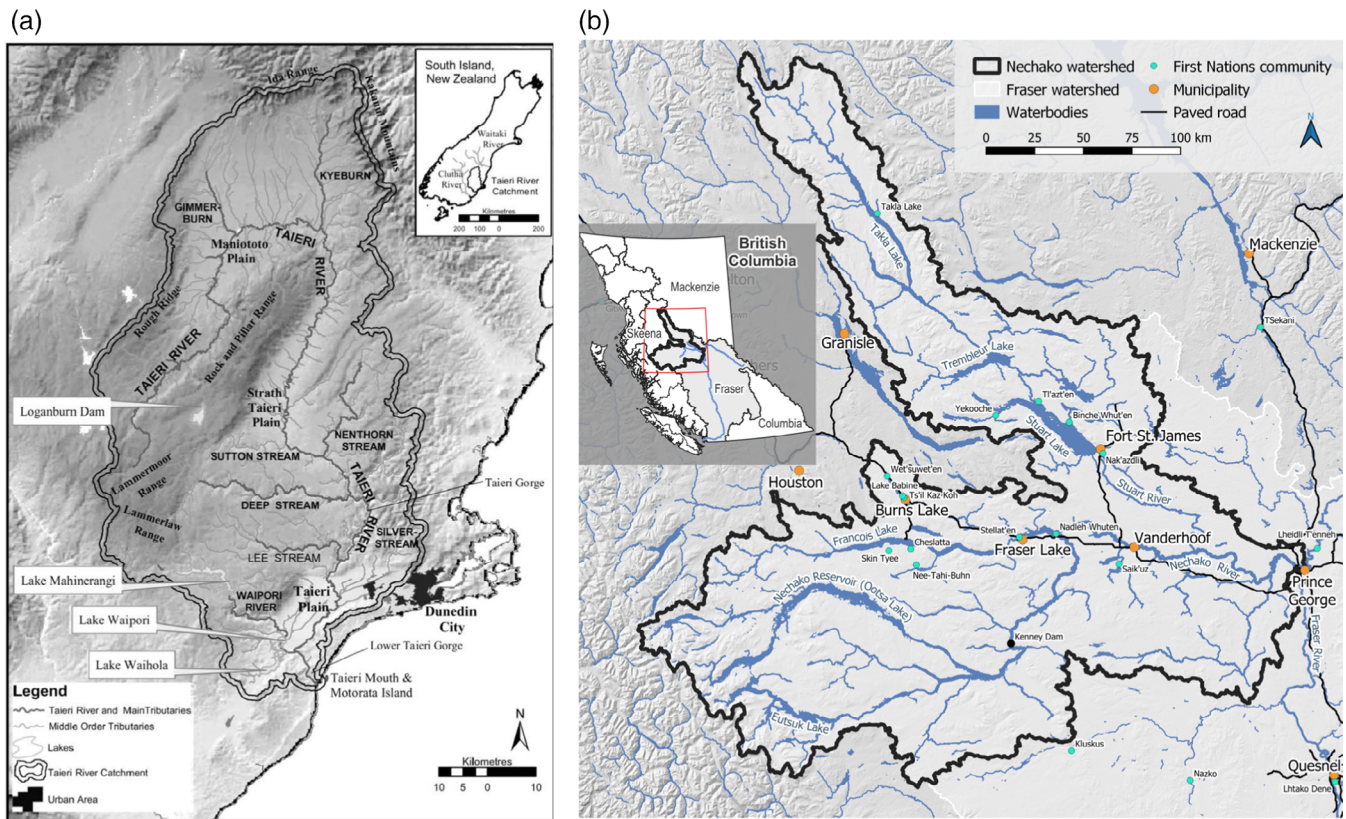


FIGURE 1 A visual introduction to the Taieri River catchment and the Nechako River watershed. (a) The Taieri River Catchment: natural topography (from Parkes, 2003b, Figure 2). (b) The Nechako River: Tributaries and key settlements (Figure credit: Aita Bezzola & Ella Parker, 2021) [Color figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]

