

REPORT

Yaa Heen Koosge: Indigenous Peoples and Water Wisdom

Water governance from an indigenous perspective; exploring key values, concepts, and approaches that underlie how Indigenous Peoples' interact and relate with water.



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Contact

Stockholm International Water Institute
Box 101 87 • SE-100 55, Stockholm, Sweden
Visiting Address: Linnégatan 87A
Tel. +46 8 121 360 00 • www.siwi.org

Acknowledgements

Philip Beetlestone
Humberto Cholango
David Hebart-Coleman
Marianne Kjellen
Birgitta Liss-Lymer
Elizabeth Koch
Virginia Mariezcurrena
Samwel Nangiria
Te Tui Shortland
Jennifer Veilleux

Carcross/Tagish First Nations (Facilitated by Dr Eleanor Hayman, Colleen James/GoochTláa, David Katzeek/Kingeisti and Mark Wedge/Aan Gooshú,

Dharriwaa Elders Group (Facilitated by Clem Dodd, Virginia Robinson, and Wendy Spencer)

Karen Environment and Social Action Network (Facilitated by Hser Doh, Casper Palmano, and Paul Sein Twa)

Foreword

Within international development, it is quite common to hear the phrase “Water is life”, a phrase that helps illustrate the centrality of water across societies and ecosystems. And yet, despite this apparent centrality, many parts of the Earth are increasingly facing water crises, where the quality and quantity of water is declining. Pollution, ecosystem degradation in freshwater and terrestrial systems, land use change, urbanization, and overuse are impacting on water resources, irrespective of whether water is envisioned as a singular national resource when contemplating water security or when separated into multiple constituent water bodies. In response to these challenges, there have been increased calls for societies to value water better, underpinned by an assumption that valuation will highlight water's centrality not just to societies and ecosystems but also to economic systems, thereby leading to better protection and use of water resources.

As a result, there has been increased attention to the way that water is valued and on how values held by people and communities impact on how water resources are viewed and managed within water governance. A substantial number of concepts, tools, and methodologies around valuation have emerged in various fields, including water and ecological footprints, ecosystem services assessments, green infrastructure, and nature-based solutions, among many others that help to understand the value of water (WWDR 2021; IPBES 2022). To date, most of this work on valuation has focused on instrumental values, and the multiple purposes to which water can be put, as well as intrinsic values. Intrinsic values include the values associated with an environment for its own sake, including existence values, whereas instrumental values are those values associated with the use of water resources or the environment from which they are sourced. But there are other values that should be considered, such as relational and indigenous values, and understanding how these can and should intersect with water governance.

This report is predominantly concerned with values held by Indigenous Peoples, and their importance, and on building knowledge more widely about how these inform and guide water governance in many parts of the world. It consists of a series of contributions made by different Indigenous Peoples and boundary walkers on the values that are held and expressed within their communities.

The report is intended to help explore key values, concepts, and approaches that are important for understanding Indigenous Peoples' interactions and relationships with water, as well as recommendations for actions or activities that help to bridge multiple perspectives on water values. The UNDP-SIWI Water Governance

Facility (WGF) invited contributors from a range of Indigenous groups, or practitioners working in the field, to discuss their values around water and illustrate how such values are expressed within their local context. Each of these contributions is based on the important message that each respective group wished to convey to external parties, rather than being set in advance or according to a template. As a result, a rich and diverse set of direct contributions that touch on many facets of water governance has emerged, and these contributions are the focus of this report.

By exploring water governance from multiple perspectives, new insights and approaches can be formulated. But to build this platform, the report is built on an assumption that relational values are a useful way to generate some understanding of Indigenous values, which in turn is important for ensuring that the role that Indigenous Peoples play in water governance is better recognized and respected, and leads to material change. Relational values, as a concept, emerged within more recent ecosystem services literature, whereas Indigenous values have been a long-standing component of Indigenous societies, knowledge, and scholarship. While there are parallels between Indigenous values and relational values, it is acknowledged that they have origins in different knowledge systems. The opening section of this report outlines general concepts and explanations for knowledge-building purposes but recognizes this cannot replace local place-based approaches being advanced and conveyed by Indigenous Peoples within their respective territories, such as those contained in the contributions.

Many of these contributions are gifts from the groups concerned, as they help to generate insights and distribute them to the wider globe. These contributors represent but a small fraction of the Indigenous Peoples and practitioners worldwide, and a recommendation to international policymakers is that increased global support be offered to ensure the inclusion of more Indigenous communities, peer-to-peer learning, and their experience-building around water governance. It is hoped that by highlighting the ongoing role of Indigenous values in water governance, and the important lessons therein, further resources will be made available to support Indigenous communities. It should be recognized that translation and interpretation of all Indigenous values from multiple different cultural worldviews is not always possible or preferable, and these contributions are those that the communities are willing to share.

Through the WGF partnership, SIWI supports Water and Ocean Governance work of the United Nations Development Programme (UNDP) by way of providing water governance-related expertise and advice to UNDP and partners – globally and through UNDP Country Offices. Such expertise is concerned with providing practical guidance on water issues, including the reconciliation of different values from many different perspectives, including Indigenous Peoples, faith-based

networks, and others. Approaches that treat water as a resource to be managed and used instrumentally can be difficult to reconcile with value- or place-based approaches that are founded on long-standing relationships. Around the world, many Indigenous Peoples and local communities have an increased profile of engagement, although they have always been engaged, where they have relationships with their land and water bodies through their territories and already weave the threads between intrinsic and instrumental values.

David Hebart-Coleman, Senior Program Manager, SIWI.

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Introduction

Between climate change, biodiversity loss and shifts in hydrological systems, the world is rapidly changing. As a result, innovative thinking is critical and includes questioning current approaches to water governance and supports the need to explore alternatives. Indigenous leadership, and lessons taken from practices and experiences of Indigenous Peoples, is increasingly taking a more visible role in living in balance with the Earth, including its many waters (Leonard et al. 2023, Linton & Pahl-Wostl 2023).

Water governance, in the Western conception, generally views and treats water as a resource that is put to efficient and effective use and managed accordingly to meet needs predetermined by stakeholders. While water governance has undergone changes in approach and understanding, shifting from predominantly technocratic and top-down approaches to more participative approaches inclusive of a wider set of interests, values, and stakeholders, the focus is still on the efficient and effective delivery of water services as an input into social and economic activities. This approach leads to investment in infrastructure, policies, and planning to ensure that water resources are readily available and accessible. But it has also resulted in the separation of water bodies into constituent parts to ease management. Many water governance regimes are often highly complex and involve multiple different actors in its management, many of which operate in silos.

Given that the health of water bodies continues to decline, core assumptions about water governance need to be challenged and alternative approaches, such as approaches held by many Indigenous communities, must be explored. In recent years, there has been an expansion of material from Indigenous scholars working in post-colonial and settler communities on topics such as water, ecosystems, and the environment (Palmer 2021, Leonard et al. 2023). A defining feature of this scholarship has been an increased focus on recognizing and privileging long-standing relationships between Indigenous Peoples and their territories, including land and waters.

Amongst many key differences in these worldviews and approaches compared with Western water governance, is that people are not treated as separate from their environment. People live with water bodies, as with other parts of the environment, in a system of responsibility and reciprocity – where what is used or taken must be replenished in a way that is appropriate for land and water relationship to remain for now and for future generations (Leonard et al. 2023, Linton & Pahl-Wostl 2023). There is recognition that water has a lifeforce, spirit and a whole parallel

lifestyle to which relationships with people are only one part. Also, there is an emphasis on how these relationships are expressed meaningfully through Indigenous care and guardianship activities including ceremony, ritual, tradition, responsible use, knowledge sharing, and caretaking among other activities, which in turn re-centre sovereignty and self-determination.”¹ However, such increased emphasis on relationships has not been strongly incorporated within global water policy processes, especially when compared with sectors such as biodiversity and ecosystem services.

Recognition in global biodiversity policy processes, along with this increased scholarship, has led to some acknowledgment of roles that Indigenous Peoples already hold, and continue to perform as part of the earth system, such as those indicated within the Kunming-Montreal Global Biodiversity Framework. However, recognition of cultural diversity has not enjoyed the same level of importance in understanding different value systems and relationships that societies have with their surroundings. Increased awareness and further understanding of how Indigenous People live with these complex earth systems has highlighted more consideration of Indigenous worldviews, including when it comes to water bodies. These efforts help to identify common learnings or principles from Indigenous groups on how the wider water community should rethink and reconsider water and water bodies, and lessons on how to apply relationship-based approaches to understanding effective future water security.

Since the 1960s, increased Western scholarship in the field of ecology and its various related fields of conservation biology, restoration ecology, etc. formalized scientific understanding about the complexity of earth and environmental systems. However, these findings in Western scholarship are not new, rather they often reflect Indigenous knowledge about these same systems that may be tens of thousands of years old. Only recently are academics and practitioners willing to acknowledge and integrate the credit to Indigenous Peoples and this is found in contemporary scholarship from Indigenous and other scholars growing interest in relational values found in fields such as ecosystem services and ecosystem-based management (IPBES 2022, Leonard et al. 2023). The concept and wider exploration of relational values is strongly emerging in interdisciplinary literature relating to ecosystem services and is finding its way into other sectors such as water (WWDR 2021), although it is recognized that Indigenous Peoples have been

¹ Throughout this report, Indigenous Stewardship, or references to care and guardianship, will be used to refer to the connection and relationship that many Indigenous Peoples have with their territories as part of the dynamic balance. The phrase cannot capture the full meaning of this connection but is meant to also include protection, conservation, partnership, nurturing, spiritual, and safeguarding component.

expressing and administering similar but different types of values for millennia (Leonard et al. 2023).

There has also been some expansion of tools and mechanisms in use around the world that seek to bridge Indigenous values and national or subnational priorities, such as the inclusion of Indigenous values in national statutes or policies (Leonard et al. 2023, Parsons & Fisher 2020,), although there continues to be concerns that some activities and their origins remain unacknowledged. For example, Indigenous values have been integrated into various subnational, national, and international policies statutes, and plans, such as in Aotearoa New Zealand and Canada (Leonard et al. 2023). Currently, there is a movement to create a more equitable and formal recognition of indigenous values as an influential or actual part of the greater body of human wisdom through things such as the UN Declaration of the rights of Indigenous Peoples.

The rights of Indigenous Peoples are being increasingly recognized in international policy discourse, especially regarding biodiversity, land rights, and tools such as the use of free, prior and informed consent, although there remains questions over their effectiveness and use, whereas a raft of recent international reports such as those from the Food and Agriculture Organization of the United Nations (FAO) help to quantify the impact of Indigenous Peoples' governance on biodiversity, such as in forest governance in Latin America (FAO 2021).

While less tangible values such as cultural services or existence values (enclosed within instrumental and intrinsic values, respectively) have been included in Western concepts of natural resources economics used in environmental governance, these approaches are limited, as they do not express the full extent of the relationships between people and place. Often, they are limited to specific activities in a specific location that can be easily measured in some fashion, and they do not place value on the importance of obligations or responsibilities that are necessary within a relationship.

The contributions in this report help to illustrate the many different values associated with relationships between people and their water bodies, as well as the many different meanings surrounding water and its role. Taking a lead and learning lessons from Indigenous Peoples can provide a “watershed moment” for the water community to re-evaluate how water bodies are seen and understood globally, in that they should not be simply regarded as bundles of resources but sit at the centre of different types of relationships across communities.

Indigenous Peoples and water governance

The population of Indigenous Peoples is estimated to be 476.6 million people (ILO 2019), or 6 percent of the global population, across approximately 5,000 self-identified peoples. Territories managed by Indigenous Peoples, whether formally recognized by sovereign States or not, are estimated to cover approximately 38 million km², or one quarter of terrestrial land area (Garnett et al. 2018). Indigenous territories typically include high levels of biodiversity and intact ecosystems, and many headwaters, water towers, and other important water bodies or sources of water. While this report is concerned with water governance, divisions between land, water, and coast do not accord strongly with the understandings of many Indigenous Peoples around the world, and this is reflected in many of the contributions. “Healthy land, healthy water” is a common refrain from Indigenous Peoples, and this approach forms the heart of local water relationships in many territories.

Indigenous Peoples often suffer disproportionately from the costs of development but enjoy few of its benefits. Many Indigenous Peoples have been dispossessed and displaced from their traditional territories due to natural resource extraction, large-scale agriculture, infrastructure development, and conservation efforts, and such impacts are ongoing. Recognition of the rights of Indigenous Peoples varies from country to country and from one region to another, despite the presence of international agreements such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

BOX 1: UNDRIP and water governance

The UNDRIP sets out to “constitute the minimum standards for the survival, dignity and well-being of the Indigenous peoples of the world”. It recognizes and protects collective values that otherwise would not be protected under other conventions and activities, as well as the individual rights of Indigenous Peoples. Article 1 states, *“Indigenous peoples have the right to the full enjoyment, as a collective or as individuals, of all human rights and fundamental freedoms as recognized in the Charter of the United Nations, the Universal Declaration of Human Rights(4) and international human rights law.”* It protects the rights of Indigenous Peoples to enjoy and practise their cultures and customs, their religions and languages, and to develop their economic, social, and cultural institutions.

In Article 3, the UNDRIP recognizes Indigenous Peoples' right to self-determination, which includes the right *"to freely determine their political status and freely pursue their economic, social and cultural development"*. Article 26 states, *"Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired"*, and it directs States to give legal recognition to these territories. The Declaration reflects existing international human rights standards and explains how they apply in the specific circumstances of Indigenous Peoples.

While many articles are relevant, two later articles stand out in terms of acknowledging Indigenous Peoples' values and relationships within water governance, Article 25 and Article 32:

Article 25: Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.

Article 32: 1. Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources. 2. States shall consult and cooperate in good faith with the Indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources. 3. States shall provide effective mechanisms for just and fair redress for any such activities, and appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact.

Through reading of these articles in combination, UNDRIP provides support Indigenous communities in water governance, especially within their territories, and noting the distinctive spiritual relationships that are often manifested as Indigenous values.

Despite this, the highest level of biodiversity values are often found within Indigenous-managed territories (FAO 2021) in many countries. These high levels of biodiversity are often found due to the long-standing relationship between these communities and their territories, where such relationships uphold strong care and guardianship obligations to the more-than-human community. Many of these locations have been historically hard to reach, although the impact of climate change and increased mining activities have increased vulnerability. Without engagement with Indigenous Peoples, there is a danger that an increased focus on biodiversity or freshwater ecosystem targets at an international level will catalyse activities that will dispossess many Indigenous communities of their inherent rights

and obligations, potentially replacing them with approaches that have proven to be less effective in terms of conserving biodiversity, while impacting on relationships between peoples and their territories.

At a global level, there has been increased recognition of rights and responsibilities of States to Indigenous Peoples, along with recognition that many Indigenous communities face challenging conditions and often have a limited voice in respect to decision-making about resources on which they depend. Many multilateral institutions have recognized the important role and different needs of Indigenous Peoples, reflected in declarations, conventions, policies, and strategies that guide action and activities in relation to Indigenous Peoples, including the recent Dushanbe Declaration (2022).

Increased attention to Indigenous Peoples in the last 30 years culminated in the development and approval of international documents, beginning with the International Labour Organization and continuing with those such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and policies prepared by global institutions such as the World Bank and the Green Climate Fund, among many others, as well as advocacy by multiple national and international institutions on important approaches to working with Indigenous Peoples.

Most often, these processes are purportedly designed to strengthen engagement with Indigenous Peoples and foster inclusive engagement processes. But while many of these documents refer to cultural values, cultural identity, ancestral practices, or similar, there has been limited attention to how different worldviews can be bridged and included to ensure that Indigenous values are better manifested. Despite such increased attention to Indigenous values, there is a lack of understanding or agreement on how relational values should be meaningfully included within water governance, although such efforts are under way within the ecosystem services literature (IPBES 2022).

The terms “Indigenous communities” and “Indigenous Peoples” encompass a vast array of world views and values, not least when it comes to water and water bodies. But while specific worldviews and cosmovisions are unique to a particular group, there can be similarities or common areas of agreement among them, such as spiritual relationships to water and land environments, as well as a holistic approach. But they face many challenges in expressing and upholding their values. Key challenges facing Indigenous Peoples in respect to water governance can be summarized as:

- a failure to recognize important relationships between Indigenous Peoples and their land and waters, and how those relationships define local water governance and activities;
- a failure to recognize Indigenous-born responsibility to other species, land, and water by creating law and policy that prevent engaging in practices that uphold these responsibilities;
- a failure to realize the full extent of impacts from climate change that are already having a disproportionate impact on Indigenous Peoples due to their strong reliance on and connection to local environments. These include direct impacts, such as those from flooding and drought, as well as indirect impacts, such as shifts in the ranges of animal and plant species that place pressure on their identity, as existing relationships cannot be expressed and honoured;
- a failure to include local voices or indigenous knowledge and give them equal weighting in decision-making, instead relying on dominant Western scientific approaches to determine objectives as well as instrumental values;
- the imposition of new and non-sustainable water governance institutions, or initiatives based on Western management approaches, on Indigenous communities that have not been constructed within local knowledge or institutional frameworks and therefore may lack legitimacy within the Indigenous community or end up imposing one worldview to the detriment of another; and
- a failure to acknowledge the long-term impacts of colonialization, whether in the changed extent of geographic territories, the privileging of Western scientific approaches in decision-making, the privileging of instrumental values, or the interpretation, collation, and ongoing use of Indigenous knowledge.

Water values and valuation

Most water valuation approaches recognize that water holds multiple values to different groups but in practice the values most commonly defined and used are those pertaining to the uses to which water can be put – i.e. instrumental values – as opposed to intrinsic values or relational values. But hidden within an increased focus on water valuation is the issue that some values, by being easier to define or quantify, will often end up holding precedence over other types of values due to their relative tangibility and comparability.

Instrumental values are generally easier to define than other types of values, especially as they may be connected directly with economic values or be calculated as an assessment of units needed to accomplish a particular task. Quantification of economic or numeric values allows for some comparability between different needs

based on use per unit, or comparison of different resource needs by multiple users. Despite benefits, this can create difficulties when trying to make decisions in water governance that involve different groups of people with knowledge inherent in their respective world views, including the relationship between people and nature.

Relational values

As outlined in the *World Water Development Report 2021*, and in recent work by institutions such as the International Platform on Biodiversity and Ecosystem Services (IPBES) in sectors such as ecosystem services, instrumental and intrinsic values are not the only types of values held by individuals and communities regarding their environment. Intrinsic and instrumental values are not sufficient to describe the many relationships between people and their places that are being applied in real life, and other water values must be acknowledged.

Other types of values have been identified that are more strongly connected to social and cultural well-being and identity, including values relating to the “good life” (eudemonic values), societal held values, religious values, Indigenous values, place-based values, and relational values, with the last receiving much attention in connection with ecosystem services by IPBES and other parties. Whilst the definition of these values can differ, these values are commonly based around a series of virtues and preferences in connection with a relationship between people and their environments (Chan et al 2016), whether as individuals or as societies.

In 2014, IPBES released *IPBES-2/4: conceptual framework for the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, which included a definition of relational values. IPBES (2014) defines relational values as “*the values that contribute to desirable relationships, such as those among people or societies, and between people and nature*”. Relational values may encompass some intrinsic and instrumental values, but these will be defined within frameworks of “expected” relationships between people and their territories. The precise nature of such relationships differs according to local worldviews, traditions and understandings, as well as the rights and obligations inherent in honouring and giving effect to those relationships.

Decisions that include relational values or similar types of valuation as a starting point will often be based on the evaluation of proposed activities against expectations on how they will affect the relationship between communities and their environment, with inherent rights and obligations being called on to maintain the relationship in relational values-based management. For example, if the relationship between a people and its water body is based on an expected healthy state in a water body that, in turn, provides gifts to people, new instrumental needs

and their subsequent impact on the water body would be evaluated against the expected healthy state. In this approach, instrumental uses and values can still be applicable, but they are framed within rights and obligations inherent in usage, rather than just being a right to use.

Relational values are important for multiple reasons, but in the context of this report, relational values are those values that could be used to help frame discussions and decisions around enhancing community relationships and the use of water bodies within water governance, including not only rights to water but also obligations to water bodies and act as a bridge to better understanding values and approaches held by Indigenous Peoples. The inclusion of relational values enables a stronger understanding and inclusion of needs advanced by many groups reliant on local water bodies but whose motivations are difficult to articulate within the present focus in water resource management on instrumental values, and the contributions in this report help illustrate these different perspectives.

Indigenous values and governance

Indigenous scholarship from diverse parts of the globe has been highlighting values that mediate relationships between a community and its territory, and stressing how they are important in water governance. Examples include “*Water is sacred and underpins Aboriginal kinship connection in birth, life and death*” (Eckstein et al. 2018) in Australia, whereas in New Zealand “*Te Ao Māori (the Māori world), people are simply one component in the relational networks known as whakapapa, linked with all other life forms through their shared descent from earth and sky*” (Salmond 2014; Parsons & Fisher 2019).

Many Indigenous Peoples have values, and an associated ontological framework, linked to their territory, and some Indigenous values only find relevance or full meaning in these locations and through these relationships (Leonard et al. 2023). Despite the incredible diversity of Indigenous cultures, common threads in knowledge and values can be detected (Gould et al. 2019): concepts of a dynamic balance between different parts of an ecosystem, that sentience and kinship exist beyond the human world, a higher awareness of a community that includes a whole ecosystem, the idea that relationships embody both rights and obligations, a need to recognize reciprocity, relational approaches to science and knowledge, and the recognition that people shape the land and water and the land and waters shape people. While each group may express these concepts differently and in more specific forms, they are common to many locations around the world.

For many Indigenous communities, there is a concept of a “dynamic balance” between all components within their territory, whether flora, fauna, water bodies,

mountains, etc., and a belief that people's rights and obligations and "acceptable activities" are tailored to uphold this "dynamic balance". Some authors note that the dynamic balance is not set in stone, but there may be shifts over time (Gould et al. 2019). Patterns of changing water sources dominate communal and cultural life, and impacts on the land and water directly impact all aspects of community well-being.

Most Indigenous communities express a strong ethic of care and guardianship as central to governance, opposed to resource-centric approaches that focus on ownership and management, as expressed through their respective worldviews. Indigenous stewardship, in this conception, embodies a role in supporting water bodies and local environments to reach their fullest potential, especially a level of health and ensuring the capacity for water bodies to play their own roles in the relationship. At a basic level, governance means that a water body should flow as appropriate to its character, and that its health status and life force are able to maintain a dynamic balance among all those that are dependent on it. Water bodies such as rivers or lakes are enabled to reach their fullest potential. For these reasons, Indigenous Peoples should never be treated simply as stakeholders, as their rights and obligations continue to exist, irrespective of any formal recognition or support by States, but hold a place that is greater in meaning.

Other common themes outlined in Indigenous scholarship include values such as respect, reciprocity, and relatedness (Artelle et al. 2018):

Respect

Decisions regarding the environment are made with a conscious respect for the environment and an acknowledgement of the role that it plays in cultural lives or as part of kinship or relationship ties. Respect as a starting point involves an acknowledgement of the role of the land or a water body as an individual supersystem or as a living, more-than-human entity that is part of the same environment. Decisions will potentially be judged on whether they respect the water body. Respect also includes paying attention to protocols or conventions required to maintain relationships (Wilson and Inkster 2018).

Reciprocity

This acknowledges that there are both rights and obligations in response to the living, more-than-human entity and other entities within their realm, and that management is not simply a case of taking waters but consists of obligations that involve processes that acknowledge and reciprocate to keep things in balance and ensure that the river's needs are met. Reciprocity can be acted on in many ways, including acknowledgement of nature's gifts. Reciprocity is multidirectional and is

reflective of the different parts that all plant and animal life play in maintaining a dynamic balance.

Relatedness

A commonly held component of Indigenous worldviews is that there is no separation between people and their environment, and that everything in the territory is related. People and their environment learn from each other and are dependent on each other, and each has a role to play. Applying this value results in a different starting point for engagement and relationships with water bodies and the way that they are treated, when compared with water as a resource to be used.