form part of a large, continental-scale, river basin draining an area 47,200 km² in north-central British Columbia, making up 20% of the total area of the Fraser River basin and ~5% of the total area of British Columbia. This extensive watershed area includes territories of 15 First Nations, including the lands around the Nechako mainstem (Cheslatta Carrier Nation, Lake Babine Nation, Wet'suwet'en First Nation, Nee-Tahi-Buhn Indian Band, Ts'il Kaz Koh [Burns Lake] Band, Stellat'en, Nadleh-Whut'en, Saik'uz, Lheidli T'enneh) and within Stuart Takla system (Binche Whut'en, Nak'azdli Whut'en, Skin Tye Band, Takla Lake, Tl'azt'en, and Yekooche First Nation). The mainstem of the Nechako River is 516 km long, flowing from headwaters that, since the early 1950s have been dominated by the far-reaching ecological and social impact of the Kenney Dam and Nechako Reservoir (Carigg, 2021; Harder, 2016; Hartman, 1996; Picketts, Parkes, & Déry, 2016). After receiving the waters of many smaller tributaries, the Nechako ends at the Lhtakoh (Fraser) River confluence within the territory of the Lheidli T'enneh: "the People at the Confluence of the Rivers" (Lheidli T'enneh First Nation, 2021). Beyond the confluence, the combined waterway flows south, these days known as the Fraser River, for another 798 km, before entering the Pacific Ocean at Vancouver.

Relationships and context: My relationship with each of these rivers reflects—among other things—differences in the length of time I have benefitted from getting to know each of the rivers, and their teachings

as "eco-social elders." Lessons from and with the Taieri River span my lifetime, since 1970, also influenced by the fact that my maternal father's family have been returning regularly to Taieri Mouth since the early 1900s. My mother wrote a community history of "Taieri Mouth and Surrounding Districts" with a local community elder when I was 10 years old (Parkes & Hislop, 1980). An intensive period of living with and learning "upstream" in the Taieri River began in 2000, when I selected the Taieri River Catchment as the catchment and case-study context for my PhD research (Parkes, 2003a; Parkes, 2003b; Parkes, 2004). One indication of the extent of the influence on my scholarly endeavors since then are publications directly informed by the Taieri River (Parkes & Panelli, 2001; Parkes, 2003a, 2003b; Parkes & Horwitz, 2009; Parkes et al., 2010) and the impact on my understanding of integrated catchment management and watershed governance at the turn of the 21st century in Aotearoa/NZ, including factors enabling the establishment of a multi-stakeholder TAIERI (Taieri Alliance for Information Exchange and River Improvement) Trust (see Parkes, 2015). I have regularly spent time at Taieri Mouth since 2000, often venturing "upstream," especially to the Maniototo. The Taieri River is the place in Aotearoa/NZ where I continue to orient to, returning as often as I can, motivated by the ways that—in addition to connections with family and friends—this affords opportunities to spend time with a highly valued eco-social elder. The sense of "teachings" from the Taieri evolving to resemble "conversations" with other rivers and waterways began while

living and working in Hawai'i (2003–2005) and since 2005 when I moved to Canada.

My lessons with and about the Nechako River began in 2009, after moving to live in Lheidli T'enneh territory, in conjunction with a position as a Canada Research Chair in Health, Ecosystems, and Society at the University of Northern British Columbia (UNBC). In 2010, I began my introduction to a diverse array of colleagues of community leaders, restoration champions, researchers, First Nations communities, and youth whose strong and ongoing commitments to address challenges in the Nechako watershed have perfused how I understand life, work, play, and learning in the region. I have worked among this complex milieu of people and land-water systems for the last decade, actively engaged in the evolution of a series of collective watershed-governance efforts in the region: informed by the earlier efforts of the Nechako Watershed Council, moving toward an interim entity known as the Nechako Watershed Alliance (2012–2015), which was consolidated into the Nechako Watershed Roundtable (NWR) in 2015. As a collaborative group, the NWR works across perspectives from local and First Nations governments, provincial and federal government agencies, and private sector and civil society, with a commitment to protect and improve the health of the Nechako watershed and its communities (NWR, 2021). In the last 10 years, collective efforts focused on understanding and responding to management and governance challenges in the Nechako watershed have been complemented by research (Déry, Hernández-Henríquez, Owens, Parkes, & Petticrew, 2012; Gislason, Galway, Buse, Parkes, & Rees, 2021; Picketts et al., 2016, 2020), especially in conjunction with the UNBC Integrated Watershed Research Group (Petticrew, Déry, Owens, & Parkes, 2017), and more recently, the “Koh-learning in our Watersheds” project partnered with the local school district focused on transforming education by connecting students, communities, and waterways” (Koh-learning in our Watersheds, 2020).

1.2 | River conversation starters

Introducing rivers and my relationship to them as living, emergent land-water systems provide the basis to explore several river “conversation starters.” Here, I offer glimpses into connections and points of comparison in naming and terminology, confluences and flows, and the weaving of waterways (scroll plains and braided rivers). These starting points reflect that my “conversations” with rivers as eco-social elders have been far from linear. The ideas offered here are part of ongoing exchanges that deepen and transform my understanding of systems-thinking, reciprocity, iterations, and interrelatedness in ways that are both metaphorical and ontological: resonating with Wahl's description that “more than a set of tools, systems thinking is an art form of creatively dancing with complexity that has the power to transform us and our world. It can make us see ourselves, and our world, with different eyes” (2016, p. 85). These conversation-starters offer, therefore, entry points to explore and grasp complexity and change in rivers and ourselves.

Names, flow, confluence? Unique and particular place names—especially those that draw upon Indigenous and settler languages—often provide an entry point for ongoing lessons about rivers, waterways, and landscapes. The names of and within Taieri and the Nechako catchments provide a compelling starting point for conversation and connection. The origins of the word Taieri are not certain. It could potentially come from word taieri meaning “spring tide.” The word taieri is also a verb in te reo (Māori language) that means to beat, drive back, repulse, smash, and crush (Moorfield, 2021). Observing the interactions of river and tide at the Mouth (including a reciprocal “drive back” depending on the tide) lends itself to this meaning. Nechako is an anglicization of the Dakelh name “netja koh,” which means “big river” (netja—big, and koh—river or waterway). Dakelh (also known as Carrier) is a language spoken in numerous dialects throughout in the Nechako watershed. The word koh is a Dakelh word for waterway and features widely in place names and waterways throughout the Dakelh-speaking territories (Poser, 2017).

River names provide an entry point for a conversation about tributaries, and confluences. In the Nechako, many of the major tributaries carry a version of the suffix koh: the Endako, the Stellako (draining into Fraser Lake and into the Nautley River), the Nak'alkoh (Stuart River), and the Chilako. Taking notice of tributary names also adds awareness to the way river names change after points of confluence. The Nechako “loses its name” when it joins the Lhtakoh (Fraser) River. The same occurs with all the major tributaries of the Taieri whether the Kyeburn in the Upper Taieri, or the Waipori River near the coast. River naming protocols determine that a river name is carried by the longer river, but not necessarily the largest catchment. This is especially notable at the Nechako–Fraser confluence where the length of the Fraser River is the 605 km, compared to the 516 km for the Nechako, but the upstream catchment of the Fraser area is only 32,400 km², compared to 47,200 km² for the Nechako. Such quirks invoke questions about how attention to the complex challenges in the Nechako (Carigg, 2021; Picketts et al., 2016, 2020) may have changed if the name of this mighty salmon-bearing river was the Nechako all the way to the ocean.

Reflections on the “loss” (negation?) of one river name when two river meets have provided many teachings and active conversation points across the Taieri and the Nechako. These reflections lead to questions about encountering similar patterns arising at other junctions and confluences: does the loss of a wife's “maiden” name when some people are married reflect assumptions about the importance of the larger flow or influence in the relationship? A less direct example can be considered in relation to the confluence of interacting knowledges. What happens when the flow or mainstem of one area of expertise or focus of study meets a new input? Should the “title” of the earlier areas of expertise be retained, or is the new flow more dominant and worthy of receiving a new title? River naming protocols ask us to reflect on how we can avoid a sense of “negation” at the junction of rivers, names, identities, or knowledges. Recurring conversations with eco-social river elders can encourage a viewpoint that looks past these simplifying either/or framings to offer insights into the many expressions of emergence as expressed by river confluences

and other living systems, often stretching beyond what English words can adequately express.

Weaving of waterways: Closely related to river teachings about confluences are lessons and conversations about braiding and weaving. In their exploration of Mātauranga Māori, Wilkinson et al (2020) have developed the “He Awa Whiria” framework, based on the imagery of braided river systems (iconic landscape features throughout Aotearoa–NZ) and traditional woven baskets. The framework builds on earlier work by Macfarlane, Macfarlane, and Gillon (2015) to encourage recognition of the lines of knowledge exchange and development as the two streams converge and reconverge throughout research and learning.