Such relationship-based or stewardship approaches can sit in contrast to conventional approaches to water management that often stress the need for activities to meet or optimize predetermined objectives and outcomes decided by key stakeholders (Brierly et al. 2018). Because of this fundamental difference in understanding of the role and approach to water bodies, management and resources as concepts can be difficult for some Indigenous Peoples, as they pre-suppose a much more deliberate control of water bodies than a stewardship approach based on adherence to rights and obligations. While there may be similar activities in pursuit of objectives across the approaches, such as in rehabilitation or restoration, their purpose will differ between the different conceptions, grounded in the worldview. For example, values such as respect for a river represent a different starting place for conversations than one that automatically sees the river as a bundle of resources or instrumental values to be optimized, as noted in the following contributions.

Furthermore, such values may also provide the frame for communities beyond Indigenous Peoples as a basis for re-evaluating the relationship between local communities and their water bodies, enabling lessons to be drawn across the wider water sector beyond Indigenous territories (Linton & Pahl-Wostl 2023), and these are explored in the following contributions.

The opening contribution has been provided by the **Carcross/Tagish First Nation** from Canada; it expresses the central role of water through the community's many different meanings, expressions, and principles associated with water. It also touches on how these can be translated and applied as principles within the national institutional framework.

The next contribution has been provided by the **Dharriwaa Elders Group** from Australia; it focuses on the challenges of upholding Indigenous values and responsibilities within a national legal framework. It outlines important

relationships and identifies challenges in river management and what they desire in terms of partnerships to give effect to their values.

The contribution from the **Karen Environmental and Social Action Network** from Burma/Myanmar provides an overview of how relationships with water are manifested throughout their culture, including the use of oral tradition and governance systems throughout the territory, as well as in daily life within the Salween Peace Park.

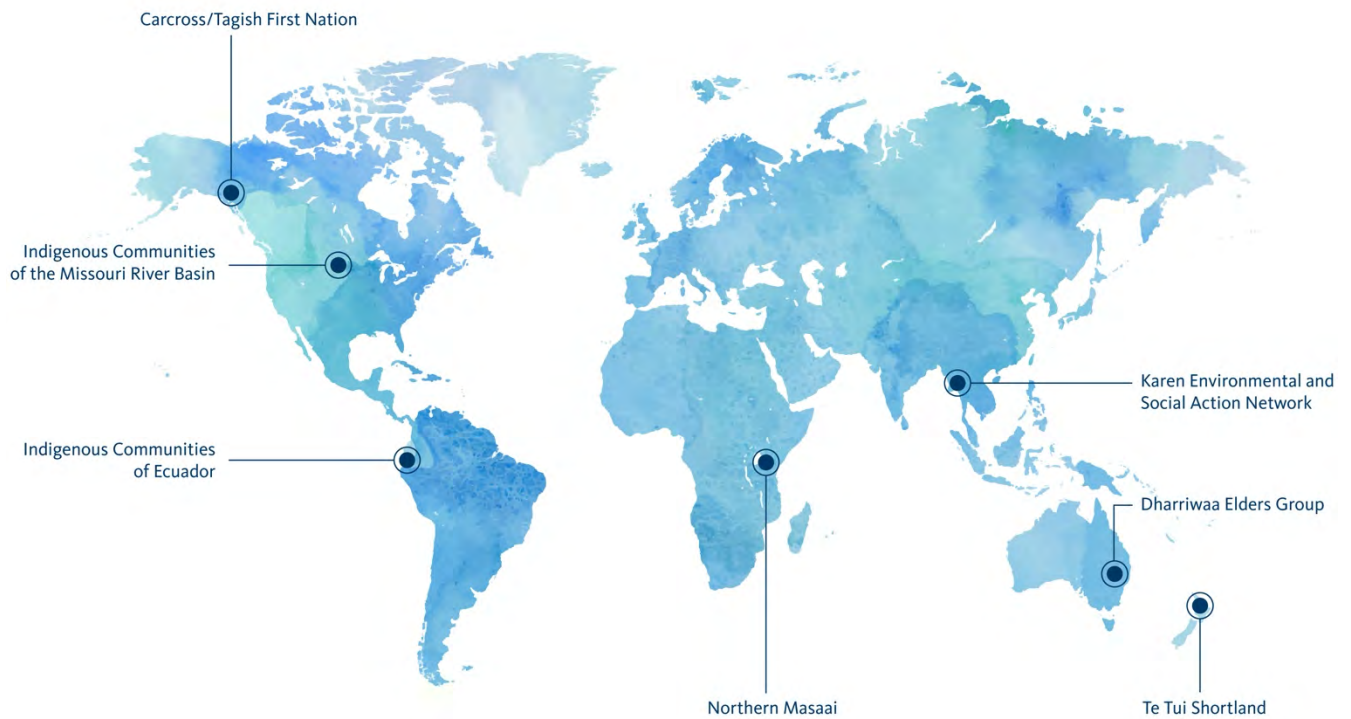
The next contribution is from the **Northern Maasai** from Tanzania and provides knowledge on how the relationships with water and water sources interact with the culture and identity of the Maasai peoples and the important role that water plays in life stages and guardianship responsibilities.

The contribution from our first boundary walker, **Humberto Cholango** from Ecuador, shows how Indigenous values and structures continue to be maintained and expressed within new institutions that have been enforced on their community from States, and how these can be harnessed to address water challenges.

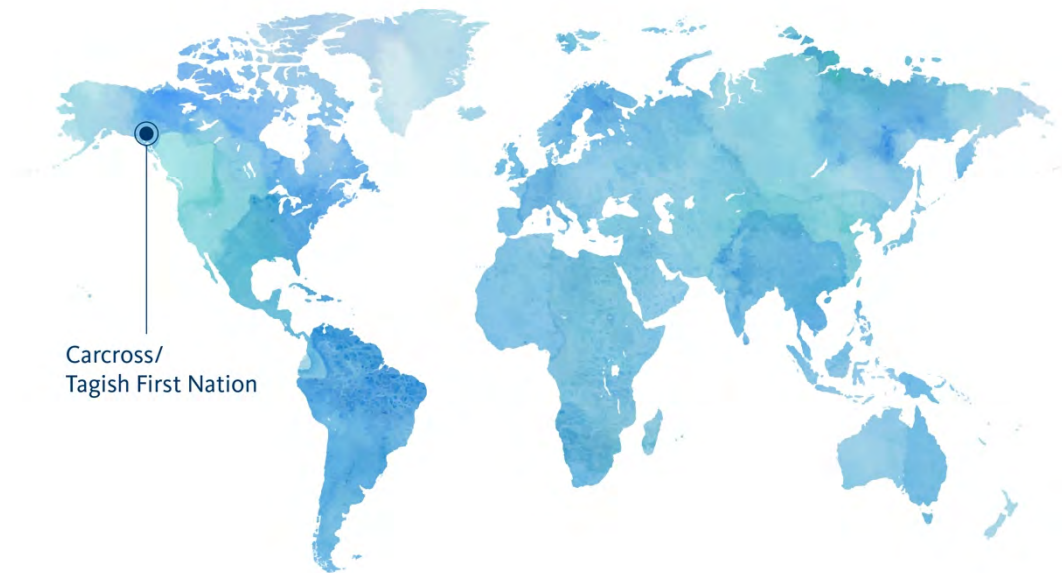
The next contribution, prepared by **Jennifer Vielleux** from the United States of America, provides an overview of how Indigenous water values transcend Western conceptions of water and intersect with the mosaic of national laws and institutions. She points out the potential for improved cooperation between Indigenous Peoples and national frameworks.

The final contributor, **Te Tui Shortland** from Aotearoa New Zealand, writes about Indigenous water cosmovisions of Aotearoa, customary water law and impacts on water system dynamics, the importance of stewardship, and interactions with colonial history.

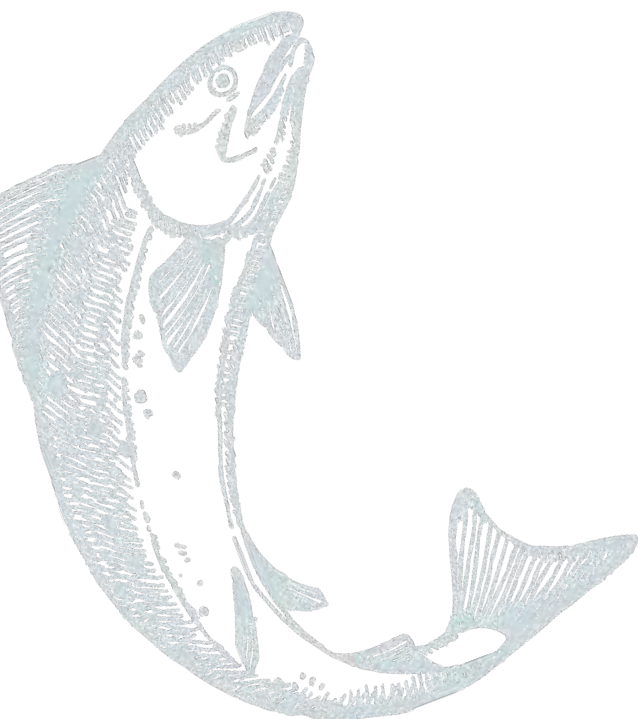
In our own words: Contributions from Indigenous Peoples



Carcross/Tagish First Nation



Acknowledgements



- Resetting water relationships
- Reimagining water futures
- Revolutionizing global planetary water wisdom(s)
- (through Tagish and Tlingit Indigenous water philosophy and customary practices)



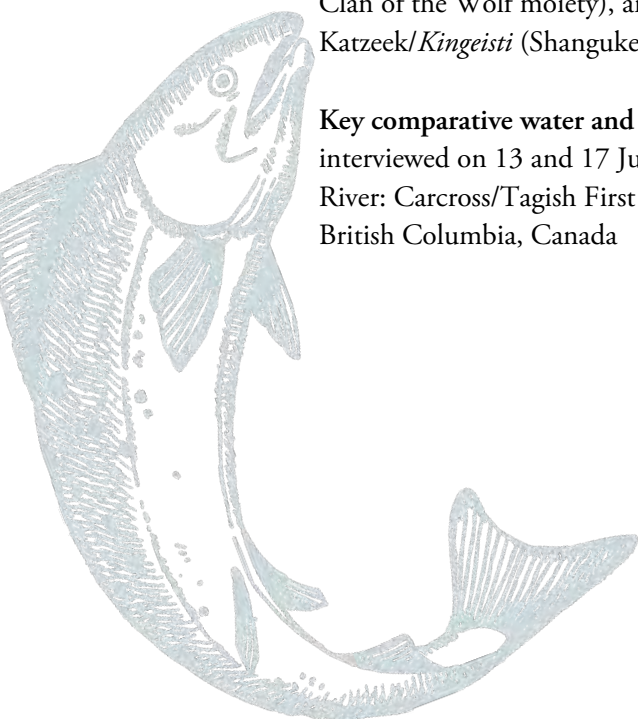
In the Tagish language moon is “when the sun reaches its highest point moon”. In the Tlingit language it is Kayaani Disi (“green leaves moon”) – 21 June 2021/summer solstice/Indigenous Day in Canada.

In dedication to *Kingeisti* (David Katzeek), Salula Ngorsiololo, and Meshuko Lesitik (Maasai youth)

In remembrance of missing and murdered First Nation/Indigenous children found in mass graves at residential schools

Facilitated by Dr Eleanor Hayman and peer-reviewed by Mark Wedge/*Aan Gooshú* (Deisheetaan Clan of the Crow moiety), Colleen James/*GoochTláa* (Dakl’aweidí Clan of the Wolf moiety), and coastal Tlingit community consultant David Katzeek/*Kingeisti* (Shangukeidi Clan of Klukwan, Eagle moiety)

Key comparative water and philosophical concepts from Tagish and Tlingit Elders interviewed on 13 and 17 July 2020 in Carcross, Crag Lake, Chootla Lake, Tagish River: Carcross/Tagish First Nations traditional territory, Yukon Territory and British Columbia, Canada



*Yaa Heen Koosge*² (Water and Wisdom) / *Tu Nda*³ (Water Medicine)

Key words:

Tu (Tagish for water); *Heen* (Tlingit for water); Carcross/Tagish First Nation; eco-linguistics; eco-identity; Humilocene; Anthropocene, inter-species ethnography; C/TFN Water Declaration; Yukon Water Forum 2019; decolonization; epistemic fluency/literacy

Haa da sei goo atoo yeatee (Tlingit for “Our Life is in the water, our breath is in the water.”) – coastal Tlingit Elder *Kingeisti*/David Katzeek, Shangukeidi Clan of Klukwan, Eagle moiety, October 2013

“Water is our relative.” – Tagish and Tlingit Elders Mark Wedge and Colleen James, July 2020.

“Water Man was the husband of the mysterious Water Lady once met by the legendary Beaver Man. According to the Tagish and Inland Tlingit, however, he is in charge of all bodies of water and of water-dwelling animals and is thus a kind of counterpart of Mountain Man. He too seems to be potentially malevolent.” – McClellan (1972), in C/TFN Statutes

“Thinking like a watershed” – traditionally the Tagish and Tlingit conceived their geography (earth scripts) in deference to drainage systems. In turn they navigated themselves in relation to the sea and the flow of rivers, as evidenced through the complex and sophisticated Tagish and Tlingit languages (Hayman, Wedge, & James 2018; see link in the appendix).

Shuka l̥x ux̥s̥ (Tlingit language for “calling the end back to the beginning”) – Elder *Kingeisti*/David Katzeek, Tlingit Clan Conference 2019, August 2020

The Tagish and Tlingit First Nation peoples describe and showcase what might be called an aqua-centric culture. Water is the very fabric of their DNA, the fingerprint that shapes their clan names, the force behind their migration stories. Water drives their ethics and frames, underscores their philosophy – they consider themselves “part of the land and part of the water” – and sculpts their hydrological birthed landscape. Water upholds and informs the fundamentals of their oral narratives, is embedded in most of their Tagish and Tlingit place names, and is an intimate part of their creation stories.

² Tlingit language for “Water and Wisdom”.

³ Tagish language for “Water Medicine”.



The Tagish and inland Tlingit comprise the Carcross/Tagish First Nation (C/TFN), whose traditional territory embraces the Southern Yukon Lakes that straddle the Yukon Territory and British Columbia in northern Canada. The lakes are the sacred headwaters of the Yukon River, which runs north and west through Alaska to the Bering Sea. The river therefore connects 54 First Nations and Tribes both literally and imaginatively.

With this weighty hydro-stewardship responsibility, the C/TFN is fully aware of the fragility, interconnected challenges, and a multitude of conflicting water perspectives that threaten the stability of the southern lake system, impact on food sovereignty, and are therefore a form of hydrological violence undermining customary practices, breaching treaty agreements, and directly contravening Tagish and Tlingit water “law”. Their water activism – together with deep ecological water wisdom and history – constantly seeks to mitigate the ongoing promotion of an instrumentalized, disembodied view of water that stems from a colonially configured monocultural way of knowing and behaving.

This is not an abstract debate, as the Elders attest with evidence throughout this paper. Drawing on the wisdom from the ancestors – the *Haa Shagoon* – the Elders make the critical case for a more caring, respectful, reciprocal relationship with all water bodies, recognizing the animistic personalities embedded within lakes, rivers, ice, and glaciers (*Sitkine* – this river in Tlingit translates as “the water that bites”; C/TFN Statutes – Book 1). Water is considered the ultimate teacher, a library of knowledge, a transformative medium with the deepest of spiritual dimensions.



Image 1: The three inland Tlingit First Nations (C/TFN, Taku River Tlingit First Nation and Teslin Tlingit Council). Photo credit: Carcross/Tagish First Nation.

Lande Kut'e kuk'eh yakwidih (Tagish language for “We live by our law, our rights”)

A yax yatee (Tlingit language for “Legal – it’s right”)

“It’s getting late to do something. We (all) need to sit down together. For the future, look at water all the time. We (all) need to do something.”

Elder Stanley James, July 2020

The Elders are challenging the normalized global production of water knowledge. This has failed in many parts of the world, as well as being a key component in the downfall of many past civilizations. They argue compellingly for a serious acknowledgement and implementation of Indigenous water wisdom in general, and Tagish and Tlingit historical customary water practices and ways of knowing and being more specifically.

Ultimately, water is finite; it is not a resource. An ethics of care, collaboration, and consideration is being advocated by Indigenous Peoples around the Earth. These living dialogues leapfrog political power plays and introduce a resounding set of water fluencies, literacies (a form of epistemic justice), and healing hydro-citizenship models for possible future inter-species existences. Water connects; it rarely dislocates. Water teaches; it doesn’t deal with ignorance. Water is pivotal, conditional, and a mystical element in every aspect of all life, as the Elders have described here.



Image 2: The three inland Tlingit First Nations at *Haa Kus Teyea*, August 2019. Photo credit: C/TFN.

What Elders Stanley James and Norman James have been emphasizing throughout these interviews is the fundamental importance of ancestral wisdom, strength, and standing together not just as humans but with all life on Earth. There has been enough hydrological violence globally and locally, as the Tagish and Tlingit have witnessed.

The subtleties and nuances of a Tagish and Tlingit relationship with water have no disconnect between the spiritual element and that manifested physically in bodies of water. First, this is witnessed by the medicine wheel. The medicine wheel consists of four equal parts: the physical, spiritual, intellectual, and emotional, which provides one model for the clan-based (water) governance structure. Second, traditional oral narratives complement the medicine wheel, having distilled 10,000 years' worth of Tagish and Tlingit history embodying ways of being and knowing. Third, the Tagish and Tlingit languages (eco-linguistics) reveal water understandings in their structure and literal meanings (Elder Norman James is a fluent Tlingit speaker). Lastly, over 75 percent of the Tagish and Tlingit place names that all Elders mentioned are water-related and embody empirical scientific water knowledge. Short of hosting the Yukon Water Forum in December 2019 at the Learning Center in Carcross (facilitated by Elder Colleen James and with a powerful water ceremony by Elder Harold Gatensby), the C/TFN as a whole promotes and shares these water knowledges for a revolutionary water future(s).

The post-colonial era is ending. It is not about Indigenous Peoples being absorbed into “Western-style” systems of water governance, but rather the “West” recognizing that its water strategies and governance systems have largely failed within the Anthropocene. This is the Indigenous century – something that has been called the *Humilocene* (a First Nations approach and attitude towards an inter-species ethnography and indeed relationship(s) with the whole “pluriverse”) and that many Indigenous cultures have resonated with and practised for thousands of years. This is a time for global hydrological citizenship across all cultures, as all four Elders constantly emphasize.

Elders Colleen James and Mark Wedge always refer to Tagish and Tlingit stories as a point of departure in all manner of contexts. Oral narratives are foundational to the Tagish and Tlingit cultures, containing within them profound teachings applicable in a multitude of ways. In particular and for this paper they refer to the Crow/*Yeil* cycle of Tlingit oral narratives. They offer, for example, the story of when *Yeil* created the Southern Yukon lakes by flying over the land and dribbling water and fish from his beak. This was achieved by *Yeil* stealing water from Petrel (or the old man) – not to own it for himself, but to share it with all other species.

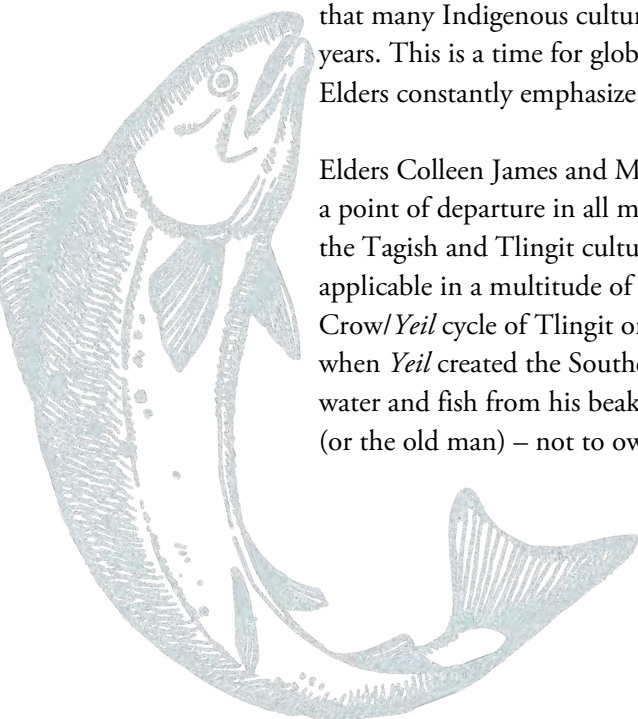




Image 3: Honouring the ancestors (*Haa Shagoon*), Carcross, 2019. Photo credit: C/TFN.

There are many versions of this story. One version is below and showcases, as all Tlingit and Tagish stories do, the intimate connections between values, virtues, and the physical landscape – often in very amusing and unorthodox ways. This ancient Tlingit oral narrative – “How Crow Got Water” – will, most appropriately, take the form and shape of a fitting aqua-centric conclusion to this paper.

How Crow Got Water (Version One), 27 September 1950, Carcross.

Told by Tagish and Tlingit Elder Angela Sydney and recorded by anthropologist Catherine McClellan

Crow went outside. It was the wintertime, and he got some frozen excrement and brought it back inside.

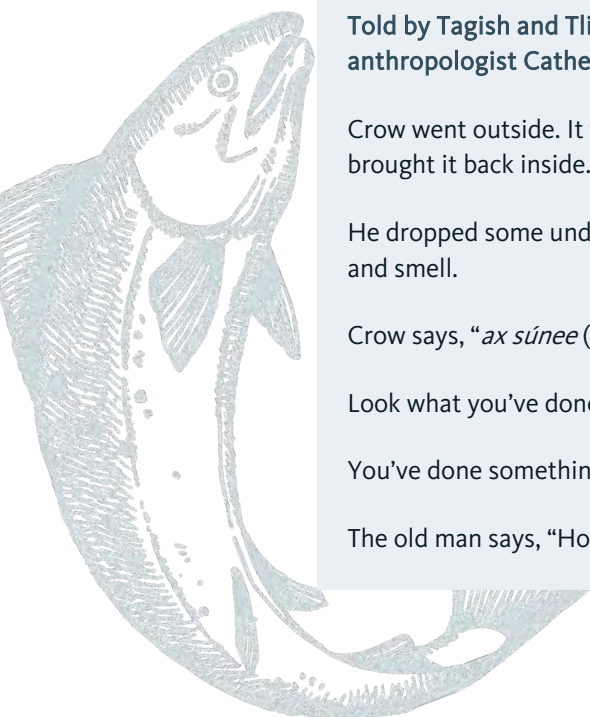
He dropped some under the man [who had the water]. Soon it began to thaw out and smell.

Crow says, “*ax súnee* (my uncle, father’s clan), what’s that smell?

Look what you’ve done.

You’ve done something to yourself! ”

The old man says, “How come I did that? Maybe I stepped on it.”



So, he went outside to clean himself up.

And Crow drank as much water as he could. He almost burst.

When the old man started coming in, Crow flew up through the smoke-hole.

And Crow always makes a noise when he flies up.

The old man was mad. He said to his powers of the roof hole, "Grab him!"

So, Crow got stuck. He tries to fly, and he can't fly.

The old man gets dry pitch and smokes him. [Angela explained that this dry pitch makes good kindling.]

Finally, Crow is almost choked, but he gets away.

Then he drops down a little ways. He is so full, he can't move.

He takes a good rest, and then he starts to fly, and he drips fishes and lakes all over the place.

In: My Old People's Stories: A Legacy for Yukon First Nations. 2007. 3 vols. Julie Cruikshank, ed. and additions. Catherine Kernan, illustrations. Occasional Papers in Yukon History 5 (1-3): 257. Whitehorse: Government of Yukon, Cultural Services Branch

C/TFN Water Declaration

(based on the Tagish and Tlingit Elders' wisdom and awaiting ratification)

compiled by Dr Eleanor Hayman

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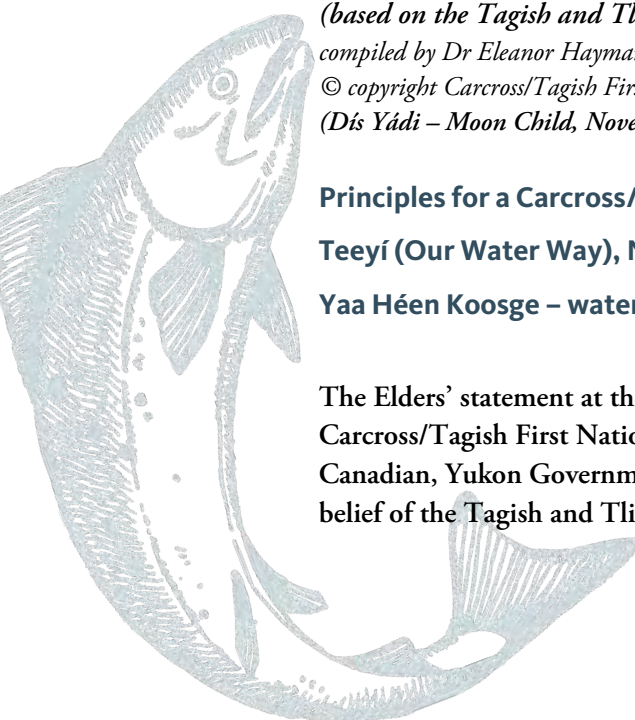
(Dís Yádi – Moon Child, November 2019)

Principles for a Carcross/Tagish First Nation Water Act

Teeyí (Our Water Way), Nda' tu (Water Medicine)

Yaa Héen Koosge – water wisdom, Héen/Tu (Water) Context

The Elders' statement at the forefront of the Final Declaration of the Carcross/Tagish First Nation – the self-governing treaty signed with the Canadian, Yukon Government in 2005 – emphasizes in particular the inherent belief of the Tagish and Tlingit of being "part of the land and part of the water":



“Tàgish kut’ìnè’ yīt’ē, Łingít chuḥ yīt’ē, dàdidi nenh kay’ yànǐzhā akùt’ē. Dàdidi nenh kay’ yèh chuḥ ǐkànǐ t’ē.”

(Tagish language)

“Taagish K̄wáan haa seteeyí k̄a Lingít haa seteeyí, haa shegóon áwé ch’áagudax̄ x̄aat yáx̄ yenax̄ kawsiaa. Éch áwé yá tl’étgi een haa site, k̄a yá héen.”

(Tlingit language)

“We who are Tagish and we who are Tlingit, our heritage has grown roots into the earth since the olden times. Therefore, we are part of the earth and the water.”

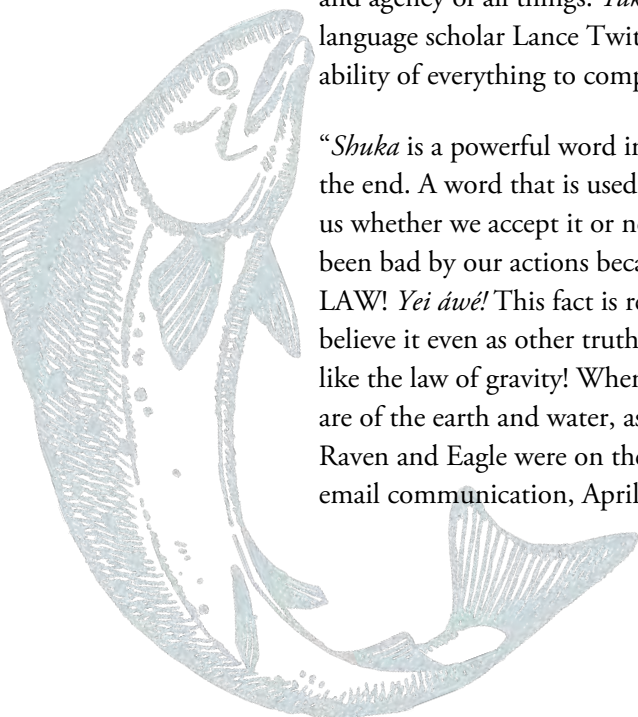
Elders’ Statement, C/TFN (first three lines); Final Agreement of C/TFN with the Canadian Government, Ottawa 2005

“*Haa daséigu a too yéi yatee*” (Our life is in the water; our breath is in the water) – David Katzeek, Tlingit Clan Conference, October 2013, personal communication

“*Ldakát át ayakghwahéiyagu khudzitee*” (The spirit in all things) – Lance Twitchell website, 2015

The Tlingit language has a precise and indeed sacred phrase to describe the spirit and agency of all things: *Yakg wahéiyagu*. *Yakg wahéiyagu* is described by Tlingit language scholar Lance Twitchell in his Tlingit online dictionary (2015) as “the ability of everything to comprehend language and intentions”.

“*Shuka* is a powerful word in our [Tlingit] language. It means the beginning and the end. A word that is used in the religious world is “eternal”. This *Shuka* is with us whether we accept it or not. We live with it. It becomes part of our ways. If it has been bad by our actions because of our lack of knowledge, it will be bad. IT IS A LAW! *Yei áwé!* This fact is revealed in all our oral literature. You don’t have to believe it even as other truths are not believed, but it does not change the truth, just like the law of gravity! When we respect ourselves we are respecting the earth. We are of the earth and water, as first our oral literature was of the earth and water. Raven and Eagle were on the waters.” – Elder David Katzeek/*Kingeisti*, personal email communication, April 2016



“When we [Tlingit people] say ‘*yáa át wooné*’, that means to learn about it [water]. You are going to meditate on it; you are going to think on it; you are going to develop a relationship with it.” – David Katzeek/*Kingeisti*, 6 September 2014, personal communication

“A lot of people translate the Tlingit concept *Woochéen* as ‘we are all supposed to work together as human beings’. That is part of it but not all of it. We are to work with it; we are to be in harmony with it. We are not to destroy it; we are to work with it. You are going to work with the water; you are not going to work against it. Big words ‘*Woochéen*’. You are to work together. And what it means is that the mind, the body, the soul, and the spirit – all of that being is put together and focused on one particular subject. That is how you begin to develop a relationship.” – David Katzeek/*Kingeisti*, 6 September 2014, personal communication

“Tlingit teachings emphasize the concept of a *daa tutan i yux’atangee*, which means ‘to weigh your words with care’ and reflects the power of spoken words themselves.” – David Katzeek/*Kingeisti*, April 2016 personal email communication

Core questions

How does *héen/tu* work, function, define identities, construct, and even produce knowledge in the Tagish and Tlingit cultures?

How has *héen/tu* influenced and co-evolved with the Tagish and Tlingit worldview?

How has *héen/tu* given meaning and shape to Tagish and Tlingit cultural practices, traditional oral narratives, and place names?

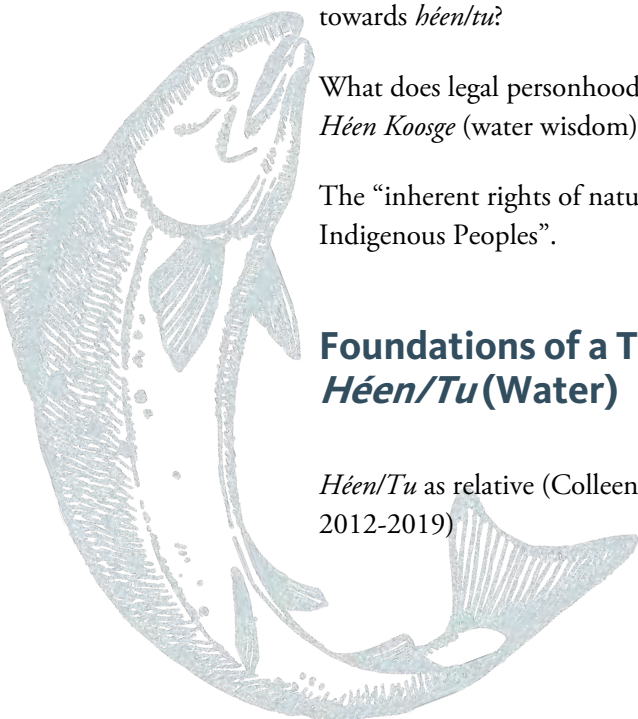
How do “we” re-establish relationships, obligations, ethics, and responsibilities towards *héen/tu*?

What does legal personhood look like for *héen/tu* within Tagish and Tlingit *Yaa Héen Koosge* (water wisdom)?

The “inherent rights of nature” embrace and broaden the “inherent rights of Indigenous Peoples”.

Foundations of a Tagish and Tlingit approach to *Héen/Tu* (Water)

Héen/Tu as relative (Colleen James; Harold Gatensby; David Katzeek; Mark Wedge 2012-2019)



Héen/Tu gives one meaning to the essence and description of the (coastal) Tlingit people. One meaning of Tlingit (as a people) is “people of the tides” (The Canadian Encyclopaedia 2018).

Héen/Tu as inspiration for “marrying the water”, mimicking/reflecting/honouring traditional oral Tagish and Tlingit narratives (Swanton 1909; McClellan 1951; Katzeek 2015).

Héen/Tu and the *Shaanakheeni* (Yukon River) headwaters as particularly significant, not just for C/TFN but the whole watershed (Charlie James 2015).

Traditional linguistic concepts

Héen/Tu as giving place-based meaning, location in the world through the language. For example, “Inland from the sea”, “Towards the sea”, “upstream”, and “downstream” are core aqua-centric directionals in the Tlingit language (Tagish and Tlingit Elders; Twitchell 2015).

Héen/Tu and respect as one of the most powerful words in the Tlingit language *yáa át wooné* (C/TFN community and David Katzeek 2015).

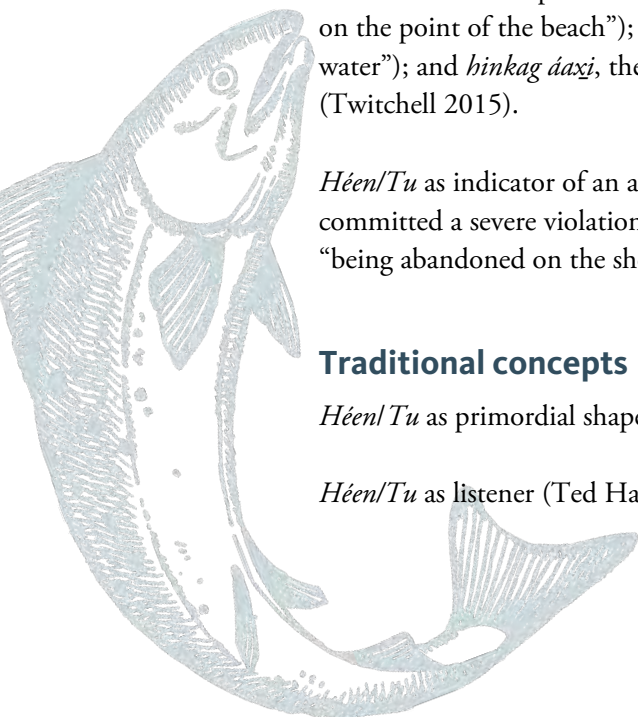
Héen/Tu as indicator in the Tlingit language of many animals, movement, and positioning in relation to water – particularly birds and water animals (Twitchell 2015). Activities and types of movement are in relation to water or the hydrology and geography of water. For example, the fish that in the English language is called mackerel is *dákdēsax’aak*, whichh literally translates in Tlingit as “swims underwater out to sea” (Twitchell 2015). The polar bear, *héen-táak-xóots-Ÿł*, is literally translated in Tlingit as “in the bottom of the water bear” (Crippen 2012). Three excellent bird examples are: *eeł lukakées’i*, which translates as snipe (literally “flood on the point of the beach”); *hinyikl’eixi* is the dipper or water ouzel (“dancer in the water”); and *hinkag áaxj*, the red-throated loon or arctic loon (“cries on the water”) (Twitchell 2015).

Héen/Tu as indicator of an abuse of clan law – for example, when someone has committed a severe violation, he or she might become clanless; in Tlingit it is called “being abandoned on the shoreline”.

Traditional concepts

Héen/Tu as primordial shape-shifter (Nora Dauenhauer 1990)

Héen/Tu as listener (Ted Hall 2013)



Héen/Tu as healer (Kitty Grant regarding shamanism/medicine men and women: 2013; Louise James regarding hot springs: 2013; Lance Twitchell regarding spring water as medicine (*nda* is medicine in Tagish) in Tlingit online dictionary 2015)

Héen/Tu as spirit/spiritual dimension (Mark Wedge 2013; Ted Hall 2013; Tlingit oral narratives 9000 BP)

Héen/Tu as “*haa latseent*” (strength) (Lance Twitchell 2015; Louise James – bathing in lakes and rivers: 2013)

Héen/Tu as nourishment within a Tagish/Tagish salmon culture (salmon is a keystone species; the Tagish and inland Tlingit are “salmon people”) (Colleen James 2013)

Héen/Tu as a book that can/must be read – ecological or hydrological literacy (Elizabeth Nyman 1993)

Héen/Tu as “*hà kus teyea*” (the Tlingit way) and the basis of Tlingit and Tagish cultural practices (C/TFN Elders via Colleen James and Teslin Tlingit Council biennial celebrations 2013)

Héen/Tu as one of four basic ingredients for life (Harold Gatensby 2012)

Héen/Tu and Fish mother, *Xat Tlaa*, provider of food (south end of Little Atlin Lake, place that never freezes over in winter (hot spring there? – description in Angela Sidney’s place name manuscript, 1980)

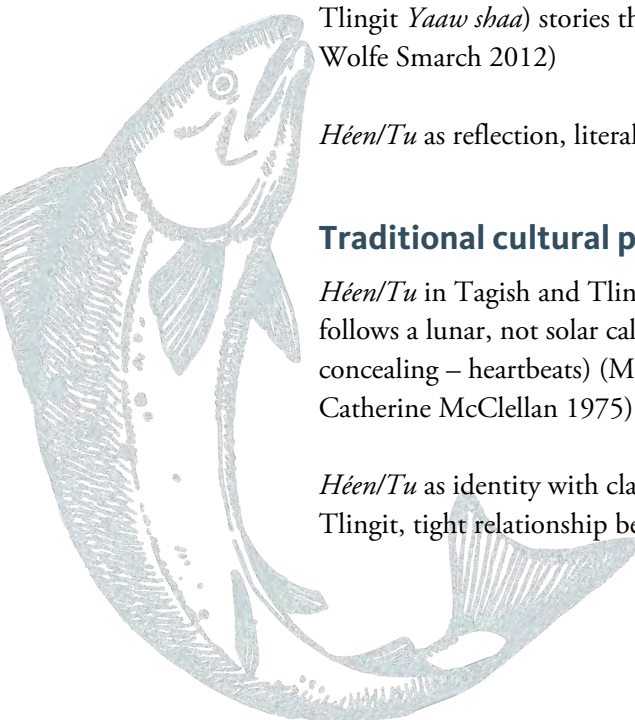
Héen/Tu as agent with Fish mother/Fog woman/Creek maiden/Herring maiden (in Tlingit *Yaaw shaa*) stories that Crow/*Yeil* marries (Colleen James 2013; Keith Wolfe Smarch 2012)

Héen/Tu as reflection, literally and metaphorically (Harold Gatensby 2012)

Traditional cultural practices

Héen/Tu in Tagish and Tlingit seasonal hunting, trapping, and fishing cycles follows a lunar, not solar calendar (i.e. dependant on the tides/water; revealing and concealing – heartbeats) (Mark Wedge 2013; coastal Tlingit/inland Tlingit Catherine McClellan 1975)

Héen/Tu as identity with clan names “*Haa saaxi*” (CTFN). Also, with coastal Tlingit, tight relationship between clan names, locations, and the agency of water



Héen/Tu as basis for over three quarters of place names in the region. Empirical scientific knowledge – hydrological, ecological, geological, and geomorphological knowledge embedded within them (C/TFN; Angela Sidney 1980)

Héen/Tu agent in many Wolf and Crow clan origin stories and histories of their arrival in the Yukon region (Angela Sidney; Lucy Wren; Elders in everything recorded by Catherine McClellan from 1950 onwards)

Héen/Tu as compensation for wrongdoing/corrective wrongdoing

Héen/Tu and drowning – tradition is that the lake is respectfully left alone: no boating/canoeing, swimming, fishing, setting nets, etc. at all until the body is found and Elders have decided on the appropriate protocol (Teslin Tlingit Council, TTC celebration 2013; Kitty Grant 2013).

Traditional beliefs

Héen/Tu in glacier form is recognized as sentient, alive – with attitude (Cruikshank 1998, etc.).

Héen/Tu as soundscape and/or sound-marks in Tagish and Tlingit place names. For example, one creek is known as *Kuk'abéeni Tlien* (“Big fish tail creek” because of the noise fish make slapping the water with their tails) (C/TFN; Angela Sidney 1980).

Traditional virtues/values

Héen/Tu as teacher – humility; water seeks the lowest path (Mark Wedge 2012)

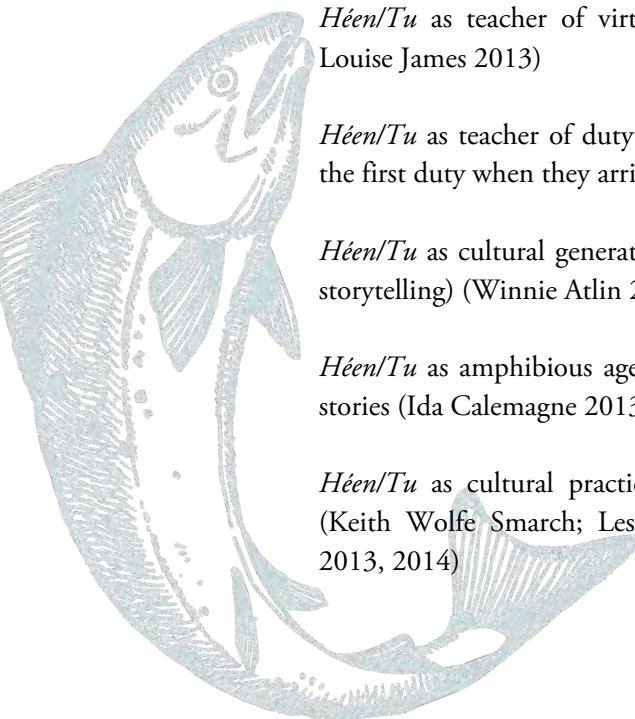
Héen/Tu as teacher of virtues – courage, discernment, humility (Annie Austin; Louise James 2013)

Héen/Tu as teacher of duty – chore of collecting water (and wood) by children as the first duty when they arrive in camp (Colleen James; Leslie Johns 2014)

Héen/Tu as cultural generator of oral storytelling (water carrying rewarded by oral storytelling) (Winnie Atlin 2013)

Héen/Tu as amphibious agent – the frog (shamanic power) in Tlingit and Tagish stories (Ida Calemagne 2013)

Héen/Tu as cultural practice (as ice) connecting places/ice bridges for trapping (Keith Wolfe Smarch; Leslie Johns; Mark Wedge; Seki Wedge; Heather Jones 2013, 2014)



Modern relationships with water and water wisdom for the future

Héen/Tu as nexus for activism (Bev Sembsmoen 2013) – for example, the “Idle No More” movement birthed in December 2012 by three women: Amnesty International (2013) says, “changes to the Canadian Environmental Assessment Act, the Fisheries Act, the Navigable Waters Protection Act, and the proposed Safe Drinking Water for First Nations Act have profound implications for the rights of Indigenous peoples as set out in treaties, affirmed in the constitution, and protected by international human rights standards”.

Héen/Tu as connection for female strength and power (Colleen James; Bev Sembsmoen; Shirley Lord; Idle No More 2013)

Héen/Tu knowledge is critical for intergenerational transfer (Charlie James 2015)
Héen/Tu changing water forces, flows, and disruptions generated by humans must be monitored carefully – habitat/biodiversity loss (Patrick James 2015)

Héen/Tu as a major concern with the potential combination of flooding and the Southern Lakes Enhancement Project (Yukon Energy, still under debate as of 2021)

Héen/Tu in traditional/modern ceremonies

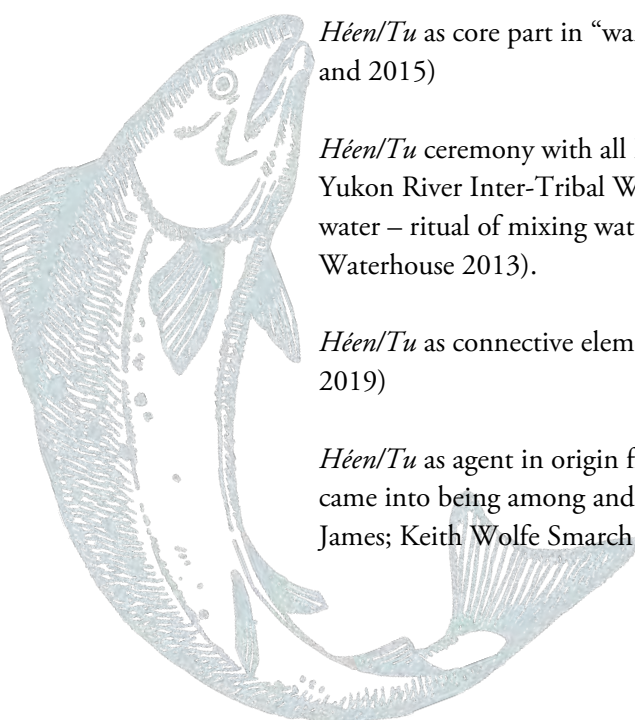
Héen/Tu as essential in ceremony (*Haa Kus Teyea gaik*) in hunting – cup of water to respect killing of moose/caribou, to say thank you that the moose offered itself. Drink half of the water yourself, and put the other half in the moose’s mouth, so the moose can go on its spiritual journal. Equally on returning fish bones to the water (Kitty Grant 2013)

Héen/Tu as core part in “warming of the hands” (Tlingit Clan Conferences 2013 and 2015)

Héen/Tu ceremony with all First Nations of the Yukon River Watershed in the Yukon River Inter-Tribal Watershed Council biennial meetings. Honouring the water – ritual of mixing waters from the entire watershed (Harold Gatensby; David Waterhouse 2013).

Héen/Tu as connective element – brother (Harold Gatensby; Yukon Water Forum 2019)

Héen/Tu as agent in origin flood stories and Raven stories – how the Tagish peoples came into being among and within a hydrological aqua-centric world (Colleen James; Keith Wolfe Smarch 2013)



Héen/Tu as basis for empirical scientific knowledge (*ishkaheeni* is oxygenated, cold water) (David Katzeek/*Kingeisti* 2013)

Héen/Tu as Tlingit shamanic tool – water as metaphor (Kitty Grant 2013)

Héen/Tu as aquatic “directional” – aqua-centric relationship with the direction of the flow of water in Tlingit language and philosophy (Twitchell 2013; David Katzeek/*Kingeisti* 2014; Angela Sidney 1980)

Héen/Tu as sense of place and therefore identity (revealed through cognitive mapping with C/TFN: Winnie Atlin, Ida Calemagne, and Norman James 2013, 2019)

Héen/Tu as framework for aqua-centric cultural rhythms – glacier-fed southern Yukon lakes rise and fall; also freeze-up and break-up of ice (Mark Wedge 2013, Colleen James 2013; Angela Sidney 1980)

Héen/Tu as currency in relation to “modern water” – the history of a modern abstraction and the erosion of Tlingit and Tagish identity (Norman James 2013; Jamie Linton 2007)

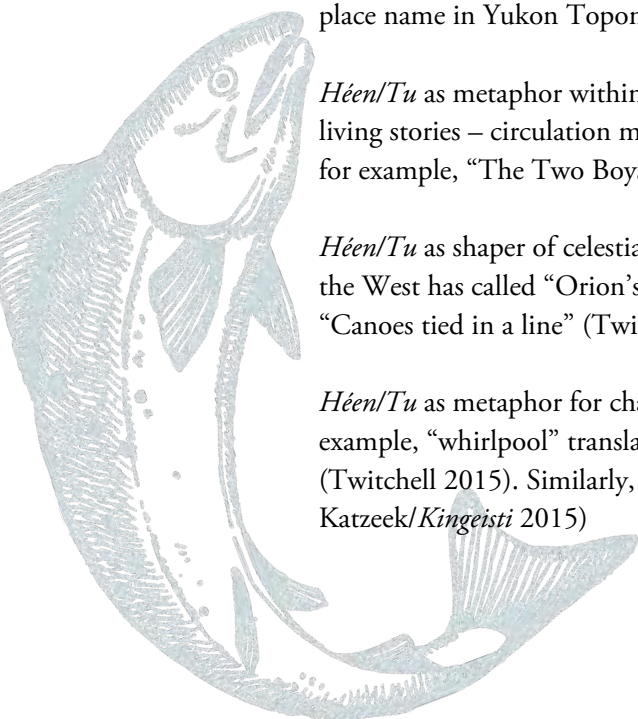
Héen/Tu as inspiration for patterns/designs/symbols in Tlingit material culture – for example, ceremonial masks, ceremonial woven hats, ceremonial totem poles (Keith Wolfe Smarch 2013; David Katzeek/*Kingeisti* 2014)

Héen/Tu as shaper of water-based technology, including canoe design and fishing methods (especially coastal Tlingit canoe design and, for example, *Deasdeash Lake* place name in Yukon Toponym Gazetteer 2019)

Héen/Tu as metaphor within Tlingit and Tagish storytelling for “living water” and living stories – circulation metaphors especially (Tlingit and Tagish oral narratives; for example, “The Two Boys who drifted down the [Yukon] River” ...)