The theme of weaving, with its implications of reciprocity, interrelationships, and feedback have been powerful teachings from both the Nechako and the Taieri River, providing points of reference for ongoing lessons from these eco-social elders. A glimpse of the visual dynamics and land-water interactions associated with both rivers is provided in Figure 2, including the Upper Taieri Scroll Plains and the Nechako Braided River at Vanderhoof.

As well as the aesthetic of these wetland features, the sensitive, dynamic land-water systems of the Taieri scroll-plains, and the braided river features of the Nechako, provide important lessons about the range of values these habitats offer for both humans and other species (Horwitz & Finlayson, 2011; Horwitz, Finlayson, & Weinstein, 2012). Both provide habitat for nationally or internationally rare or threatened species or communities (ORC, 2020) as well as critical habitat for the life cycles of indigenous fauna, which are dependent on these wetlands (Pickets et al., 2016). Importantly, some of these species are also migratory, creating journeys, stories and connections across rivers, oceans, islands, continents and hemispheres, as well as among species, contexts, seasons, and generations, in ways that deepen our understanding of intergenerational and interspecies equity (Gislason & Stephen, 2021).

1.3 | River-ocean journeys: A wider context for conversations between eco-social elders

“Like all rivers, the Taieri cannot resist the salt. Salt is its addiction and its destiny”. (Neville Peat, 2001, p. 32)

In addition to their internal river confluences, almost all rivers are connected through the ultimate “confluence” with the ocean. For both the Taieri River and the Nechako River, this final meeting point is the Pacific Ocean. Contextualizing river conversations in relation to an ocean, enables of a view the Taieri and Nechako Rivers as directly connected through the Pacific Ocean and the relationships with each river's unique upstream and downstream dynamics. Thinking of rivers in this way connects all rivers, recognizing the shared “downstream” ocean endpoint for most waterways, as well as the connections of all oceans across our planetary home: encouraging physical, metaphorical, and relational expressions of the “whole.”

Imagining individual rivers flowing into the same Pacific Ocean from different orientations and hemispheres, in conjunction with other beings for whom these rivers and oceans are “home,” creates a fertile imagination scape for conversations across living systems in different contexts of our planet. Box 1 provides an example of a relational, connecting story that exemplifies combined teachings from Taieri and Nechako Rivers.

The story thread of interrelationships in Box 1 offers a small glimpse into specific river–ocean (and terrestrial–marine) ecologies and relationships of each river, as well as the potential connections between them across bioregions and hemispheres. In particular, the journeys in Box 1 invoke connections between several iconic species characteristic of these river systems, with migratory dynamics at different stages of their life cycles that directly connect freshwater and marine habitats. New Zealand's native Galaxid (*Galaxia maculatus*) migrates inland to the Taieri River after spawning at the coast. The