Héen/Tu as shaper of celestial constellations – for example, the constellation of what the West has called “Orion’s Belt” is described within a Tlingit worldview as “Canoes tied in a line” (Twitchell 2015)

Héen/Tu as metaphor for chaos and calm (emotional states) within storytelling – for example, “whirlpool” translates literally as “navel” and is a metaphor for chaos (Twitchell 2015). Similarly, a “slack tide” is a metaphor for calm (David Katzeek/*Kingeisti* 2015)



Héen/Tu and agency in traditional oral narratives – for example, The Flood Story; Animal Mother; Wealth Woman; Two boys who drifted down the Yukon River; Crow/*Yeil* steals Water; Crow and Fish Mother

Héen/Tu is not only a model for the circulation of the Tagish and Tlingit virtue of *yaa at woone*, but also the model for the pivotal Tlingit concept of *Shuka*. It is, most importantly, a form of what Eurocentric practices and international law call “intergenerational justice”. From an eco-linguistic mandate, these are the storytellings – the sustainable discourses that can inform global water ethical debates.

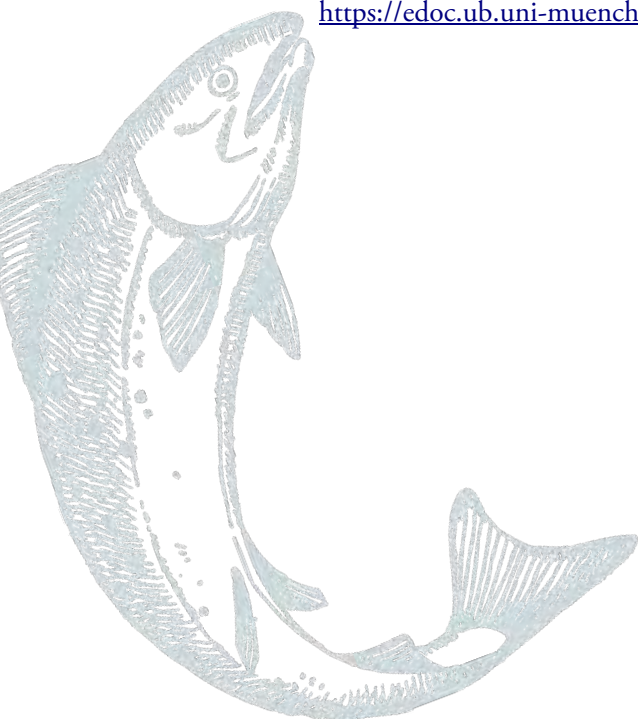
This C/TFN Haa Héen Kusteeyi (Our Water Way)/Nda’ tu (Water Medicine) is based on interviews conducted with C/TFN Elders, intellectuals, and knowledge keepers in August/September 2012, 2013, 2014, 2015, 2019, 2020, and 2021; conversations, discussions, meetings, and presentations with C/TFN community and government 2012-2021; conversations and interviews with coastal Tlingit Elders and educators 2013-2020; Yukon River Inter-Tribal Watershed Council staff and biennial conferences 2010-2014; Tlingit Clan Conferences 2013 and 2015; Ha Kus Teyea Celebration at Teslin 2013; and archival/email research, specifically Tagish and inland Tlingit Elders with Catherine McClellan and Julie Cruikshank research material 1949-2006.

Links

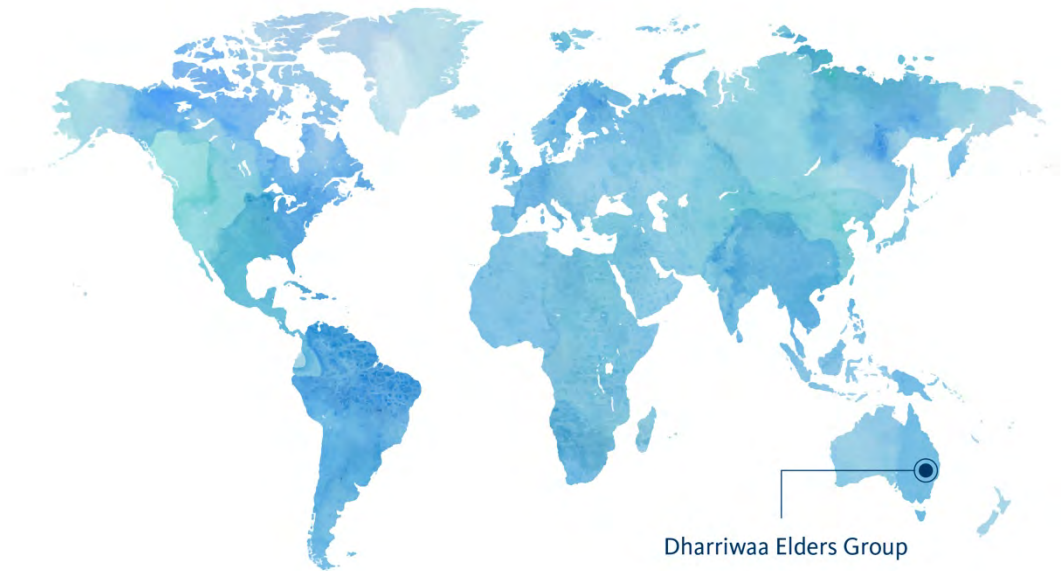
http://assets.yukonarchives.ca/McClellan_My_Old_Peoples_Stories_Part_2.pdf

http://assets.yukonarchives.ca/McClellan_My_Old_Peoples_Stories_Part_3.pdf

https://edoc.ub.uni-muenchen.de/22368/1/Hayman_Eleanor_R.pdf



Dharriwaa Elders Group



Acknowledgements



Where we are

Dharriwaa Elders Group (DEG) is from Walgett, a river town of about 2,100 people, the majority Aboriginal. Walgett is where the Baawan (Barwon) and Ngamaay (Namoi) rivers meet, upstream of the town of Bourke (Figs 1, 2). The Baawan and Ngamaay rivers are part of the Northern Murray-Darling (Baaka) Basin, in the state of New South Wales (NSW), in south-eastern Australia. It is in Gamilaraay Country,⁴ close to the borders of Ngiyambaa and Wayilwan Countries, and is now home to Gamilaraay, Yuwaalaraay, Ngiyambaa, and Wayilwan Aboriginal Nations,⁵ as well other Aboriginal and non-Aboriginal people.

Walgett's climate is semi-arid, with mild winters and very hot summers. The Country is a floodplain rich with rivers and ephemeral streams and lakes. Groundwaters come from alluvial reservoirs and the deep Great Artesian Basin. Surface and groundwaters are the lifeblood of the Country, and once provided plentiful resources that supported thriving cultural lives.



Figure X. The Murray-Darling Basin in south-eastern Australia. Source: Murray-Darling Basin Authority (2020).

⁴ The term “Country” is a commonly used term in Walgett and around Australia which refers to “nourishing terrains” inhabited by Aboriginal people who have relationships to it (Rose 1996).

⁵ Language groups of Aboriginal people – both current and historic – who have relationships to defined areas of the Country.

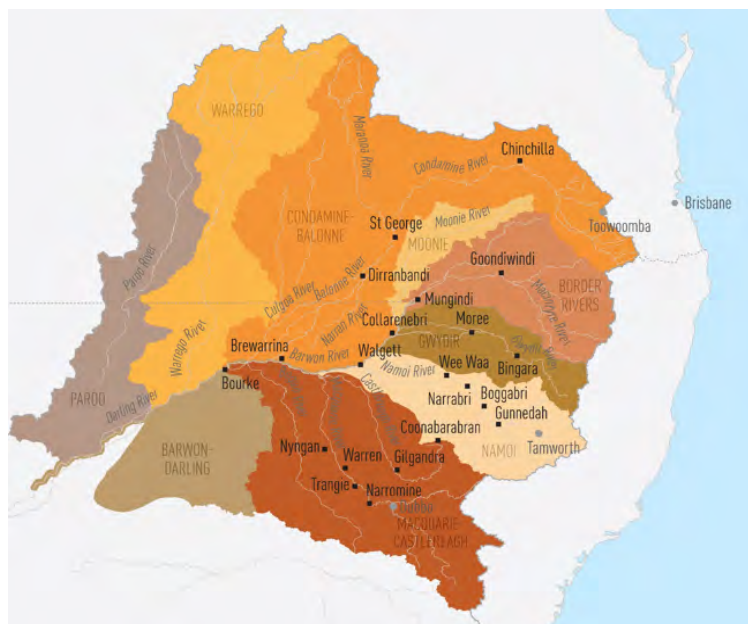


Figure X. The Northern Murray-Darling Basin, showing Walgett. Source: Murray-Darling Basin Authority (2016).

Colonization and settlement

British colonization brought rapid, often violent change. After the first government surveyor, Thomas Mitchell, passed through the Country in 1836, occupation by *wanda* (white ghosts) badly damaged Aboriginal places, values, and cultural knowledge.

Massacres, sickness, dispossession, and cultural genocide brought poverty and criminalization. No treaty that we know of was ever negotiated with NSW Aboriginal Nations. Today our community is disproportionately sick, jailed, over-policed, and struggling. Access to rivers, safe drinking water, and native foods is increasingly prevented by governments that favour opal, coal and coal seam gas mining, monocrop farming, and irrigation.

Dharriwaa Elders Group

DEG is an association that was born in 2000 and defines its full members to be Aboriginal people, more than 60 years old, who live in the Walgett area. The Group supports Aboriginal Elders as community leaders, keeping active and healthy, promoting local Aboriginal cultural knowledge and identity, and working for community development. It doesn't claim to represent the Aboriginal

community – the Local Aboriginal Land Council established and maintained by NSW government legislation claims that responsibility.

DEG took its name from one of its sacred sites, Dharriwaa (Narran Lakes), which means “common meeting place”. Dharriwaa is very rich and productive and once provided abundant water, food, and shelter, and was an important meeting place for many Nations.

The creation story for Dharriwaa tells that Baayaamii the creator decreed that Dharriwaa was not owned by any one species and is important for all species. A part of Dharriwaa that the government purchased for a nature reserve is listed on the Ramsar Convention of Wetlands of International Importance. The Elders would like the whole Dharriwaa wetland system to be Ramsar-listed.



Pelicans in Dharriwaa wetlands. Source: Dharriwaa Elders Group.

Walgett is remote. Our situation – and the damage to land, rivers, and groundwaters – is not understood or known by most Australians. However, Walgett has benefited from the determined work of Aboriginal elders who believe in a better future. They established local Aboriginal community-controlled organizations to deliver legal, health, education, and cultural management services for the community. DEG is working to a vision for Walgett where the well-being of people and Country is vital, and our children have a better, brighter future.

Values, virtues, and important relationships with water

Burruguu (Creation) was a time of creator ancestors, megafauna, and supernatural beings, and is linked to the well-being of Aboriginal people today. *Burruguu* stories

are multi-layered. They help explain the creation, map places, and provide lore for living in and navigating the landscape (DEG 2011).

Places around Walgett show evidence of many thousands of years of Aboriginal occupation. Knowledge of some of these places is held by Elders today. They are important for social, spiritual, historical, and commemorative reasons.

Many of Walgett's Aboriginal people have deep spiritual and emotional ties to these places, the ancestors who lived there, and the resources that supported them. DEG gives these places and the things within them high cultural values. Only local Aboriginal people can interpret and determine these values. These values are present as long as the places remain and Aboriginal knowledge of the places continues. The Aboriginal Cultural Values (ACVs) of a place are diminished if it is destroyed or defaced, or elements, including knowledge, are removed through, for example, the removal of Aboriginal people from their Country, obstacles to their continuing access due to trespassing laws, fences, and locked gates, and the forced forgetting and shaming of language, cultural knowledge, and practices. The management, maintenance, conservation, and sharing of ACVs is important for the well-being of the Walgett Aboriginal community (DEG 2010).

Rivers have always been, and remain, central to Walgett culture and life. This has never changed. Rivers provide drinking water and food, water for birds and animals, gardens and food security. For Aboriginal people the health of the river and the health of people come first. We don't use water and other natural resources in ways that destroy them. More is greedy.

In recent times Walgett's Aboriginal community has suffered from drought, climate change, and the river drying up. The lack of water and food security is of great concern to Elders. There is a belief within the DEG membership and many other residents that Walgett's current situation is due to mismanagement of the land and rivers, and that irrigators upstream of Walgett have been favoured (DEG 2019). DEG believes that this is a failure of a system that is required by law to manage the rivers in the interests of all Australians (Australian Government 2007).

Aboriginal people have been dispossessed of access to and the enjoyment and use of land, and now are being dispossessed of water. Flows have been disrupted, diverted or stopped, and water licenses allocated by the NSW Government have been legislated to be a valuable asset that is traded by others – mostly irrigators. This damages our culture and our way of life. The loss of our rivers and other waters on the floodplain around Walgett is a second wave of damage to Aboriginal Nations – continuing the impacts of colonization which have yet to be understood or truthfully acknowledged by wider Australia.





The condition of the rivers

The well-being of the surface and groundwaters is our concern. We are witnessing the drying and dying of the Ngamaay and Baawan rivers, and the life that depends on them (DEG 2019). Vegetation has been cleared from the Country, including from the riverbanks. Many weirs have been built, stopping native fish from their migrations. Introduced species such as European carp (*Cyprinus carpio*) in the water, and pigs and livestock on the banks, make conditions worse. Irrigation upstream uses too much water. DEG believes that water being separated from the Country and traded as an asset or commodity should not happen. Water should not be separated from the Country where it belongs. Healthy rivers were one of our most important sources of food, and we can no longer feed our families properly now that this food source is unreliable. Restoring the rivers and springs will provide communities with clean, safe drinking water, foods, and livelihoods.

The carrying out of cultural and family activities in and around the water has been severely affected by the poor condition of the rivers. These practices are an essential part of life on the rivers, which Aboriginal people have been doing here for tens of thousands of years (ibid.). Our concerns extend to the communities and ecologies downstream of Walgett also.

River management

As we write today, our river communities have been campaigning to alert voters and the world to the dying of our inland river systems. We held a funeral for the Namoi River in Walgett in March 2019.



Coffin in the dried up Namoi River. Source: Dharriwaa Elders Group.

More attention is being paid to the management of the Murray-Darling (Baaka) Basin, bringing many shortcomings of its management to public attention. We have witnessed water being turned into a tradeable commodity, water thefts where large quantities of water have been taken from the Basin unlawfully, and government funding landholders to capture water behind huge levees and dams. The NSW Ombudsman has compared water administration to a “shell game”, where sleight of hand and distraction are used to deceive people (Ombudsman NSW 2017). These investigations and findings have confirmed our community’s disquiet and our lack of confidence in the NSW Government’s ability to manage our critical natural water resources (DEG 2019).



Ultimately, the Australian Government is responsible for the management of the surface and groundwaters around Walgett. The Murray-Darling Basin Plan is the main legal instrument by which the Australian Government ensures that state governments implement the *Water Act 2007*.

Although legislation and statutory plans make grand claims, we see actions that are inconsistent with those claims. We witness that the visions and objectives of the Murray-Darling Basin Plan and the Water Sharing Plans for the Barwon-Darling (Baawan-Baaka) and Namoi (Ngamaay) rivers are being ignored or undermined (ibid.). Legislation says one thing; actions do another.

Five examples, two from the Australian Government and three from the NSW State Government, demonstrate how our voices are still not heard despite the intent and promises of legislation. Our examples begin at the top of power in Australia – with the Australian Government’s *Water Act 2007* and the Murray-Darling Basin Plan – the product of 30 years’ work. The objectives of the *Water Act 2007* include that all governments manage the Murray-Darling Basin in the national interest, and give effect to the Ramsar Convention, the Bonn Convention, and Migratory Bird Agreements. They must protect, restore, and provide for the ecological values and services of the Basin (Australian Government 2007).



Protest opposing gas drilling and water contamination. Source: Dharriwaa Elders Group.

The Murray-Darling Basin Plan is made under the *Water Act 2007*. Its objectives include honouring international agreements, protecting wetlands and biodiversity, providing communities with reliable supplies of water fit for domestic, recreational, and cultural use, protecting ecosystems, and ensuring that they are resilient, including to climate change. The Plan starts with the following words:

“The Authority recognises and acknowledges that the Traditional Owners and their Nations in the Murray-Darling Basin have a deep cultural, social, environmental, spiritual and economic connection to their lands and waters. The Authority understands the need for recognition of Traditional Owner knowledge and cultural values in natural resource management associated with the Basin...”

Murray-Darling Basin Authority 2012.

DEG recognizes this acknowledgement. However, it has witnessed that, despite this, the aims and objectives of the *Water Act 2007* and the Basin Plan are not being met.

The next example is the NSW State Government, its *Water Management Act 2000*, and Namoi (Ngamaay) and Barwon-Darling (Baaka) Water Resource Plans. In NSW, rivers are managed under the *Water Management Act 2000*. The Act says that water must be shared in a way that protects rivers and people before it is taken for irrigation. It recognizes the benefits of healthy rivers and healthy people, and the importance of rivers to the spiritual, social, customary, and economic use of land and water for Aboriginal people. It requires governments to protect water quality, wetlands, habitats, and features significant to Aboriginal people (NSW Government 2000).

Under the Act, Water Resource Plans say how rivers will be managed and water shared. The Water Resource Plans for the Barwon-Darling (Baawan-Baaka) and the Namoi (Ngamaay) rivers are of utmost concern to us. These plans say that the ecological condition of the river, water quality, and flows in rivers and on floodplains will be protected. They acknowledge that healthy waterways support the well-being of the Gamilaraay people, who continue and revive cultural practice by the waterways.

The plans contain many words that acknowledge Aboriginal people, their knowledge, and their wishes: “Respect is paid to the traditional owners of this



country, who are acknowledged as the first natural resource managers... The vision for this Plan is to provide for... the health and enhancement of the [river]... and the spiritual, social, customary and economic benefits of surface water to Aboriginal communities” (NSW DPIE 2019).



The Water Resource Plan for the Namoi (Ngamaay) River has words spoken by Gamilaraay people, describing their vision of healthy rivers and people, and the damage done to them:

Rivers, creeks, and bodies of water function together as a healthy flowing river... Flows are “alive” and natural... People can drink river and creek water... The system reaches the sea, and the estuary is healthy... Young people have a sense of cultural identity... people young and old spend time back “on country” together... We are happy because Country is happy; when Country is happy, our spirits are happy...

The rivers suffer from too much water taken for irrigation, low flows, and no flows... collapse of aquifers... The effects on community health include increased morbidity, higher incarceration rates, suicide, more sickness... intergenerational trauma, mental illness.

When rivers are flowing and healthy, our culture strengthens, and the health and well-being of our people improves. When our rivers and waterways are dying, we are dying with our Country. Our... knowledge dies, our culture dies, and our ceremony dies (ibid.).

These words show that governments have been told, and know, the vision and wishes of Aboriginal people. Despite this knowledge, inequitable use of water upstream of Walgett is still permitted. Despite this knowledge, Aboriginal values of the rivers are not protected. DEG believes that the rivers, wetlands, and floodplains are not protected and are being allowed to die. DEG believes that the river management system of the Murray-Darling Basin has failed and urges governments to honour the stated intent of their laws and plans.

The Walgett Aboriginal community recently joined calls for a Royal Commission into management of the Murray-Darling Basin. Despite these disappointments, DEG continues to work to bring change to the worsening situation.

What we require

There is no proper acknowledgement from government or industry of the interactions between groundwater and the Baawan and Ngamaay rivers near

Walgett. The NSW Government encourages towns, landowners, and miners to drill new bores as the rivers run dry, before knowing the effect of these actions.

Very little is known about the quality of water in the Walgett alluvial groundwater, yet our community needs to draw on that water in times of water scarcity. The reliance of water management plans on old, inaccurate, and incomplete information is a great concern to us.

With its partners in the Global Water Institute of the University of NSW and through its relationships with the Commonwealth Environmental Water Holder and the North West Local Land Service, DEG is advocating for a Walgett Aboriginal Ranger enterprise to be undertaking this work.

Objectives and visions for fair use of water are undermined by over-allocation to irrigation, lack of information about the amount of water taken, and the absence of planning for climate change. With its legal advisors and partners, DEG is advocating for water monitoring and planning activities to be undertaken in Walgett, while acquiring the resources and building expertise through partnerships to provide the service.

Our knowledge, side by side with modern research, says that flowing waters, on the surface and underground, are vital to the well-being of rivers. We require that flows are restored to revive river health. If this means reducing the volume of water diverted upstream by irrigation, then we require that. If this means modifying existing dams and weirs, then we require that. If this means capping the amounts of groundwaters taken so that water pressure can return to feed into surface waters and our spring sites, and freeing up the slow flows of water soaking underground from ephemeral *warrambul* (watercourses), then we require that.

Good-quality drinking water and healthy food

High salt intake leads to bad health common in many Aboriginal communities. The Walgett community has been forced to use poor-quality water as a consequence of the mismanagement and reduction of access to the rivers which traditionally provided the town's drinking water. The drinking water quality has deteriorated so much that recently our community was told that the river water was unsafe and we had to boil all water. Walgett residents were consuming, in their drinking water, a considerable amount of the World Health Organization's recommended daily limit of sodium. This was made worse by a lack of access to fresh food from the river, and from the community garden that died during the height of water restrictions. A reliance on takeaway food also results in higher salt intake (DEG 2018). Our advocacy with University of NSW partners and respected



journalists on this issue pressured the NSW Government to require our council to install a reverse osmosis system recently. Even with this new system, our town's drinking water contains sodium levels that are too high for a community with high levels of chronic disease. DEG is currently installing a chilled drinking water kiosk with an individual reverse osmosis unit on the main street, while we continue to advocate for a town reverse osmosis treatment fit for purpose. We anticipate that our work will bring benefits to other communities facing reductions in access to quality drinking water, while we continue to advocate for our main source of drinking water – the rivers – to be restored to healthy flows.



We can no longer feed our families on food from the rivers. This affects our diet, as we require healthy rivers for some of our most important food. Cultural and family activities involving food collection in and around the water is severely affected by the poor condition of the rivers. These practices have always been an essential part of life on the rivers. We are seeking to build the capability of DEG to ensure that water quality of the rivers and groundwaters is maintained, supporting thriving ecosystems, so that our community has access to the nutritious diet it relied on in the past. We need this access for cultural agency, so that we can continue the food gathering and hunting practices of our ancestors.



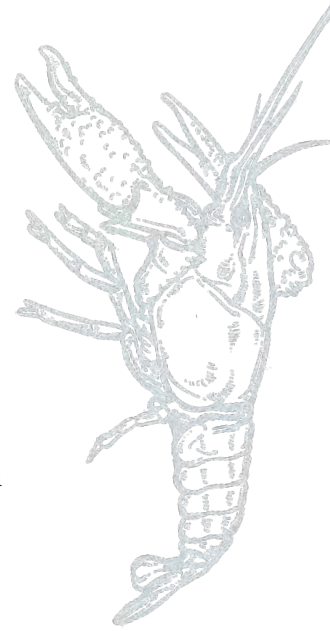
Dead yellabelly fish. Source: Dharriwaa Elders Group.

DEG has recently scoped an Aboriginal Ranger enterprise – for employing local Aboriginal people to actively monitor water compliance and undertake restorative works and water quality improvements in conjunction with government agencies and hand in hand with our science and engineering partners in Yuwaya Ngarra-li. We are currently seeking investment for this important project.

Legislation and support for transitioning industries out of the region are required from government to make the systemic changes needed. DEG is currently working with Walgett Shire Council and Walgett's Local Emergency Committee to start the

process of planning to prepare for increasing weather emergencies brought by failures of our governments to act on climate change. These activities are all linked and are embedded in our holistic approaches to working towards our community's well-being.

We want to work with the Australian Government to provide our community with the quality of drinking water and food others expect in Australia and which has been identified by the United Nations (1948). DEG, with the Walgett Aboriginal Medical Service (WAMS) and our University of NSW partners and the Environmental Defenders Office, has been advocating for the bigger policy outcomes to improve water management, always suggesting solutions. For example, DEG recently made a submission to the NSW Parliament's inquiry into the rationale for, and impacts of, new dams and other water infrastructure in NSW (DEG 2020), and DEG and WAMS recently gave evidence to a House of Representatives Inquiry regarding food and water security (DEG & WAMS 2020). Our work to provide a water-efficient community garden, support a network of gardens, and encourage Council to establish water-saving and recycling systems continues. DEG is also building community knowledge and advocacy capability regarding the management of the Murray-Darling Basin in a series of community education events held during 2019 and 2020 that will continue in future years. As we proceed, DEG's water policy capability builds, as does its impatience with the worsening situation. Our academic colleagues meanwhile are working to ensure an Australian Drinking Guideline is developed for health and sodium.



Access to rivers lakes and springs

DEG requires that Aboriginal people have free access to rivers and springs. Landholders in our area have blocked Aboriginal people from access to tracks and roads leading to the rivers, even public roads. If access to rivers for Aboriginal people cannot be negotiated, then legislation must be passed to enforce it.



Visiting Dharriwaa. Source: Dharriwaa Elders Group.



Socio-economic development

Aboriginal communities require water for socio-economic development. Most Aboriginal communities do not have the capital to purchase water licences, which is the system that exists in NSW to legislate access to water. Walgett has a number of developing enterprises that will provide jobs and food security for our community, but they need water. We argue that special water allocations should be included in an equitable water-sharing system.

DEG requests water allocations for Aboriginal communities to use to provide socio-economic and cultural benefits. We request Aboriginal environmental water licences and Aboriginal cultural water licences. We require resources to work with trusted water and ecology scientists on community-led knowledge-sharing projects.

Currently we don't see any other way but to participate in the current legislative framework established for sharing water. Water for the environment has been unsuccessfully legislated for, but water for Aboriginal communities has not been accommodated in north-west NSW. DEG currently persists in using advocacy, NSW and Australian law, and references to international conventions to attain its goals and change water management.

What we plan to do to revive our water and waterways

DEG is an active stakeholder in Aboriginal cultural heritage and environmental matters in the Walgett region. It has worked hard to try to influence governments. More than 20 years of operations has taught us that this way has not brought change. The Group's intensive experience working "in partnership" with governments to implement National Partnership Agreements⁶ proved a wasted effort and lots of wasted time that could have been spent on what we prioritize.

So, the Group has learned from that experience and in 2015 developed a Social and Emotional Wellbeing Framework (DEG 2016) and invited trusted researchers from the University of NSW to join it and work together in a new community-led partnership, Yuwaya Ngarra-li ("vision", in the Yuwaalaraay language). By collaborating with government, philanthropic and community organizations, Yuwaya Ngarra-li aims for greater capacity and control for Aboriginal people in Walgett, including sustainable management of water and Country, and clear understandings and communications of our values and how we think these will best be met.

⁶ Walgett and Wilcannia were the two NSW communities which entered into agreements with the Commonwealth and NSW Governments under the Remote Service Delivery Agreement developed under the National Integrated Strategy for Closing the Gap in Indigenous Disadvantage. See <https://www.coag.gov.au/meeting-outcomes/coag-meeting-communique-2-july-2009>.

DEG is developing a project with scientists from the University of NSW Global Water Institute to document the impacts in Walgett of the upstream cotton-growing industry. We anticipate that this project will provide evidence to complement the work we are also doing with our legal advisors to define the water values the organizations will seek from future negotiations with the NSW and Australian governments.

Our work will develop, and advocate for, responsibilities we still hold, stewardship we still have,⁷ to improve community access to lands and waters, provide safe drinking water, and increase on-Country activities.

Other people and allies will be asked to support DEG and Yuwaya Ngarra-li leaders. We will build the knowledge of the Walgett community about environmental values and ACVs by hosting discussions and workshops about matters important to us, from local to global reach. We will build responses to government policy and develop our own policies.

Conclusion

Aboriginal people aren't going away. We are used to changing times. A strong Walgett Aboriginal community voice will influence governments and build support for solutions to Walgett's water and food crises. For community well-being, for cultural, social, and economic activity, and for the environment, we will develop strong policies from our values that withstand scrutiny and opposition from powerful interests. We will fight to prevent the dying of the rivers and to protect our groundwaters.

DEG believes that this dry time was made worse by too much land clearing and human-caused climate change combined with flows in the river being taken by irrigation upstream, allowed by state and federal governments. Aboriginal people survived many droughts in the tens of thousands of years that they lived on this Country. But in those times the rivers were healthy. Now we face a great threat because the rivers are not healthy. "They are no longer the wellspring of our being" (Virginia Robinson, DEG Secretary, personal communication). We need healthy rivers and clean water.

DEG will continue to work with Australian governments in stoic resilience and enduring ways.

⁷ This essay was finalized during Australia's 2021 NAIDOC week, whose theme was "Always Was, Always Will Be".



Karen Environmental and Social Action Network



Acknowledgements



Water relational values of Karen Indigenous communities in the Salween Peace Park

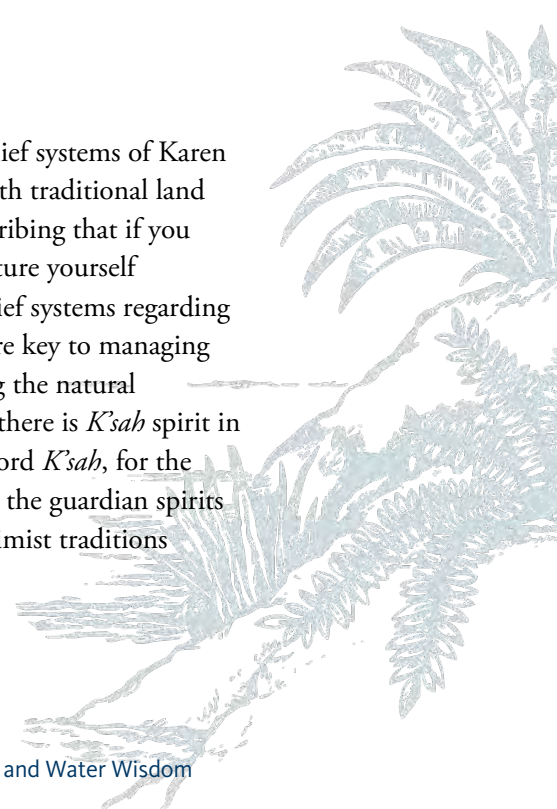
(Written by the Karen Environmental and Social Action Network – KESAN)

Introduction

Indigenous Karen communities in the Salween Peace Park of Kawthoolei, in Mutraw District, Karen State, Burma/Myanmar, see themselves as part of their natural environment. They perceive land, water, and forest as important entities in their social-ecological-spiritual relations, rather than merely as property (Paul 2018). Maintaining proper spiritual relations with nature is key to Karen environmental governance. Ceremonies and reciprocal obligations to the spirits are intertwined with managing land, preserving forest, and protecting watersheds to care for ecosystems and biodiversity (Interview with Saw Sha Bwe Moo, Annex 3). In this article we will explore how Karen Indigenous communities define, value, and take care of local water resources, and how this connects to their livelihoods and belief system. The information analysed has been collected from KESAN's community-based research in the Salween Peace Park since its establishment in 2018, as well as from focus group discussions with Salween Peace Park leaders and in-depth interviews with community elders and customary leaders (Annex 3). Following this there is a discussion on how these relational values are woven into community-based water governance in the form of the Salween Peace Park. This case study concludes that it is important to understand and recognize the sentient, spiritually infused world that many Indigenous Peoples inhabit and the ways in which these spiritual relations inform their management and custodianship of ancestral lands and waters, and to take this into account in national, international, and global planning and policy processes.

Water as bio-social and spiritual life

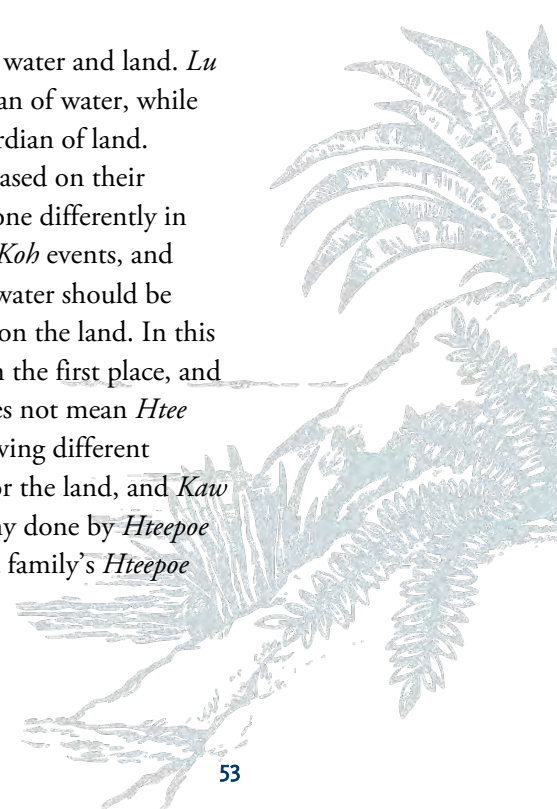
Water is life. It is connected to the livelihoods, culture, and belief systems of Karen Indigenous communities. Thus, water is closely intertwined with traditional land and forest management systems. There is a Karen proverb describing that if you want to be taken care of by nature, you need to take care of nature yourself (Interview with Saw Hae Say, Annex 3). Traditional Karen belief systems regarding the relationships between spiritual beings and the water/land are key to managing agriculture and livelihoods, as well as respecting and conserving the natural environment. The Karen Indigenous community believes that there is *K'sah* spirit in each particular body of water and region of land. The Karen word *K'sah*, for the specific context of Mother Nature, meaning guardian, refers to the guardian spirits of nature. Similar beliefs also exist in many Southeast Asian animist traditions



(Arhem 2016). It is noted that, in addition to the generic *K'sah* spirits of the water, land, sun, moon, etc., there are also *K'sah* associated with local mountains and rivers. Reciprocal obligations define the relationship between *K'sah* spirits and Karen villagers. In Karen ontology, the meaning of *K'sah* as guardian is not about owning the lands or waters. *K'sah* is equivalent to “custodian of waters and lands”. The chair of the Salween Peace Park (known as the *Kaw K'sah* of the Salween Peace Park in Karen) described that if we observe carefully how the Karen practise traditional agriculture such as rotational farming, they do not show that a person owns the land forever (KESAN/SPP Group Discussion, Annex 3). It is thus important to note that there are also human *K'sah* responsible for leading the community in taking care of water and land, known as *Hteepoe Kaw K'sah* in the Karen language.

Water (*Hteepoe*) is described first in this title, followed by the term for land (*Kaw*), and finally the word for community ritual leader/guardian (*K'sah*). *Hteepoe Kaw K'sah* therefore means there are two different community ritual leaders: one *Htee K'sah* responsible for water, and the other *Kaw K'sah* for land. They interact between people and *K'sah* spirits, as villagers bring their offerings and prayer requests to these *Hteepoe Kaw K'sah*, who then perform ceremonial offerings to supplicate the spiritual guardians of the water and land for protection, prosperity, and well-being (KESAN/SPP Group Discussion, Annex 3; Paul 2018). In doing this, the *Hteepoe Kaw K'sah* must lead these ceremonies to directly communicate with the *K'sah* spirits of a particular area of water or land. The *Hteepoe Kaw K'sah* inherits this contractual obligation to the spirits of an area through a paternal familial line (Interview with Saw Hay Kya Htoo, who is known as *Htee Poe Kaw K'sah* himself, Annex 3). If the ceremony is not carried out, the persons or family who use the water or land of particular areas will face various negative consequences (crop failures, illnesses, and sometimes even death).

There are two different major types of ceremonial offerings for water and land. *Lu Tah* ceremonies are to conduct offerings to the spiritual guardian of water, while *Kyoh Tah* ceremonies are to make offerings to the spiritual guardian of land. Different Karen *Kaw* territories conduct the event differently based on their geographic areas. For example, *Lu Tah* water ceremonies are done differently in different water areas such as *Lu Htee Hta* events, *Lu Htee Baw Koh* events, and events in irrigation canal heads, etc. Karen people believe that water should be prioritized, because without water, people cannot do anything on the land. In this order of priority, *Htee K'sah* will lead the ceremony for water in the first place, and then *Kaw K'sah* will perform for the land accordingly. This does not mean *Htee K'sah* is above or more powerful than *Kaw K'sah*. It is about having different responsibilities. *Htee K'sah* cannot perform ritual ceremonies for the land, and *Kaw K'sah* cannot do it for the water. After the community ceremony done by *Hteepoe Kaw K'sah*, the head of each household, who is also known as a family's *Hteepoe*



Kaw K'sah, will be able to lead the family to make their own small offerings to the spirit of their individual water and land areas to be ready for agricultural and fishing activities. Human guardians and spiritual guardians interact throughout ritual obligations and maintain respect between nature, people, and spiritual beings to sustain livelihoods and protect water, land, and biodiversity (KESAN/SPP Group Discussion, Annex 3).

Oral traditions and water management

Oral traditions and stories are important to Karen traditional knowledge, culture, and values regarding customary resource management systems. Elders pass down this knowledge through stories, proverbs, and poems to the next generation, so they are equipped to take care of the natural resources they depend on (Interview with Saw Hae Say, Annex 3). Karen Elders say that:

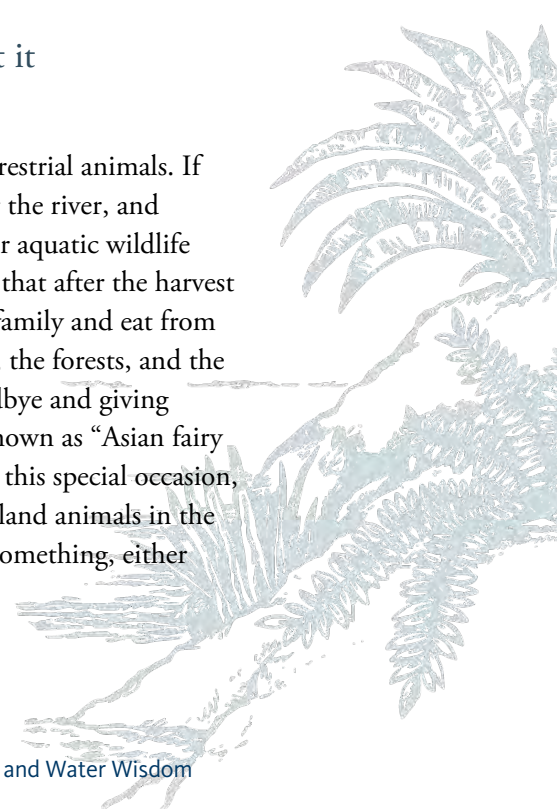
“We, who drink water, must take care of the waters.
We, who eat from the land, must take care of the
land. Only when we maintain the balance will our
well-being be sustained.”

As reflected in this poem, water is core to the Karen concept of well-being, as the communities define food sovereignty as “well-being” or *tar omu soper* of both human beings and the deities of the land, forests, and waters. Their understanding of well-being is not just for current and future generations, but for the afterlife as well.

A Karen Indigenous proverb specifies that:

“If you eat something from water, don’t eat it
together with something from the land.”

This means you are not allowed to eat aquatic animals with terrestrial animals. If this happens, the spirit of the forest will get lost in the forest or the river, and damage can occur. This proverb discourages eating fish or other aquatic wildlife together with meat hunted or reared on land. The exception is that after the harvest there is a celebration where they can come together with their family and eat from the bounty of the surrounding ecosystems, including the fields, the forests, and the water. This is called the *Koh Htaw Htoe* ceremony, saying goodbye and giving thanks to the rice spirit bird (*Htoe bee Khar* or *Pee Bee Yaw*), known as “Asian fairy bluebird”, for protecting the farms over many months. During this special occasion, once per year, it is permissible to eat both aquatic animals and land animals in the same meal. Because it is necessary to ask for permission to eat something, either



from water or land, these foods cannot be mixed together, as they may violate the spiritual relationship between the spirits of the water and land (Interview with Elder Klor Poe, Annex 3). This maintains a spiritual boundary between the water and land, creates limits that prevent people from taking more than they need and overusing the resource, and also preserves ceremonial cultural species of birds for the good balance of natural biodiversity. Many of these spiritual relationships and traditional customs are incredibly profound and complex. In Karen ontology, natural resources are more than just something physical to be managed; there is a complex spiritual paradigm that is crucial to the Karen way of life.

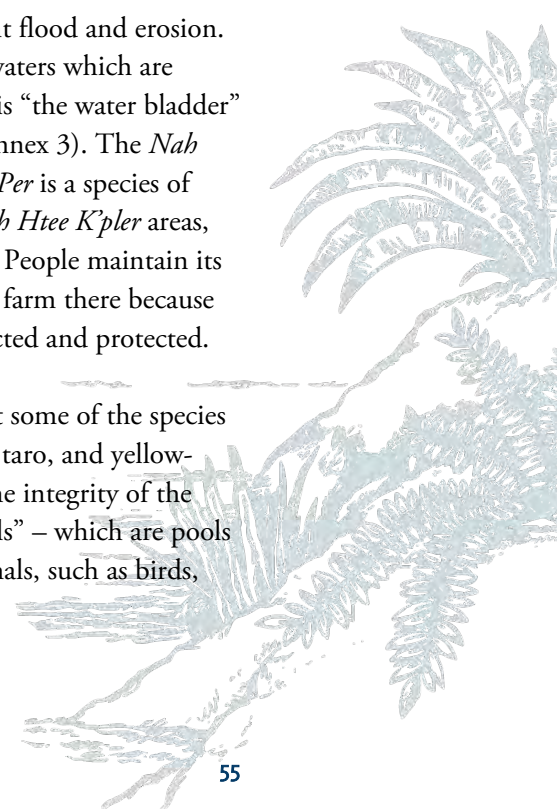
Another Karen proverb says,

“We can survive without food for a few days, but
without water for only a day.”

In our ancestors’ times they didn’t have to boil the water; it was safe to drink because they had a balanced forest which helped them access clean water. Water is the basis for life; there is no life without water. Water is married to land and forest; they take on different but inseparable roles in our ecosystems. *“If we have forest, we have water, and if we have water, we have life. This is our way of life”* (Interview with Elder Saw Tha Say, Annex 3). Without water resources, flora and fauna cannot survive in our areas, and this balance is key to our agricultural systems, which depend on a variety of plant and animal species.

According to local Karen Indigenous Elders, *Htee Kwa Khee* are the headwaters of a stream or river. The surface of headwaters areas such as wetland areas and small lakes run off from precipitation during the rainy season and expand with additional water. These areas need to be protected for their role in water filtration and a more gradual natural release of water into the environment to prevent flood and erosion. These areas also include more muddy marsh areas of the headwaters which are called *Nah Htee K’pler*, the direct English translation of which is “the water bladder” (Interview with Saw Sha Bwe Moo and Elder Saw Klor Poe, Annex 3). The *Nah Htee Po Per* spirit occupies the *Nah Htee K’pler* marsh area. *Po Per* is a species of white ginger lily (*Hedychium coronarium*) that grows in the *Nah Htee K’pler* areas, and *Nah Htee* is the spirit of the ginger that occupies that area. People maintain its integrity as a watershed and do not cut down the vegetation or farm there because the spirit of the water inhabits it and so the area must be respected and protected.

Local Karen communities also believe it is important to protect some of the species specific to these marshland areas such as the ginger, wild water taro, and yellow-legged frogs (*Limnonectes taylori*) because they help maintain the integrity of the ecosystem. There are also *Htee Mae Kalah* – “mirror water pools” – which are pools with no outflow. These waters are drinkable for people or animals, such as birds,

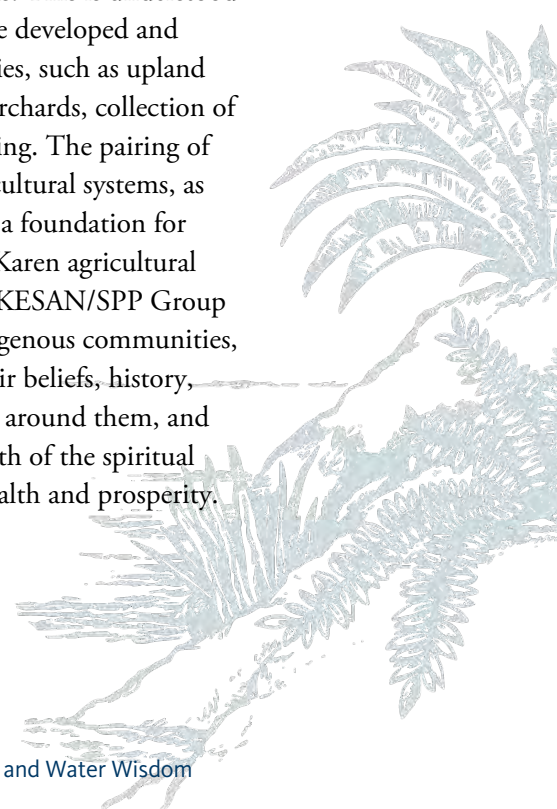


but they cannot be modified or destroyed, as they are protected places for *Nah Htee* water spirits, in the same way that people must respect the spirit of land and forest, as Tah Mu Kah described (Annex 1). *Htee Htaaw Per* are the areas where freshwater springs are located and that clearly need to be protected for conservation of the watershed areas (Interview with Saw Sha Bwe Moo, Annex 3).

Another famous proverb advises:

“Mother told us to save yam species. Father told us to save taro species. When we preserve up to 30 kinds, we will not perish when famine comes.”

This poem reflects how Elders pass down the value of protecting biodiversity (KESAN 2015). Karen livelihood principles respect and acknowledge the need to take care of water, land, and forest. Some areas, such as *Htee Kwar Khee*, have stricter conservation traditions, while in other areas, such as *Htee Kloe Mo Pwar*, people may be able to carry out agricultural activities. There are some areas that cannot be used for agricultural activities (as shown in Annex 1). There are non-timber forest products, plants, and small trees that can be used for household needs, but they cannot cut the larger trees that maintain the well-being of the ecosystem. They can harvest bamboo to build houses and make farming tools because when harvested in accordance with local traditions/taboo, these types of bamboo can regrow each year. There are many taboos similar to this when it comes to harvesting trees for household and ceremonial use (Interview with Saw Hae Say, Annex 3). These practices ensure that the forest is used with respect to Mother Nature, and thus watershed areas are preserved. Practising traditional knowledge about the “use” of natural resources through diverse agricultural systems and “care” through ecological conservation is key to Karen Indigenous food systems. This is understood in the *Kaw* customary land system where the communities have developed and continue to practise holistic agroecological systems over centuries, such as upland *Ku* rotational cultivation, lowland *Se* paddy cultivation, *Klau* orchards, collection of non-timber forestry products, and traditional hunting and fishing. The pairing of “use” and “care” is the most important aspect for all these agricultural systems, as they must always be paired together with biodiversity to create a foundation for sustaining livelihoods. Maintaining biodiversity in the diverse Karen agricultural systems helps mitigate, adapt to, and survive natural disasters (KESAN/SPP Group Discussion, Annex 3). The Karen people, like many other Indigenous communities, see themselves as a part of the natural world around them. Their beliefs, history, culture, and ways of life are inseparable from the natural world around them, and the Karen Indigenous communities firmly believe that the health of the spiritual and physical environment directly corresponds to their own health and prosperity.