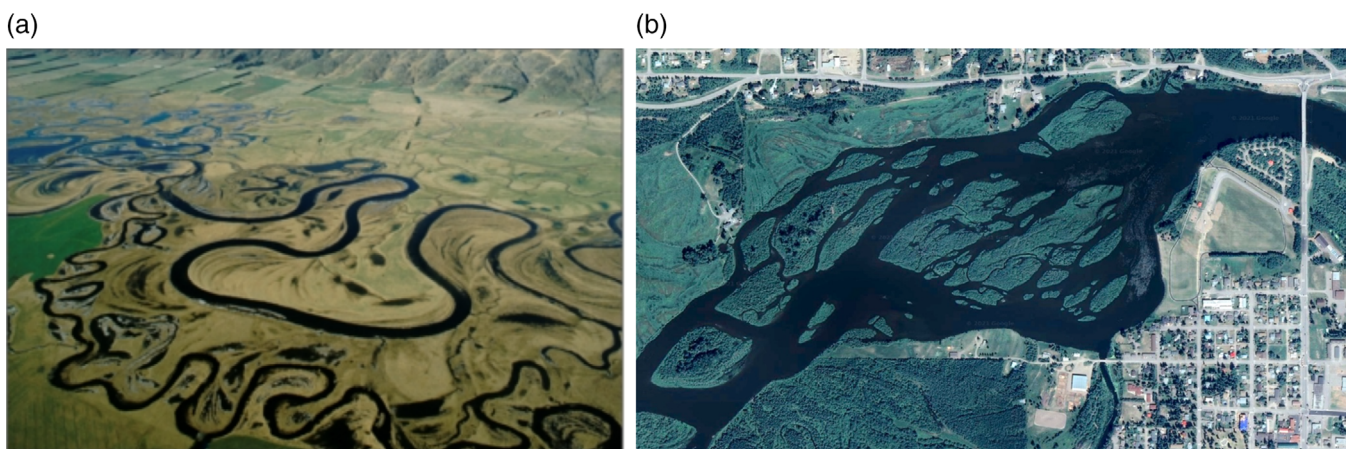


FIGURE 2 Variations on a theme: Reflections of weaving waterways from eco-social river elders (The Taieri River and the Nechako River). (a) The Taieri River Scroll Plains at Styx. The Upper Taieri Wetland Complex is the focus of ongoing, intensive conservations and restoration activities due to the threats to unique habitats, hosting at risk species. (Source: Otago Regional Council Photo Archive, 2005). (b) The Nechako as a braided river at Vanderhoof. This braided area is a hub of interspecies interaction, as spawning ground for the SARA-listed Nechako White Sturgeon, a migration routes of multiple bird species and an intensive focus of restoration efforts. (Source: Google Earth. 30 June, 2021) [Color figure can be viewed at wileyonlinelibrary.com]

Box 1 River and Ocean conversations: waterways and interspecies connections

Imagine a journey that spans rivers, oceans, species, flyways, and hemispheres, creating a conversation between rivers on either side of the Pacific Ocean, connecting New Zealand whitebait with bald eagles in Canada.

- A starting point is the Taieri River: a native *īnanga* or whitebait (juvenile *Galaxia maculatus*) has spent 3–6 months in coastal marine waters after hatching, and is returning to the Taieri River...
- The juvenile *īnanga* avoids the human nets being used to catch whitebait at Taieri Mouth, and swims upstream to mature in the Waipori wetland where it is eaten by the large, mature *tuna*⁽ⁱⁱ⁾ ...
- The mature *tuna* longfin-eel (*Anguilla dieffenbachia*) that feeds on the mature galaxid is ready to spawn, and so begins its journey downstream from the Upper Taieri scroll plains (Figure 2a) to the mouth of the Taieri River and out into Pacific Ocean, beginning a long journey north and east to spawning grounds in the sub-tropical Pacific⁽ⁱⁱⁱ⁾ ...
- After swimming through the Taieri Mouth estuary, the mature *tuna* swims past Moturata Island, a near-shore breeding colony of the seabird *tītī* (Sooty Sheerwater, *Ardenna grisea*). In late April, at the end of the southern breeding season, the *tītī* makes a deep dive to catch a squid: the *tītī* (sheerwater) and the *tuna* (long-finned eel) pass underwater, each on their way to warmer habitats. The *tītī* surfaces, readying to commence its own journey, a migration across the Pacific Ocean, journey along a flyway that leads to the “Pacific Northwest”⁽ⁱⁱⁱ⁾.
- Arriving to the Strait of Juan de Fuca, in the western reaches of the Salish Sea in May, the Sooty Sheerwater is one of the many migratory bird species that mark the beginning of spring^(iv). Here, the *tītī* will “overwinter” from its southern hemisphere breeding grounds, benefitting from the coastal marine productivity enhanced by outflow from large salmon-bearing rivers such as the Fraser and the Columbia.
- Diving to feed on fish over the summer, the *tītī* passes different types of salmon returning to the Fraser River after 3–4 years in the Pacific Ocean. Among these are Chinook salmon that between March and July will enter the Fraser River to begin a >1,000 km journey to spawn in the Nechako River^(iv).
- The Chinook enter the Fraser River at the river delta near Vancouver, BC, passing through the coastal mountains in the Fraser Canyon and the working north through the central interior plateau.
- After ~800 km, the Chinook leaves the Fraser (Lhtakoh) and enters the Nechako River, in the territory of the Lheidli T'enneh (the People at the Confluence of the Rivers). This particular Chinook passes through the Nechako to conclude its journey spawning just west of the braided stretch of the Nechako River in Saik'uz territory, near Vanderhoof, from where its carcass will be eaten by eagles, resulting in dispersal of ocean nutrients to riparian species nearby^(vi).