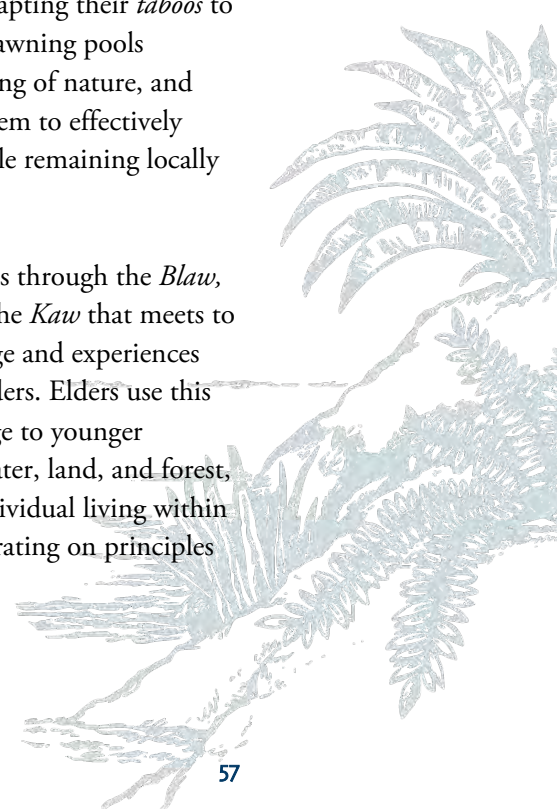


The *Kaw* as a natural resource governance system

The *Kaw* system is a helpful example of the Karen relationship with nature. Mutraw District is an autonomous area of Karen State which houses a significant proportion of functioning *Kaw* customary land systems. The *Kaw* customary system, through which Karen communities enact the day-to-day governance of their watersheds, can be understood in multiple ways depending on the context. It can be viewed simultaneously as a management and governance system, a social framework, and a spiritual and physical territory. A community's *Kaw* territory comprises the lands, waters, and natural resources within that ancestral and spiritual domain. Depending on the size, some *Kaw* contain multiple villages. *Kaw* territories may contain a number of different types of forests and land uses.

The *Kaw* can also be viewed as a governance system, with a set of institutions that bind the *Kaw* community together. These institutions mediate the community's relationship to the natural resources in the *Kaw*, promote social norms, provide support systems, and maintain justice. The *Kaw* as a management and governance system has been developed over the centuries by each community and is perpetually evolving to reflect the community's holistic vision for economic, psychological, socio-cultural, and spiritual well-being (Marshall 1920). This holistic vision is deeply embedded in the preservation of the *Kaw* territory itself, as the *Kaw* also serves as a repository of the belief system, ancestors and deities, history, and identity of the community. The *Kaw* is the foundation of the Karen resource governance system (BEWG 2009; KESAN 2005; KESAN 2008). At its heart the *Kaw* is an adaptable watershed governance system founded on a Karen holistic worldview that recognizes and demonstrates the communion of ecosystems, natural resources, and livelihoods through a spiritual lens. While each *Kaw* system is unique, informed by its own specific context and history, they are not insular, and it is not uncommon to find communities of multiple *Kaw* working together and adapting their *taboos* to protect shared waterways and aquatic resources, such as fish spawning pools (BEWG 2017). Karen relational values, the Karen understanding of nature, and inter-*Kaw* transboundary cooperation thus allows the *Kaw* system to effectively support holistic landscape-scale management of large areas while remaining locally rooted and strongly community driven.

Karen communities traditionally manage their natural resources through the *Blaw*, which is a community governance institution at the centre of the *Kaw* that meets to resolve conflicts, make collective decisions, and share knowledge and experiences among elders, ritual leaders, youths, and other community leaders. Elders use this opportunity to pass down their traditional ecological knowledge to younger generations so they are prepared to care for the surrounding water, land, and forest, thus ensuring the *Kaw*'s resilience and sustainability. Every individual living within a *Kaw* plays a key role in its integrity and daily functions. Operating on principles



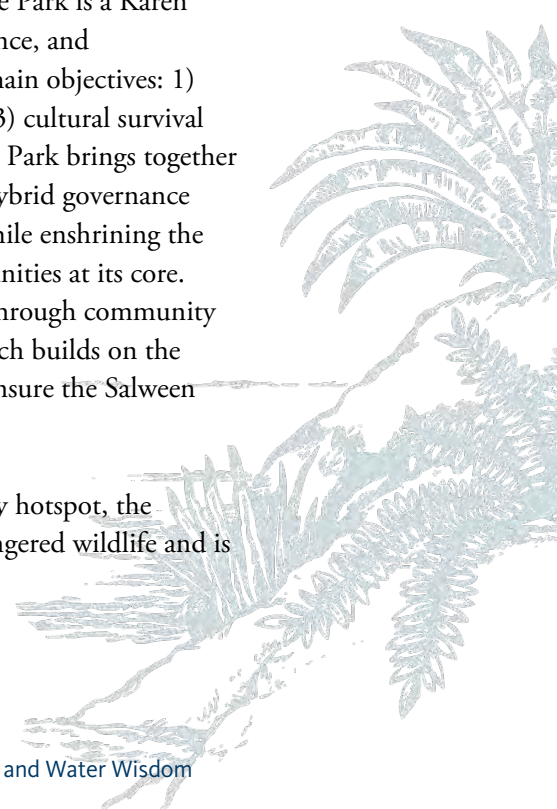
of deliberative democracy, and guided by customary traditions and taboos, the *Blaw* is a body for collective decision-making, rather than a centralized governance organization. This means that while the *Blaw* will typically have representatives or groups who hold resource-specific or ceremony-specific positions, it does not operate in a traditionally “Western” conceived hierarchy.

Community members who hold a specific title, such as the *Hteepoe Kaw K'sah*, do not wield more power in decision-making within the *Blaw* but act instead as representatives of the community to the *K'sah* spirits, and ensure *K'sah* input into collective decision-making and dispute resolution processes. For example, if the *Blaw* discussion is about a water governance concern, a decision may be made for the *Htee Hko*, the representative who holds a contract with the *K'sah* of the water, to organize and lead the *Lu Htee Hta* ritual ceremonies connected to water. These ceremonies enable the community to receive blessings from water spirits for their livelihood activities such as fishing or farming. Through the *Blaw*, the Elders' council can share stories and knowledge on traditional ways of life that will inform the rest of the community about how livelihood and natural resources should be managed and cared for. Therefore, the *Blaw* institution is key to how the Karen traditional *Kaw* resource governance system functions as an interaction between humans, nature, and spiritual beings, and is central to how Karen communities interact with watershed and water resources.

Karen Indigenous relation values and the Salween Peace Park

Officially established in December 2018 (Moo 2017; Dunant 2019) in Mutraw District, the autonomous Indigenous territory administered by the Karen National Union (KNU) (Jolliffe 2015) in Karen State, the Salween Peace Park is a Karen Indigenous-led landscape-scale approach to watershed governance, and environmental and cultural conservation. Driven by its three main objectives: 1) peace and self-determination; 2) environmental integrity; and 3) cultural survival (KESAN and KNU Mutraw District 2016), the Salween Peace Park brings together Indigenous *Kaw* practices and the KNU's policies to create a hybrid governance system that enhances on-the-ground policy implementation while enshrining the rights and decision-making powers of local Indigenous communities at its core. This is guided by the Salween Peace Park Charter, developed through community consultations and ratified by popular referendum in 2018, which builds on the strengths of Indigenous and KNU governance approaches to ensure the Salween Peace Park's sustainability.

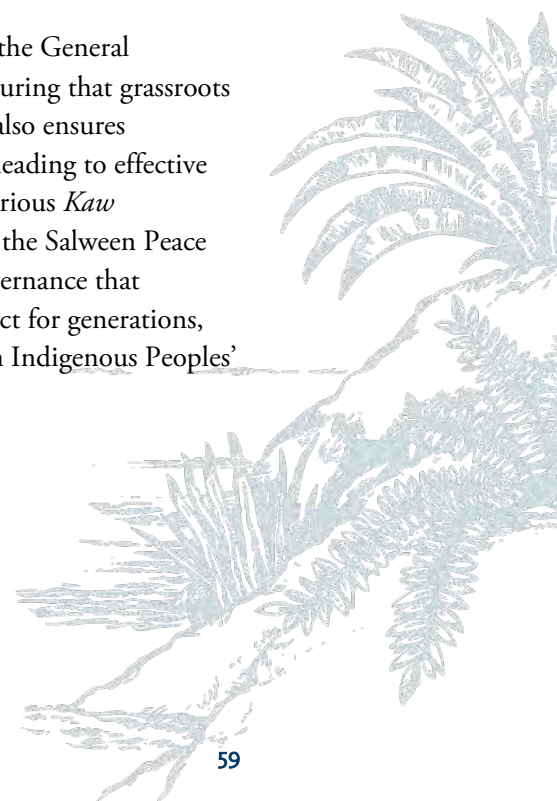
Located within the globally important Indo-Burma biodiversity hotspot, the Salween Peace Park is home to a wide variety of rare and endangered wildlife and is



a bastion of Karen culture (Annex 2). The Salween Peace Park contains a vast mosaic of traditional *Kaw* areas, natural resource management practices, and various agroecosystems that balance livelihoods and biodiversity in the area. All of this is fed by the Salween, Southeast Asia's last free-flowing international river, which is the lifeblood of nature and the communities within. The creation of the Salween Peace Park was led by Indigenous Karen communities working together with Karen civil society organizations, KNU authorities, and local communities in response to significant pressure from proposed mega-dams on the Salween, mining, logging, land confiscation for large-scale agricultural plantations, violent conflict, and displacement (KRW 2016; Suhardiman 2016). All these challenges are a result of, and enabled by, one of the world's longest ongoing civil wars (KPSN 2018). Despite this difficult context, Karen Indigenous communities have come together to form a new path towards peace in the Salween Peace Park by harmonizing people, culture, and the environment (Interview with Salween Peace Park Governing Committee Secretary and KNU District Chair, Annex 3). The Salween Peace Park was awarded the 2020 Equator Prize for its achievements by the United Nations Development Programme (Equator Initiative 2020).

Through its governing body, the General Assembly, the Salween Peace Park capitalizes on the strengths, discussed above, of the more than 100 *Kaw* systems within its borders to holistically govern the area and ensure sustainable livelihoods and conservation. In accordance with the Salween Peace Park Charter, community representatives hold a majority in the General Assembly, which also contains representatives from KNU authorities and civil society organizations (see Figure 1). Female representation and participation (a minimum of 30 percent) are also strongly supported in both the General Assembly and the Charter (Salween Peace Park Charter Briefer 2018). Bottom-up and inclusive decision-making enacted through deliberative democracy is central to the General Assembly's functioning.

This approach allows larger landscape-scale decisions taken by the General Assembly as a whole to remain flexible and adaptable while ensuring that grassroots aims and techniques are not lost in "macro"-level planning. It also ensures community ownership of General Assembly decision-making, leading to effective implementation at ground level by the Salween Peace Park's various *Kaw* communities. Furthermore, this approach allows the people of the Salween Peace Park to further build on the sustainable water and resource governance that Indigenous communities have been pursuing in Mutraw District for generations, and to protect the relational values that have been key to Karen Indigenous Peoples' achievements.



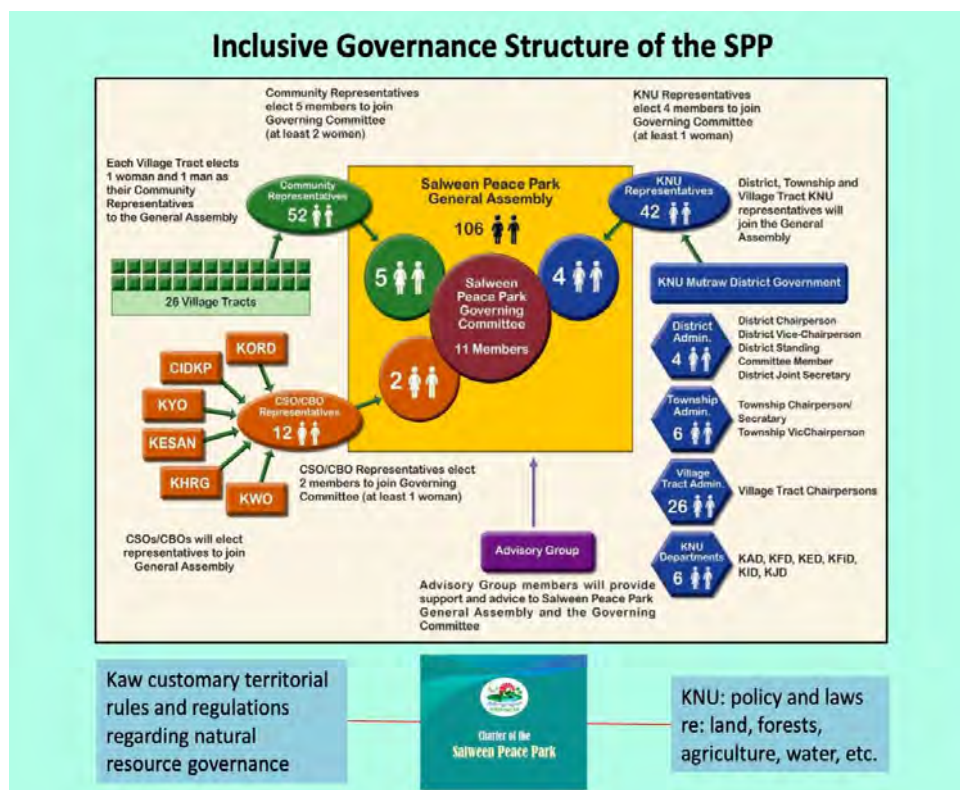


Figure 3: Salween Peace Park governance structure diagram developed by KESAN

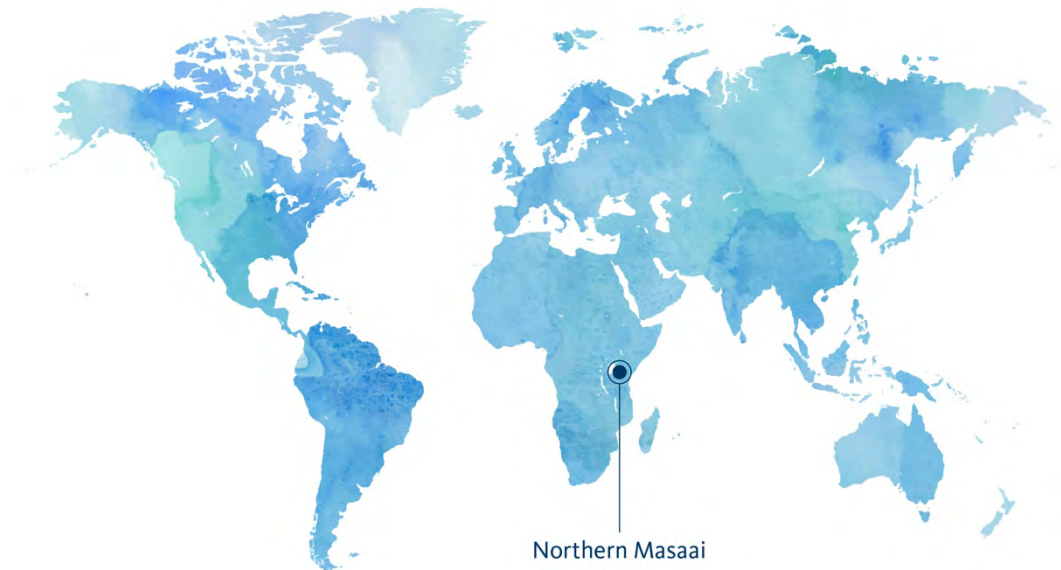
Karen relational values and global water governance

Karen communities in Mutraw District have been practising their traditional ways of life for generations, guided by their relational values with the water that feeds their territories. Their stewardship has seen the conservation of vast forests and a plethora of rare and endangered wildlife, all while supporting the sustainable livelihoods of over 60,000 people during a 70-year-long war. In dire circumstances, Karen Indigenous Peoples have demonstrated time and again that their connection to the natural world and *K'sah* around them play a crucial role in the integrity of the forest, lands, and waters in their territories, and that through cooperation between communities their way of life can comfortably maintain the mutual prosperity of the natural world and the humans living within it. They have further demonstrated that through bodies such as the Salween Peace Park these core relational values can bring the “micro” to the “macro”, building an effective bottom-up form of governance that protects waterways and watersheds, and ensures peoples’ rights are respected. Through these methods the Indigenous Karen of Mutraw District, alongside countless other Indigenous Peoples and Local Communities across the world, are continuously demonstrating a success story that has been ignored for decades. The relational values and customary contracts that humans share with nature play a pivotal role in the protection of the natural world and the sustainable

use of and care for water resources. It is time for these values to be reflected in the global agenda, and for the rights, beliefs, and contributions of Indigenous Peoples to be appreciated and learned from. We need to stop treating resources as inert commodities. Nature's rights are inseparable from human rights, as humans and nature are profoundly interconnected. Indigenous Peoples have known this for generations; it is time for the global community to catch up.



Northern Masaai



gements





Water value and wisdom in the Maasai Indigenous community: Retuning water interactions and the future through Maasai community water wisdom and traditional practices

Dedicated to the memory of our parents, grandparents, and ancestors of the Maasai community whose footsteps are everywhere throughout the Maasai territory in Kenya and Tanzania

Based on Maasai community water philosophy – responding to the UNDP-SIWI water governance survey (2020) – from interviews with six Elders from five Maasai clans⁸ conducted in August 2020

Compiled by Samwel Nangiria, Enguserosambu Forest Trust (EFT) Founding Director

Key words

Engarre – water in Maa language;

eramatare – guardianship in Maa language; traditional ecological knowledge; spiritual; social system

Elders interviewed:

Mr Oltetia Pumbun

Mrs Nambaiyan Tinge

Mr Kaigil Ngukwo Ole Mashati

Mrs Noongipa Lekishon Nangiria

Mr Kuama Kashu

Ngoto Kalukuyia

⁸ Ilaiser, Ilmolelian, Iltaarosero, Ilukumai, and Ilmokesen.

Executive summary

Water (*Engarre* in Maa language) has diverse values: social, cultural, and economic. All of them are related to an emblematic system that is transmitted orally from generation to generation over many centuries.

“For the Maasai community, Engarre (water) is a living resource, a companion of both our economic and cultural identity.”

Oltetiai Pumbun

“We don’t manage water; we provide stewardship, cross-generational knowledge, care, and leadership to ensure responsible use and protection.”

Nambeiyian Tinge

Traditional knowledge and perception are the foundations that hold the life-force of the Maasai community together. Apart from the oral transmission of knowledge and ways of knowing, the Maasai also use place names to reveal connections to the areas, historic events, and water sources. The rivers, ponds, wells, and lakes in the Maasai community have names, most of which tell particular details of the water source.

Water stewardship and the associated knowledge is one of the key topics that youth are taught in cultural residential training camps (*Emanyatta*) as part of the rite of passage – being a Maasai. The youth – both girls and boys – are instructed through a series of trainings, visits to the water sources, observations, self-reflection, and learning to understand that water is central in all Maasai community blessings (*Emayianare*), wisdom, and forgiveness. Water (*Engarre*) is used in conflict management, cleansing, and treatment.

“We pass on this knowledge and the values to ensure our connection with water and life becomes part and parcel of youth responsibility in their entire life.”

Kaigil Ngukwo Ole Mashati

Maasai Elders have the immense ecological knowledge that is used to discover areas with underground water. They use the same knowledge to dig and develop deep wells and ponds. This is generally the main source of water for livestock and human beings in most of the Maasai arid and semi-arid lands.

“The knowledge we use to discover areas with water is an ancient one, but still relevant to us. We barely rely on engineers; the knowledge has never failed us.”

Kuama Kashu

“The water we get from the hand-dug wells is for livestock, people, insects, and wildlife. This practice instils our culture of sharing, as water is a noble natural resource.”

Nongipa Lekishon Nangiria

Stewardship and protection of water sources is traditionally divided among the different segments of the community. Women, for instance, take care of the ponds, wells, and other natural springs that provide water for domestic use.

“We are closer to it than men, we visit water points to fetch water more frequently than men, we do a lot, we perform rituals when water becomes scarce, and we have always convinced God (Enkai) and our ancestors to give us rain.”

Nongipa Lekishon Nangiria

Men and warriors are responsible for taking care of the rivers, and big and permanent water sources. This is done through visits and by watering livestock and fencing the inner parts of the sources. Children – boys and girls – go to the sources with their mothers, fathers, or warriors and will be just learning. Water connects all lives: social, economic, and indeed all other living things.

“Water sources provide a meeting point. We share spaces, harmony, and love with other creatures, and this is vividly possible in the water points.”

Ngoto Kalukuyia

For sustainability, the Maasai community has rules and sanctions for those who contravene the principles of shared responsibilities to protect and use water responsibly. Elders and traditional leaders administer the rules and set the sanctions and rewards for those who contravene and follow the rules, respectively.

Water wisdom and connection to Maasai culture and identity

Rituals and blessing in connection to water and rain

Meishoo iyiook Enkai, Onto-uwuo aang' Engarre, naai (May our God and ancestors give us water; let it be so)

Meishoo iyiook nemiliarie, naai (May He and ancestors provide us in abundance; let it be so)

Metashaiki seuseu, nshaiki inki-shwang', naai (May rain fall on Mother Earth, and over our cows; let it be so)

Metashau, nepuku tenkop inkutta naadema oshwaak, nemeitamwei iyiook onguessi, ontimi naai (May rain come, and groundwater be useful and clean and not be harmful to us, and all other living things; let it be so)

Mitasheiyie eng'eno aang', osul otii atwa iyiook, taata ontarasi, naai (May our knowledge and relationships with water and land reign now and for generations to come; let it be so)

The blessing provides for the foundational principles that guide Maasai wisdom, and the way they value water(s) and the relationship between God (*Enkai*), ancestors, Mother Earth, and present and future generations. *Engarre* is regarded as the purest physical gift provided directly by God (*Enkai*) – supernatural (God) to the human beings and Mother Earth through rain and underground water. As already said, water is an anchor, not only for living things but also for present and future generations.

Guardianship (*eramatata engarre*)

Water is an essential resource for pastoralism, which is the Maasai community's socio-cultural and economic livelihood. Traditional Maasai tenure clearly defines the rights to water for each of the various sources (wells, rivers, and ponds). In general terms, the rights required to access a source of water are related to both the reliability of the source and the amount of labour required to develop and maintain it.

Deep wells are the most reliable and labour-demanding, and therefore have the highest level of restriction over their access. They are clan-owned (*orgilata*), and *eramatata* (stewardship) is vested with a certain family within the clan. The Maasai

have elaborated a well-centred clan system through which other clans claim rights of access to wells other than their own.

The Maasai culture defines not only those who are entitled to access certain wells, but also the order of priority for watering livestock among those with entitlement. Others have to request, and may be refused, access. Those given access must still wait their turn according to the priority rights of the other herds present.

For the Maasai, wells/water are not merely economic resources, but also central institutions around which the community is organized. The socio-cultural dimension of wells/water is manifest in the symbolic representations by which the Maasai refer to wells (*Esinyatishu e ngarre*). Traditional guardianship of water as a common resource in the Maasai community remains relatively intact up to today.

Water and Maasai spirituality

Water is used in most of the Maasai spiritual occasions, such as the cleansing of people to wash out the wrongs they have committed to their fellow human beings, Mother Earth, or other living species, and by failing to honour the original ancestors' instructions/laws regarding the relationships between Maasai and the cosmos. Occasions where water is used include:

During birth

This is an important step in becoming a Maasai. A few seconds after a baby is born, the traditional birth attendants (*Ingaitoyiok*) use water to disconnect the mothers' wrongs from the child. The child is symbolically washed with water from a permanent water source as an act of cleansing. The washing ignites the spirit of independence and the receipt of responsibilities to act kindly and responsibly towards Mother Earth.

The action also makes a permanent life-long companionship between the baby and the water. In this case, water becomes the very first resource to cleanse and heal the newborn baby. There are rituals performed by the women during this event, and songs enthruse the ancestors to give blessings to the family and the newborn.

“We do this because water has life in it: the spirit of humbleness, continuity, and resilience.”

Ngoto Kalukuyia

Emuratare/initiation ceremony

This is the second level of cleansing. Boys go for initiation at the age of 15 years; as a toddler, young boy and later a boy, they would have acted very roughly and irresponsibly towards Mother Earth – killing animals, cutting trees, and misusing water in the course of learning.

Water is used to cleanse the wrongs, through a course of actions: visiting water sources to choose one, make a permanent friendship with the source, and learn the responsibility to protect it in the future.

One source can have many friends, and therefore many protectors and defenders. The boy is instructed to go physically to the water source he has chosen, which shouldn't be far from home, go in completely, and sing the blessing song from the Elders (*elototo engarre*). When a boy returns home, water from a renowned sacred source fetched by his mentor/an Elder which is prepared three days before the ceremony should be poured onto the boy shortly before initiation, and a ritual is performed by the Elders, who sing the water song.

This is an important rite of passage that prepares one for the next level of life. It won't happen if water is not involved. So every Maasai man has a source of water that helped him to move to the next level of life. He will protect it for his entire lifetime even if he migrates to other areas. He will always make connections to it, and tell his children about protecting the source and water. This is one of the most sustainable ways of maintaining water sources across generations.

Naming ceremonies

Six months after a baby is born, the Maasai family organizes the naming ceremony. In the ceremony, water is used to bless the baby and shave off her/his hair, and is given to drink. The ritual is performed, including the water song. During blessings, the Elders would ask the ancestors and God to give her/him a spiritual life, to become a common point where animals and human beings find relief (*talepoyu enaa orkeju arruss* – be as permanent as river Aruss).

During death

When a person dies, water from the permanent source is used to wash and shave hairs from the dead body (*embarnoto olesen*). That is the last respect a dead body is given. Water is used because it is spiritual. In most cases, when an Elder becomes old, one of the key preparations to be made involves fetching the water from the permanent source to be used for shaving the dead body. The action involves rituals and blessing the water, and symbolizes cleansing of the body before burial.

Blessings, healing, and conflict management

Water as a pure substance is critical in all blessings, healing, and relationship restorations. It is used in combination with milk (*engarre puss*) and honey to manage a wide range of conflicts in the Maasai community. In this case, water – as a living companion – is used as a symbol of reuniting the conflicting persons, families, and factions.

Water is also used intensively during marriage and the traditional naming system. Many of the traditional names come from the water. Examples include Leshan, Megwarra, Nairujuruj, Nalari, Nalepo, Nalotuesha, Nasha, Noolturot, and Noonguta, to mention a few. This naming system keeps the relationship alive between water and the Maasai community. These names are used across Maasai in Kenya and Tanzania.

Principles of valuing water

Aisinyati engarre enaa orkwaak likiramatie (Water is as spiritual as our culture that protects it)

Ore engarre naa ormairro (Water is a medicine to treat diseases and stress and manage emotions)

Ore engarre naa endaa naiting', keyeu nedamuni obulu teneoki (Water is a limited resource that needs to be used very sustainably, knowing that the next generation is relying on the current generation's use)

Kengarie iyiook engarre enkishui, orkwaak, eramatare (Water is our partner, sharing with us life, culture, and livelihood)

Ore imbarakinot ang' engare naa ketii teshumata kulie muj (Our governance system, laws, stewardship, and sanctions are paramount over other laws)

Conclusion

Water in the Maasai community is a cross-generational resource that makes it possible for socio-cultural and economic activities to happen. From the Elders, water has more traditional and cultural functions than economic. Some rites of passage could not be possible unless water is used. This shows the connection – a serious and close connection – that the Maasai Indigenous community has with water.

Their governance and stewardship which are still intact today demonstrate a typical functioning traditional system that has stood the test of time. Such systems promote consciousness not only in the use of water but also the entire ecosystem, and therefore the planet.

“To us, Obulu (the next generation) represents the born and the unborn generations, and Enkishon (life in its entirety: culture, livelihood, blessings, children, a better future) embodies the fragility of societal survival that must be cared for with zeal and vigorous envy. The Maasai culture has in its institution strict sanctions and rewards for people who protect water sources and its continuity.”

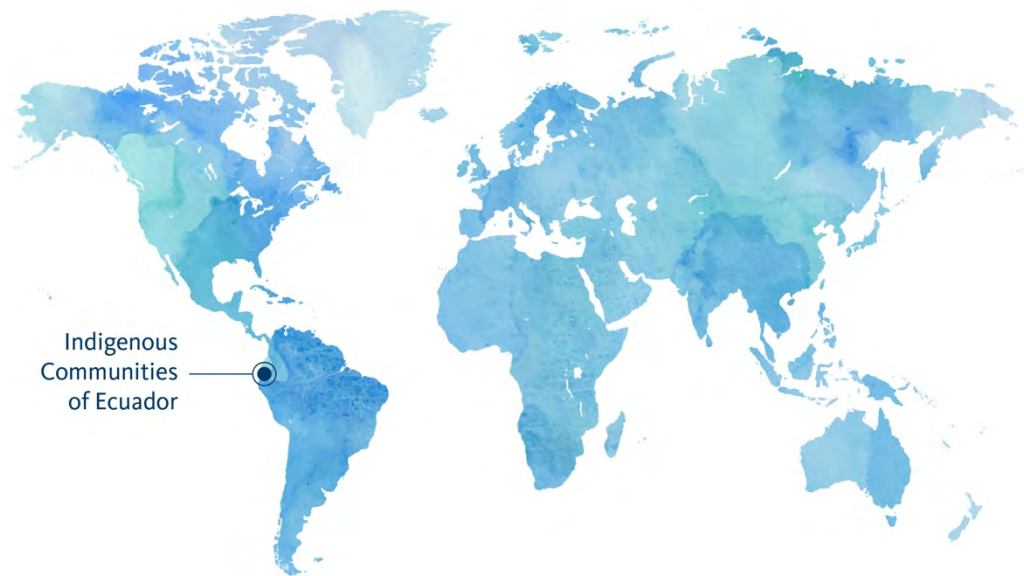
Kuama Kashu

Our system must be recognized and given space to continue showing the way for global citizens.



Contributions from Boundary Walkers

Humberto Cholango: Indigenous Communities of Ecuador



Acknowledgements

Ritual sacred value

The sacred value of water for the Indigenous and peasant communities of Ecuador is very important, which is why they always perform ritual acts in waterfalls, *pugyos*, lagoons, and rivers. One of the most important examples is in the times of *Inti Raymi*: before starting the celebration, most of the communities go to the lagoons, waterfalls, and water sources to perform the ritual bath and energize the human body.

In other cases, when people have bad energy, bathing in the rivers is always carried out, with the help of the elderly people in the community, to restore and harmonize the person. Also when they exercise Indigenous justice, as one of the sanctions to recover the good energies, those implicated in crimes perform ritual baths in rivers or waterfalls.

The ritual bath is performed as a symbol of removing bad energies and restoring the balance of the human being with society and with the family. That is why water is a sacred element for our cultures and peoples.

In sacred sites such as waterfalls, water springs, and rivers, they are the chosen sites where the community always goes to perform baptisms and marriages. These ceremonies are with water, guided by Elders and Indigenous spiritualists.

Curative medicinal value

The medicinal and curative value of water is one of the Andean peoples' and communities' traditions, especially when that type of water only exists in very few places. The medicinal waters that are used by the population are hot springs. In the culture of Indigenous Peoples, these waters are not tourist or recreational waters. Elderly people who suffer from rheumatism or osteoporosis and people who suffer from stress bathe in these waters; they are sacred places and sites.

The Indigenous population keeps this type of traditions and customs active. In particular they protect these sources of water as sources of enormous curative and medicinal value. These types of places and waters that are in Indigenous territories are not subject to business or mass tourism.

Community management values

In Ecuador, the State is obliged to guarantee and give legal protection respecting the customs, laws, and traditional forms of natural resource management (including water) to each people under the Constitution. There are historical discrepancies in their application, which has confronted this perception with Western conceptions.

What is important is that the existence of the human right to water can no longer be denied; it is an emerging issue, which is creating a right within the new institutional framework of the Plurinational State of Ecuador. It is compatible and consistent with full respect for the integrity of national territory. Community management should not entail a separate government. The challenge for community systems is to achieve sustainability through a management model that is sustainable for maintaining and operating community systems, and ensuring that community management has guaranteed financing through the collection of fees and through public policies of the State.

Indigenous Peoples and communities come from a historically collective culture, often due to an agrarian character and based on a rural way of living. This is evidenced, in general terms, in the manner in which they relate to the environment – and, in a more concrete way, to their management of resources such as water. Their actions and decisions are almost always collective, such as through the community management of water.

For Indigenous Peoples, community water management is not only associated with political power, but it also represents much deeper relational characteristics, which make it a fundamental right for the exercise of human rights, individual or collective. In this situation, the right to water becomes the main right, without which it is impossible to offer guarantees of a decent life.

The relationship between community institutions and the national institutional framework is an issue that we must overcome step by step by changing norms and structuring new institutions that reflect reality and support the community sector, respecting its customary norms and internal decision spaces. At this moment we are dedicated to making it work, given investment in infrastructure, and, second, we are going to adapt all institutional state regulations.

Community management model

Communities administer their territories, within which there is water. These actions are empowered by the collective rights enshrined in the Constitution, article 57, clause 6:

“Participate in the use, usufruct, administration, and conservation of the renewable natural resources found on their lands.”

Relations between the State and the community sector have been tense in previous decades, because the Indigenous movement never agreed to cede the administration



of water to the State. To improve the State's relationship with community water management, it needs to recognize the pre-existence of the community management model. This model was not supported in previous administrations and was excluded and even occasionally manipulated by the authorities in charge, but the local governments did not have exclusive competence in water and sanitation. With the constitutional reform of 2008, water and sanitation competences were initially assigned to the National Secretariat for Water Provision (SENAGUA), which is the entity that exercises stewardship of water resources in Ecuador.

The community management model generates operational structures that have been efficiently adapted to new conditions and societal transformation processes in access to water over many generations. Community water systems are a management model that has been transmitted from generation to generation since before the Spanish colonization/conquest, and they are often built on in response to new challenges. Recognition and inclusion of community management models and territorial community systems by the State can be vital for defining a country's development. To reach a state of effective community management of water, communities often have to go through different stages of existence. At the beginning there were farms and haciendas, which then later evolved into communes and agrarian cooperatives and associations.

As well as community management systems, different development groupings and formal committees have occasionally been formed in parallel. In the case of water from the State,⁹ it imposed the formation of almost mandatory organizations for users to allow access to irrigation and water for consumption, through legislated water boards. This tradition of organizing in the water boards (*juntas de agua*) was initially much more visible for irrigation but not so visible for human consumption. In the last two decades, the State has initiated community water boards for consumption, and these organizations have managed to become visible.

Now the State moves towards combining these institutions with community government or inter-community boards formed under other statutes. For example, structures of communes follow the instructions of the Ministry of Agriculture, while the water boards follow provisions within the Water Law. At the community level, these two realities are separate and coexist but are increasingly united under the direction of the community or municipal government, with a president, vice-president, secretary, treasurer, trustee, members, and those responsible for water distribution (*aguateros*).

⁹ Colonial/formal administrative state at country level.

In a large majority of communities or local governments, after several years of internal conflict they welcomed community water management, based on national regulations. In our territory, we managed to reunify the community governance of water with our institutions, and now the water boards are transferring all their administration and management to the community government. In this manner, the community government efficiently administers and manages water services to the community members in our territory. In the communities, they formed a team of full-time operators of water services and updated the water rates, and the community *mingas*¹⁰ now belong to the entire community, rather than an external organization. Following the collection of water rates, they reinvest the money in improving the infrastructure of networks, tanks, and new treatment plants, and generate capital for the sustainability of the community water system.

Despite these gains, the weaknesses of the community management water boards include a lack of technicians for their operations, and there is no specialized support unit for community boards or budgets to be allocated directly, and no political will that can guarantee public policy. The community boards' infrastructure is in a poor condition, and there is a lack of training or capacity for maintenance and operation of the systems. Any investment made in water and sanitation is not due to the political will of the central State but is generally due to users' pressure and social mobilization, such as through *mingas*.

The value of the mingas

The *minga* has been one of the most effective mechanisms for the development of Indigenous communities, especially in the construction and maintenance of water systems. In the *minga* all members of the community participate on equal terms. It is a space for family reunions, to strengthen the ties of friendship, build organizational power, and consolidate a different vision of management of basic services. The assemblies and the *mingas* are the important pillars for community water management in Ecuador, because they are two spaces where policies from within our society are generated.

Communities gather in general assemblies and agree on the works and community contributions to the operation of the water system. Financial contributions are made through fees, rates, and also through labour according to need. Community assemblies are a space where the authorities listen to and debate proposals put forward by the communities and reach conclusions, which then become commitments to generate public policy and actions. Parish assemblies for

¹⁰ *Mingas* are community joint works towards a common purpose, generally for the benefit of the entire community.

participatory budgeting are the space for prioritizing the works in each parish; the mayor, councillors, members of the Parro Boards, and the president of the community take part, with water boards also attending. There is a high level of citizen and community participation in decision-making and prioritization of water and sanitation works.

Communities generally meet in assemblies on Saturdays, when the board of directors convenes, where management problems are analysed, work is scheduled, and *mingas* are organized. There are several types of systems for the management and administration of water, whether one community or a second organization that brings together several communities or intercommunity boards from various parishes. These second boards are in charge of the operation of the main channels and networks between communities, while the internal systems are responsible for each community, headed by its board of directors. In this way they lower costs and contribute to state priorities.

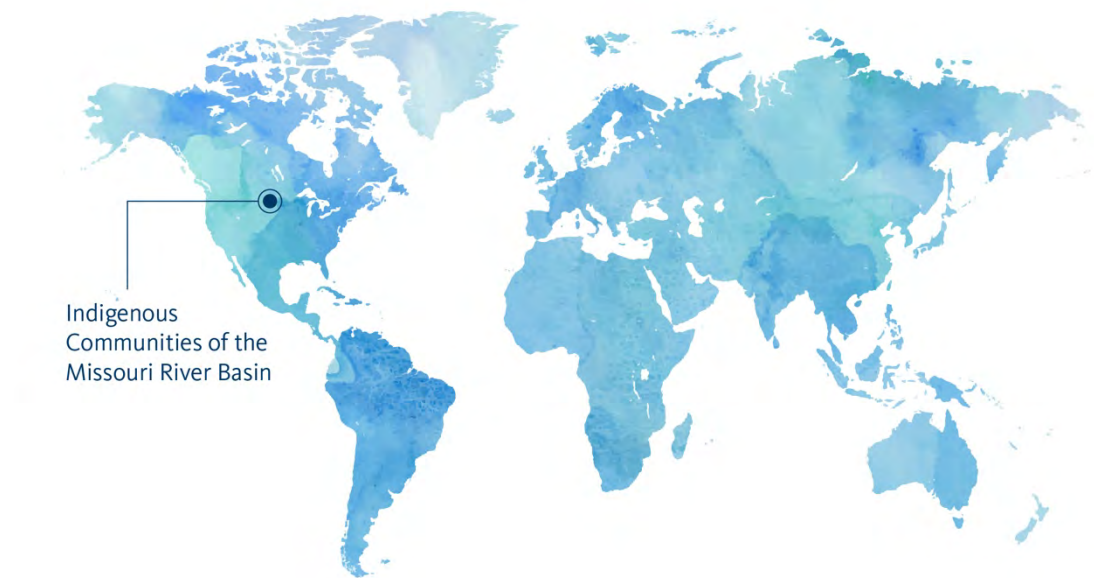
However, some infrastructure of piped water systems built with community *mingas* three decades ago are now obsolete, and this endangers the continuous and effective supply of piped water. Therefore, there is now a need to build new regional systems, distribution networks, and treatment plants to maintain water quality and protect and care for water sources.

Example: Guanguilqui water system

An example of the power of community *mingas* in the construction of infrastructure is the Guanguilqui water system for human consumption. It was built recently and is in a trial period. The 52 communities that are part of the Guanguilqui irrigation system decided to build this system because each of the communities had small systems for drinking water but did not have continuously running water for human consumption in the summer. Therefore they made the decision to turn 64 litres per person per day that were part of irrigation allocations into water for human consumption. The system was built with co-management between the municipality and the communities, coordinated by the Guanguilqui board. The municipality provided materials and qualified labour, while the communities contributed labour and the *mingas*. The system will supply 52 communities, benefiting 25,000 inhabitants in 4 parishes – Cangahua, Oton, Cusubamba, and Ascazubi – in the south of Cantón Cayambe. The main network covers a distance of 48 km, but the distribution will be carried out through the existing networks. In many communities, these secondary networks are in poor condition and need work. The Guanguilqui Intercommunity Board will administer irrigation and consumption water through a single board, with a single directive. For each of the areas there will be specialized managers for both irrigation and human consumption.

The management model, tariff scheme, and sustainability mechanisms have yet to be built. The assembly has not made a decision about these issues yet. The assemblies of the Guanguilqui system are attended by only presidents of the communes and two official delegates for decision-making. Then decisions are communicated at community assemblies. This used to cause internal conflicts within the community, since there were conflicts between the instructions from the commune and those of the water boards – for example, there was no coordination to convene the *mingas*, management of the state institutions was overlapping, there were different expenses, and all of this generated leadership conflicts within the community.

Jennifer Veilleux Phd - Indigenous leadership in US watershed management: A case for cooperation in the Missouri River Basin



Acknowledgements

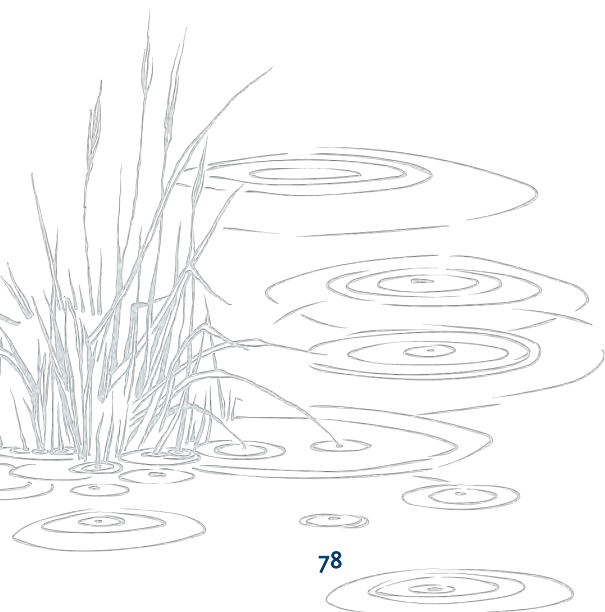




Image 4. Four Generations of Indigenous Women Protect the River © 2018 Jennifer Veilleux

Caveat: The following text shares my opinion, experience, and perceptions as a non-Indigenous European-American working with Indigenous communities in the United States, particularly Brave Heart Society – a traditional organization of Dakota women who preserve and share their pre-contact ways of life with youth and future generations. The writing does not represent the voice of the Indigenous communities with which I work or have worked. Instead, the ideas presented here have been largely shaped by ongoing discussions with Indigenous Elders, Indigenous activists, and other allies throughout the Oceti Sakowin Territory. As a person, I function in the borderlands of dominant American/Western European cultural training and Indigenous and global decolonial cultural training. As a professional, I work to translate or interpret Western and Indigenous sciences in work and communication, and integrate these different frames of understanding water and the natural world, including our place and role with Earth, so we can trend towards sustainable actions. If further investigation is needed on the topic of co-management with the Tribes on the Missouri River Basin, I encourage those interested to approach the Tribes, and the traditional societies, directly. I am grateful for the inclusion in their circles and the opportunity to share these lessons learned with you.

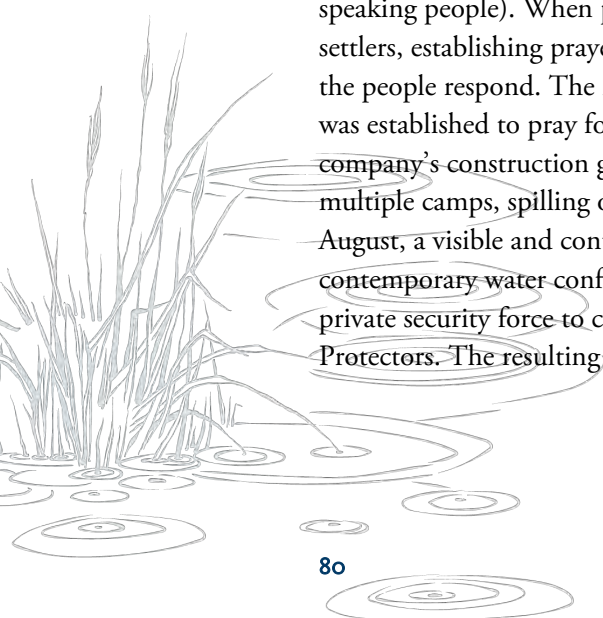
On terms: Indian, Native American, Native, Indigenous, and American Indian are all used on Turtle Island to refer to people with ancestors here before 1492. The preference of term used is up to the person of that identity. Non-Indigenous people should defer, when speaking of a person or people, to their preference. This includes a variety of linkages and signifiers such as given name, family name, the name of the clan or band, the society or group, the tribe, the geography, or the language group among other things shared and not shared depending on the audience.

Introduction

Many Indigenous communities speak of water as a relative: water as part of self, water as a part of everything, water as a member of their community. “Water is life” is more than a slogan; it is a reality. Relationship or relationality with water in this framework includes responsibility to and reciprocity with the water. This pertains to other beings, what in the Western science we refer to as ecosystems – abiotic and biotic organisms, populations, and/or communities that occur in the same place at the same time and interact. This responsibility and reciprocity framework, when it comes to human beings, includes both Indigenous and non-Indigenous people. When the reciprocity does not exist and the water is treated as a resource instead of a relative, the system is at risk of becoming unbalanced and even destructive. Many issues with physical health, mental health, and even violence against women and girls in Indian Country within the United States are attributed to this current imbalance in the way that the United States currently approaches water. The approach in the United States at federal, state, and local levels of government centres on the use and control of water for its economic value and largely excludes the frameworks of the Indigenous people regarding water and related ecosystems. The Indigenous Movement across the United States is working to change that dynamic. This chapter speaks to why recognizing the value of Indigenous frameworks for water and elevating co-management of water through a complex systems approach (very similar to an Indigenous framework) to water systems by creating new water policy and through conflict resolution management is key in trending towards a sustainable future for US water, and indeed key to the future of a peaceful and prosperous US society.

Standing Rock water conflict

In April 2016, youth and grandmothers from the Standing Rock Sioux Tribe established a camp at the confluence of the Cannonball and Missouri rivers, near to the site of a planned oil pipeline development project crossing the Mni Sosa (Missouri River). The pipeline project is called the Dakota Access Pipeline (DAPL) (note: the use of the name Dakota was done without permission from the Dakota-speaking people). When people in the Oceti Sakowin have come into conflict with settlers, establishing prayer camps near to the site of conflict are one way in which the people respond. The initial prayer camp in response to this development project was established to pray for and protect the water. Over time, as the pipeline company’s construction grew closer, the small Indigenous-led camp grew into multiple camps, spilling onto federal land and including non-Indigenous allies. By August, a visible and controversial theatre for one of the United States’s contemporary water conflicts erupted in violence. The corporate interest hired a private security force to confront with dogs the people who identified as Water Protectors. The resulting thin media coverage brought a reaction. Overt US



government action, through the courts, policy, law enforcement, and private security forces, targeted local Indigenous activists and their Indigenous and non-Indigenous allies. Simultaneously, this attracted global attention, largely through social media networks. The result could be summarized as: dogs, water cannons, tanks, arrests, and guns were used to subdue and remove people standing in the way of a corporate project endorsed by local, state, and federal US government entities.