Notes: ⁽ⁱ⁾Juvenile *īnanga* are eaten at sea by many species of fish and birds and also caught by recreational fishers in white-bait season. One of the fish species that eat adult whitebait are native *tuna* (long-fin eels). *Tuna* and *īnanga* share habitat throughout the Taieri River, including the Waipori–Waihola estuarine lake-wetland complex (David, Closs, & Arbuckle, 2002; Sutherland & Closs, 2001).

⁽ⁱⁱ⁾*Tuna* is a generic Māori word for longfinned eels that are endemic to Aoteroa/NZ, spending their adult lives in New Zealand rivers, and migrating to sub-tropical waters to spawn and die in deep marine trenches (Jellyman, 2006).

⁽ⁱⁱⁱ⁾*Titi* is the Māori name of the Sooty Sheerwater (*Puffinus griseus*) with a breeding colony at the near-shore island of Moturata at the Mouth of the Taieri River (Hamilton et al., 1997) and wintering ground in the Pacific Northwest.

^(iv)In the Pacific Northwest, the Sooty Sheerwater is abundant May–October (Gaydos & Pearson, 2011) around the same times as the Fraser River Chinook salmon begin their “run” to their spawning grounds in the Nechako (Helm et al., 1980).

^(v)The Lheidli T'enneh are the people of the confluence of the rivers (Lheidli T'enneh First Nation, 2021)

^(vi)Flows in Cheslatta Falls are controlled by the Skins Lake Spillway, which, since building of the Kenney Dam in the 1950s, provides the main source of water for the Cheslatta and Nechako Rivers from the Nechako Reservoir (Picketts et al., 2020, +).

iconic Longfin eel (*Anguilla dieffenbachia*) is known as *tuna* by Māori and are considered *ā tātou taonga* (treasured species) with a multitude of names that relate to tribal origins, appearance, coloration, season of the year, eel size, eel behavior, locality, and capture method (NIWA, 2021). Eels spend their adult lives in New Zealand rivers such as the Taieri, but once mature, migrate several thousand kilometers to

sub-tropical waters to spawn and die in deep marine trenches. Their larvae float back to New Zealand on marine currents before transforming into a fry that migrate inland in rivers such as the Taieri. In a mirror image of ocean–river spawning patterns, Chinook salmon (see Box 1), spend several years in the Pacific Ocean, covering large areas, before returning to the Fraser River to spawn and die. For the

Chinook and Sockeye salmon that spawn in the Nechako River, the freshwater, inland journeys of Salmon are well over 1,000 km.

Although both rivers are home to species with long-distance ocean–river migrations, making a direct connection between the river habitats of the *inanga* and *tuna* in the Taieri and south west of the Pacific Ocean, and return of Chinook salmon to the Nechako, requires an imaginative leap across hemispheres, seasonal orientations, south and north, as well as east and west across the Pacific. In the story in Box 1, this “trans-hemispheric” leap is provided by the *tītī* (Sooty Sheerwater, *Ardenna grisea*) whose migratory route has been noted to “integrate oceanic resources across the Pacific Ocean in an endless summer”. The *tītī* are described to depart New Zealand near and off-shore islands in early April and arrive on the wintering grounds of the northern reaches of the Pacific Ocean in early May, when oceanic productivity in the North Pacific exceeds that found in the South Pacific (Shaffer et al., 2006). Invoking a seabird to “carry the conversation” between rivers is a reflection of recurring lesson from both rivers: emphasizing the importance and richness to be found when we explore connections and reciprocities across species (including humans). In this case, the conversational “thread” is woven between the Taieri River *inanga* (whitebait) and *tuna* (longfinned eel), a *tītī* (sooty sheerwater) migrating from Taieri Mouth to over-winter in the Salish Sea, and the epic journeys of the Chinook salmon to get to north central British Columbia, Canada, bringing with it ocean nutrients that sustain riparian species throughout the Nechako watershed.

In this way, the combination of Pacific Ocean and trans-hemispheric flyways creates an active, living conversation between the Taieri and the Nechako Rivers and evokes a sense of interdependence, connection, and reciprocity that could be characterized as “Living LAWS” (Land, Air, and Water Systems). Connecting river conversations with oceans and flight paths invokes a planetary perspective, connecting these rivers, as eco-social elders, with their wider home and context. These interrelationships underscore the many opportunities for emergence arising from conversations among two rivers and their teachings.

1.4 | Concluding thoughts: Reflections on river conversations and emergence

“Emergence arises from the ways in which the parts of a system influence one another, expressing consequences and leading to outcomes that would not have occurred if the components had not been interacting” (Parkes & Horwitz, 2016, p. 42).

Through their combined teachings, the “voices” of both rivers can be heard: as guides, as provocateurs, and as ongoing points of reference in a journey of learning about rivers and waterways as interacting, living systems that are foundational for health and well-being (Parkes, 2020a, 2020b). These glimpses of river connections also highlight the potential for interactions and conversations between eco-social river elders, and how this could fuel commitment to benefit from and design for “emergence.” Extensive, overt cross-referencing

of my own work that has been influenced by these rivers, is intentional: an overdue acknowledgement of the contributions these eco-social river elders, making visible that which has been invisible, in the form of lessons I have learned, in a way that overcomes feelings of awkwardness about “speaking for” either river. In acknowledging my river elders, I also acknowledge other river voices and conversations, past, present, and future.

River conversations that invoke upstream, downstream, and even trans-hemispheric connections across our shared home offer powerful entry points to consider the combined hydrological, ecological, and socio-historical contexts that interweave as foundations for health and well-being (Horwitz & Parkes, 2019; Parkes, 2016a; Parkes & Horwitz, 2016). The teachings of rivers draw on millennia in terms of geological processes, and also historically—reflecting the highly connected history of human diaspora, exploration, colonization, and associated impacts on landscapes and waterways across our planet. These factors have informed and expanded my reference to the Taieri and the Nechako as “eco-social” elders: what has been experienced in these river catchments, and within their watershed boundaries, is also a reflection of the history I have come to experience and live among as a citizen of Aotearoa/NZ, and an immigrant and recent citizen of Canada. Comparing and learning across rivers in Canada and Oceania, in particular, has provided me a platform to learn from an array of historical, colonial, governance, ecological, Indigenous, linguistic and sociodemographic commonalities, and differences (Anderson et al., 2012; Carter, 2019; Moewaka Barnes, Eich, & Yessilth, 2018; Parkes et al., 2019). Lessons from the Taieri on the complexities of catchment management and governance (Parkes, 2015) have created a basis for application, adaptation and refinement in the Nechako context (e.g., Gislason et al., 2018; Picketts et al., 2016, 2020). Similarly, insights from working with the rural, remote, and Indigenous geographies and communities of the Nechako have highlighted common, inequitable burdens of cumulative impact from converging environment, community and health impacts of climate change, land and water degradation, and loss of biodiversity (Aldred, 2021; Gislason et al., 2021; Parkes, 2016b; Parkes et al., 2019).

River teachings on the confluences, reciprocity and weaving of waterways, and among species underscore the imperatives of engaging both Western and Indigenous knowledges to better understand rivers, waterways, and knowledge flows in metaphorical and practical ways. These themes resonate with growing bodies of work championed by Indigenous scholars that are influencing the wider sociopolitical context through which the Taieri and Nechako Rivers flow whether in Oceania and North America (Bartlett, Marshall, Marshall, & Iwama, 2015; Harmsworth, Awatere, & Robb, 2016; Henwood et al., 2016; Macfarlane et al., 2015; Panelli & Tipa, 2007; Ratima, Martin, Castleden, & Delormier, 2019; Redvers, 2021; Wooltorton, Collard, & Horwitz, 2018). As we look to cultivate practices and processes that fuel emergence, recognition of the potential of “weaving”—of rivers, intentions, and aspirations—is expanding. In a text focused on “healing the mauri of the whenua”, McGowan (2019) connects the Māori word for weaving (*rangaranga*), with the role of a chief (*Rangatira*), noting that the leadership needed today is to “weave the

people together, so that they can work together, in a united, co-ordinated way, to achieve their common goal." This, McGowan argues is not about power and authority: rather it is about humility and courage.

"Humility enables us to see that, if we are to meet the challenges of our time, we need to work together. Courage is what is needed to take the lead in bringing people together to achieve that." (McGowan, 2019, p. 26)

My experience from living and working with the Taieri and Nechako Rivers is that they offer powerful opportunities to learn about humility and courage in ways that are essential to respond to the challenges and opportunities within our shared planetary home. River teachings offer inspiration for integrative, regenerative, transformative and restorative approaches to land, water and health interactions, respecting rivers in their own right, as eco-social elders, and as foundations for our health and wellbeing.

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DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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