Sacred sites were bulldozed along the pipeline route to make room for the project, and the action was upheld in the courts because a state archaeologist (with letters after their name) holds more agency and authority for the courts than does a tribal knowledge keeper (who is an Elder). The last position of possibility was to prevent the drilling of the pipeline underneath the Missouri River, a federally controlled space, visible from the contemporary boundary of the Standing Rock Sioux Tribe Reservation and upstream from several freshwater intakes for locals. The argument over land, in Oceti Sakowin territory, is as old as contact with settlers. While the Indigenous have been relegated to small parcels of previous territory through colonial law, this does not erase connection to land, water, and everything therein, and transformation of the land from natural grasslands to economically productive agriculture or extraction sites does not erase sacred sites in that space. The argument over water is not new either, as these same tribes were subject to lifeways disruption (again) and relocation with minimal to no compensation due to dam development 70 years ago in the water development of the Missouri River under the Pick-Sloane project.

The water conflict at Standing Rock over the DAPL was not the beginning of conflict between Indigenous people and the US Government or backed private interests; it is also not the beginning of the conflict over the Missouri River. This movement was one among many assertions of differing value systems that the Indigenous in the US have been successful in persisting with for generations (Estes 2019). However, the water conflict at Standing Rock drew increasing national and international attention as the camps swelled to 12,000 people at their height – Native and non-Native allies from the United States and around the world. This included a flag row where Indigenous from other nations came to show solidarity through ceremony, song, and gifts. This also included a convoy of American veterans, celebrities, politicians, and social justice figures who worked silently or publicly to elevate the visibility of the injustice. While there were victories at Standing Rock, some of these were short-lived. Casualties mounted. As violence from security and local law enforcement flared, one Dine woman lost an eye, and a non-Indigenous lost the use of her arm. There are other stories. FBI operatives infiltrated the camps. Arrests were made, and felonies were issued. Lives changed. Accusations of keeping Indigenous people in inhumane cages and seizing, then urinating on, sacred items were told to the US Department of Justice in listening sessions held in Rapid City, South Dakota in November 2016.



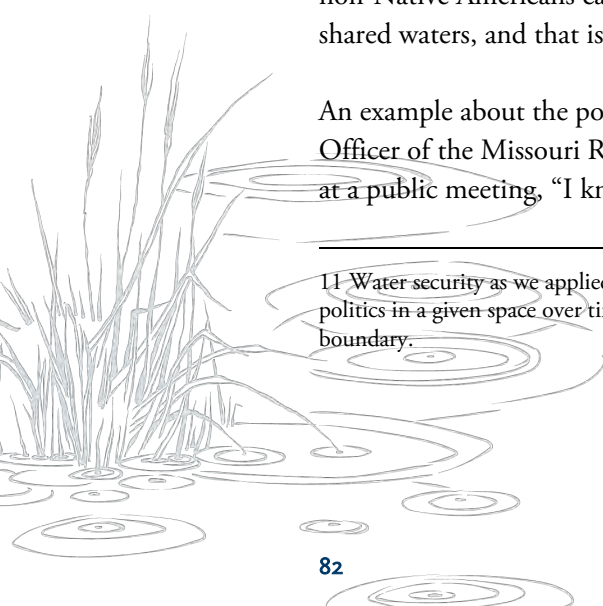
First-hand perspective

I enter the story late, about here, so much of what I write is from a non-Indigenous perspective of a water conflict and what I came to understand are the causes and conditions. I was present at these hearings at the request of Indigenous Elders from Standing Rock and Yankton Sioux Tribes. I met the Elders when I arrived at the camps the month before and attended council with them. Originally, I arranged a meeting with Honour the Earth – Winona LaDuke’s team – and LaDonna Brave Bull, who gave her land for Sacred Stone Camp, to ask permission to pass on a white paper several of my colleagues and I put together (map from paper in Figure 1). My colleagues and I worked to demonstrate the macro-scaler impact that the development of the DAPL, a megaproject that lacked macro-environmental/societal/cultural assessment, would have on the water security¹¹ of the Missouri River Watershed and in 13 Tribal lands/water contained therein downstream. I found that these women I met were already aware of this macro-scaler impact and did not need the science in that way. Instead, the science we could offer could serve to communicate what Indigenous leadership were already saying and the US Government was ignoring in the courts. The resulting work was then also shared with and given to four Elders at Standing Rock who hold traditional leadership roles. I was asked to return for the possibility to interface with this data to the Feds. I did return and began working directly with Faith Spotted Eagle, Brook Spotted Eagle, and Brave Heart Society.

The aforementioned listening sessions, organized by US Department of Justice to take place in major Indigenous geographies of the United States, did not yield immediate resolution of the Standing Rock water conflict. Those sessions may have been an attempt at conflict resolution by the US Government. My observation was that the process was not equitable. The US Government came to a general geography and invited the Tribes to speak – they would listen. The format was dictated by non-Native culture and norms. There did not appear to be any attempt at cultural competency in engaging in communications or conversations by the US Government. I would say that these “listening sessions”, while a failure in conflict resolution, revealed structural and systemic obstacles for how both Indigenous and non-Native Americans can work to trend towards sustainable water management of shared waters, and that is in itself valuable.

An example about the policy-based water value conflict: The then Commanding Officer of the Missouri River for the US Army Corps of Engineers in Omaha said at a public meeting, “I know that you people dumped buffalo parts into the river,

¹¹ Water security as we applied it concerns the people, the environment, the economy, and the politics in a given space over time. In this case, the contemporary Missouri River Watershed is the boundary.



and I did not fine you.” This statement was intended to demonstrate a culturally respectful action. In fact, it highlights a cultural competency issue in current US law. Feeding the river is a cultural activity and has to do with a relationship and reciprocity. Acts of spiritual or reverential communion with the river are not isolated as symbolic but are part of a larger understanding of obligations and responsibilities kept as one part in a system.

As a scientist, I was immediately reminded of the importance of the annual migration of wildebeest through the Mara River in East Africa to the river’s nutrient transfer system. The animals cross, are killed or die, and their bodies are washed downstream, fed on by crocodiles and bacteria, and integrate into the sediment as nutrients in the very important Mara wetlands, home to spawning fish and nesting birds. The wild buffalo, aka American bison, in the landscape are now effectively extinct and do not contribute their bodies to the Missouri River nutrient transfer system, but traditional stories of large crossings and contemporary finds of groupings of buffalo skulls indicate a fair number of the animals died crossing and contributed their bodies to the river. I imagine that it is not hard to understand that the buffalo, like the wildebeest, contribute nutrient enrichment to the river system with their bodies. Indigenous people offer this to honour the pre-contact wild river reality as it has either been passed down to them in practice or comes through spirit knowledge, whether or not the US policy recognizes this practice as illegal, because this is a reciprocity obligation. The US policy can be modified to include such practices as a matter of modifying its understanding of the health of the river system management as an inclusive management with Indigenous cultures.

Missouri River Basin Contemporary Tribal Land and the Proposed Oil Pipeline

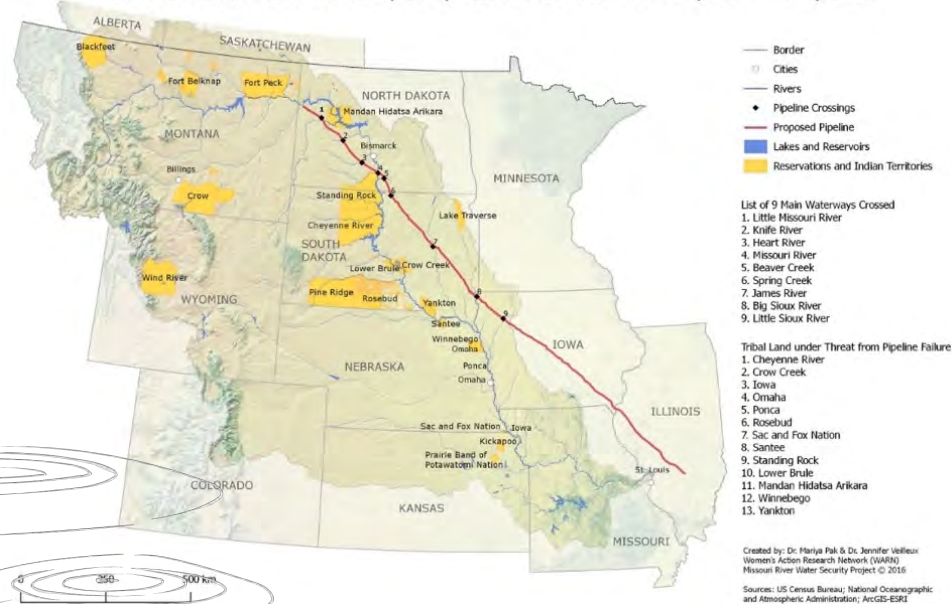


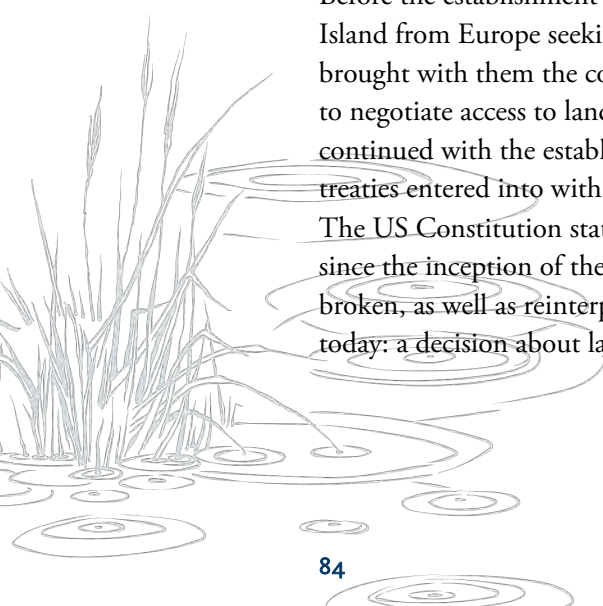
Figure 4. Map of the Dakota Access Pipeline route's proximity to Indian reservations (open use copyright for not-for-profit use only)

Dakota Access Pipeline conflict continues

Within four days of Donald Trump taking the office of President of the United States, he signed an order for the construction of the river portion, at that point the only block to completing the project. Within this order he also reignited the Keystone Pipeline project, another pipeline to cross Indigenous territory, bringing tar sands from Canada over the border to be processed at US refineries for a global market. The DAPL was then constructed under the river, and oil is transported through it to this day. The debate in the courts as to the legitimacy of the project, the findings of the Environmental Impact Statement (EIS) under the National Environmental Policy Act, is still in question. The original EIS was conducted by a private firm out of Texas and poses concern. The federal permit issued to construct that particular stretch of pipeline was based on that EIS, and currently the US Army Corps of Engineers is reassessing the impact.

The question of why the US Government would work to protect and uphold private interest, through changes to policy and dispatching military force, as well as turning a blind eye to local abuses by law enforcement, has its answer in contemporary US national security policy related to its foreign policy, as well as in the history of the United States that enables contemporary policy. Under the last few presidents of the United States, energy security has become the most important national security concern. This has completely eclipsed water, food, and human security concerns in the country. This contemporary US policy is linked with the geopolitics surrounding oil wars over the last few decades, diplomacy and relationality with OPEC, US foreign policy towards the most oil powerful countries in the world, and the need for energy consumption in contemporary US culture. The United States began focusing on domestic production that required changes to environmental policy in 2005 to allow and promote hydrofracking as a process to extract hard-to-access oil and gas reserves. By 2011, under former President Barack Obama, the United States became the world's leading exporter of oil and gas. Settler colonialism, broken treaties, and failure in federal responsibility to the Tribes is the US history that enables this shift in exploitation practices.

Before the establishment of the United States, the people who arrived on Turtle Island from Europe seeking financial opportunities as well as religious freedom brought with them the colonial model of developing treaties with local Indigenous to negotiate access to land and resources. This creation of treaties and coerced deals continued with the establishment of the United States and resulted in 370 ratified treaties entered into with US-based Indigenous Nations and the US Government. The US Constitution states that "Treaties are the Supreme Law of the Land", but since the inception of the United States, the hundreds of treaties made have been broken, as well as reinterpreted and litigated in courts. This debate is active still today: a decision about land rights in the state of Oklahoma recently contested in



the US Supreme Court found in favour of the Tribes to the right of about half the state's land in the summer of 2020 (Wamsley 2020). In general, treaties are violated to suit the needs of the US Government and the culture of turning the environment into a resource for profit or needing development of infrastructure. Approximately 55 percent of land in the United States is held privately, and 3 percent is under a sort of ownership by the Tribes. The ownership question is complicated and culturally framed by the dominant US value system that elevates economics over other values. The rest of the land in the United States is held by the US Government at the federal, state, or local level, and much of this land is designed for mining, cattle grazing, oil and gas exploitation, logging, hunting, fishing, and general resources exploitation that will benefit the national or state gross domestic product. However, this same geography is home to Indigenous people with a very different relationship with the land but who are prevented from actively engaging in that relationship by the rules, policies, and laws of the US Government.

Today, there are over 574 federally recognized "Indian Nations" or Tribes in the United States, 229 of them in Alaska (and one in Hawaii) (National Congress of American Indians 2020).¹² The US Government does not recognize all self-designated Indigenous nations. While the Tribes are located within different states, they are not subordinate to states: many hold treaties with the US federal government that recognize the Tribes as sovereign nations. The Tribes are considered domestic dependent nations under what is known as the Marshall trilogy, and the complexity and interpretation of this set of laws is the subject of ongoing exploration by Indian Law experts. This can quickly become a jurisdictional mess and very confusing when it comes to shared systems such as water. While there have been successful legal decisions made in favour of the Tribes when it comes to water rights, only about 35 Tribes have secured their water rights and treaty rights to water (Figure 1). The case of Standing Rock is an example of a water conflict that is driven by shared space/water and overlapping jurisdiction. Instead of taking a diplomatic approach to the Tribes over the dispute, as would be expected in a relationship dictated by treaties with sovereign nations, the US Government at the federal, state, and local levels decided to use force. The force used at Standing Rock was reminiscent of US foreign engagements in the oil wars over the last decades and the local treatment of Indigenous people reminiscent of the dynamics between African and European Americans in the American South during the Civil Rights era. The attempt at diplomacy thereafter, by the federal

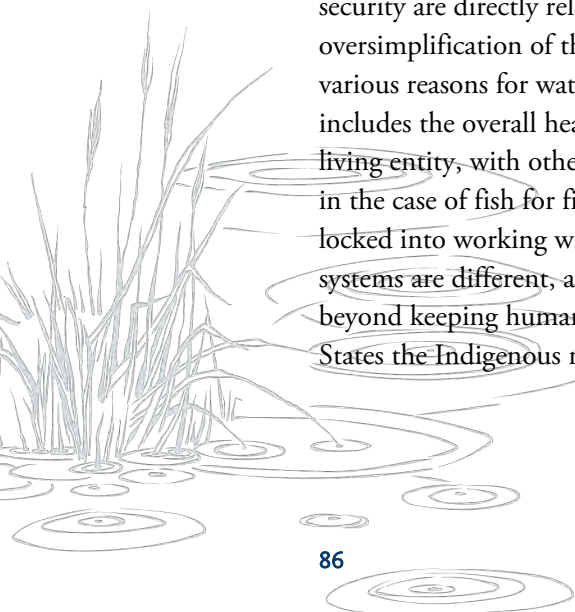
¹² There are Tribes that still work collectively outside the federally recognized status, and this status can be, and as recently as two years ago has been, granted by the sitting President of the United States. The recognized status does not define a Tribe. Furthermore, the term Indigenous is not ubiquitous – how people self-identity is not consistent and depends on the person. There are European Americans in the Appalachian Mountains and African Americans along the southeast coast of the United States who designate as Indigenous in their own culture and time spent connected to that land. Some of this is generational; some is political; all of it is complicated.



government, was perceptively performative, as the result of ceasing construction was easily implemented by a subsequent political actor.

As stated previously, the basis for this conflict over water in the Missouri River Basin between Tribes and the US Government is complex, and this complexity is based in culture and value – specifically, the divergent fundamental understanding of how humans and society relate to and with water and our environment in general. Water is managed in the United States, in general, through an objective Western model as a resource to be managed, exploited, and controlled. The water control as water management in the United States keeps our national economy and human communities at the centre of how water is valued. Water is either controlled to prevent flooding and allow for permanent cities to function safely, and/or measured in terms of how it can be used to irrigate, how it can be used to generate electricity, how it allows for navigation, and how we need to use it as a source or sink domestically. There is a small amount of water use that is valued for recreation, but much of that recreation is not as a relationship with the water, but again, how to use the water for enjoyment, perhaps at the cost of the health of aquatic or terrestrial ecosystems. Through the lens of the Indigenous women I work with, water is understood as our first medicine; we grow in our mothers in water. Water is valued as a relative, important for ceremony, something taken as a last act before leaving the body. Traditionally, water is both sacred and used to sustain activities necessary for life, including agriculture and domestic needs, but this is done in a way with an understanding of reciprocity, based on oral traditions, Indigenous science, and spirit knowledge. Today, the understanding of water in Indigenous communities (while modern life expanded to many more and different cultural water needs) still includes this sense of responsibility to reciprocate, as well as the vital importance of maintaining relationship with water. This is why 12,000 people showed up at the Standing Rock camps to pledge commitment to protect the Missouri River, to protect water that is sacred. This is also why the US Government showed up with and used armed force against the Indigenous and allies to uphold the intentions of economic development.

The World Bank (2019) suggested that national gross domestic product and security are directly related to water development, but this is yet unproven and is an oversimplification of the relationship of water to geopolitics. Figure 2 lists the various reasons for water management in the United States. None of these reasons includes the overall health of the water system for the sake of the river or lake as a living entity, with other dependent living systems outside human or human use (as in the case of fish for fishing). United States-based Indigenous communities are locked into working with the US Government within this framework, but the value systems are different, as previously mentioned, and Indigenous value systems reach beyond keeping humans at the centre of the story. We have witnessed in the United States the Indigenous rights assertions to protect salmon, to protect rivers, and to



fight for the right of rivers to contain environmental minimums over allowing for unbridled economic activity. The understanding of humans as one of many in a series of interconnected systems reimagines water management as a way to maintain the health of the water system and interacting with the water on its own terms, rather than manipulating or breaking natural systems to fit into some imagined ideal, as this Western approach has done. In Western science, largely since the 1960s, the disciplines of ecology and conservation biology, as well as newer disciplines of environmental science and sustainability science, are highlighting the value of maintaining the health through a systems approach. There is recognition in the Western sciences of Indigenous frameworks, and slowly this data-dependent Western science model can change US policy, but can these models address the systemic obstacles highlighted by the conflicts with Indigenous people? And how can we as a nation find actual solutions while we continue to side-line Indigenous frameworks, science, and technology into a social science labelling of “traditional ecological knowledge” as somehow separate from Western-framed science or pursuit of truth?

Table X. Snapshot of some reasons for US water management

Management	Infrastructure	Outcome
Flood control	Dams, diversions, canals, weirs, levees, and other built infrastructure	Settlements in flood plains
Irrigation	Pivots, pipes, pumps, canals, wells, and other built infrastructure	Cash crops grown in places where those plants would not exist otherwise
Navigation	Dams, canals, weirs, levees, locks, and bridges	Transportation, cargo ships, passenger boats, and other water vessels
Hydropower	Dams and reservoirs	Electricity
Storage	Dams and reservoirs	Water supply
Drainage	Canals and pumps	Reclaimed land for development
Recreation	Dams and reservoirs	Fishing, boating, hunting, and swimming
Sewage	Lagoons and waterways	Dilution of treated wastewater

The Water is Life movement (Image 5) appeared more prominently in popular culture in the United States following the Standing Rock water conflict and echoes the Rights of Nature movement happening worldwide. The Rights of Nature movement includes recognizing the rights of rivers. As seen in Figure 1, changes have already happened within US and Indigenous shared water as a result of

decades of negotiations, court cases, and continued assertion of treaty rights by Indigenous. This assertion of water rights for the Tribes also includes recognizing water rights of a river itself. In 2019, the Yurok Tribe recognized the personhood rights of the Klamath River in their tribal legislation (Garcia-Navarro 2019). The Tribes in the Missouri River Basin are now challenging the temporary and variable economic valuation based on predetermined economically centred outcomes, rather than stewardship for the health and well-being of the water (Russo, Rashleigh, & Ambrose 2008).



Image 5. Painted banner at the entrance to the Oceti Sakowin camp, October 2016 © 2016 Jennifer Veilleux

Potential for cooperation

So far, I have presented opposing frameworks and values, and the policy and institutional systems that uphold one value over the other, with dominant US culture largely concerned with economic valuation and control over resources for the purposes of exploitation, having created a framework where Indigenous values of relationality and reciprocity, as well as cultural and spiritual values, are eclipsed and compromised. There are solutions to this divorced value positionality. The lower 48 states contain 345 Tribes, and more than 40 percent of the people who identify as Native American-Alaskan Native in the US census live in the Mississippi Basin, while the rest reside in one of our other major basins that include the Great Lakes, Colorado, Columbia, and Rio Grande. The power of presence is relevant to the opportunity to co-manage water with the Tribes, whether as a resource, a relative, a hazard, or however is appropriate to a particular geography and the

people who live there. Co-management through cooperation is one such way suggested strongly by the Tribes. There are examples where this has worked with some federal agencies and specific Tribes on fish in the Pacific Northwest and Alaska through cooperation with US Fish and Wildlife. The National Park Service has entered into relationships with some Tribes on issues of access to park lands and biotic systems. And where the US Government lacks success in managing water resources for healthy water systems, the Tribes have solutions based in thousands of years of successful experience. Climate change will continue to alter our way of life globally, and in the United States, a country with vast freshwater, the importance of implementing practices that trend towards sustaining these water systems is fundamental to sustaining the functioning of our society.

There is a lack of a unified US national water development plan. Outside the 1972 Clean Water Act, very little harmony exists from state to state, sometimes resulting in state water conflict, such as ongoing legal battles in the US southeast (Atlanta Regional Commission 2022). This lack of a national water approach is often stated as necessary, given the distinct differences between the water plentiful in the east and the arid conditions west of the 100th meridian (a longitudinal designation) (Wilkinson 1993). To add to this complexity, when it comes to water in the United States, the laws and rights are largely deferred to the state level, resulting in 50 different possible scenarios with watersheds that overlap state boundaries. The United States is, like many other settler-colonial countries, decentralized and fractured when it comes to water management. No one department or agency within the federal government system manages overall US water; the responsibility and authority fall to 33 separate federal agencies with some decision-making or monitoring authority. This results in the unharmonized management of the largest freshwater lakes system (the Great Lakes) and the fourth largest watershed in the world (the Mississippi). Unfortunately, the science and understanding of these water systems is also uncoordinated and poorly understood because it follows the money-driven research culture set by the US Government. To add more complexity, states often, but not always (such as in the case of Nevada), defer to major urban centres to develop policy on control of their municipal supply, private corporations, and not-for-profit groups (Water Education Foundation 2022). While there are federal water policies, they are relegated to assess quality and specific “types” of water, and the states and substate partners are left to determine distribution and development. This lack of water development in the United States leaves room to start developing a policy that trends towards sustainable water in cooperation with the Indigenous leadership.

Institutional capacity is known to de-escalate water conflict (Wolf, Yoffe, & Giordano 2003). While there is institutional capacity through the Environmental Protection Agency to address basin-wide watershed management approaches, in practice the government circumnavigates some of these obligations for EISs in



development by implementing permits that elevate economic development over healthy ecosystems. The scientific bodies in the United States, such as universities and think tanks, assess these basins at a sub-basin level. There is no institution that currently operates to communicate explicitly about water between the Tribes and the US Government, or to communicate and work towards conflict resolution between the Tribes and the US Government. If there is no institutional capacity to interface between the US Government and the Tribes over water development, management, and/or equitable sharing, there is room for conflict.

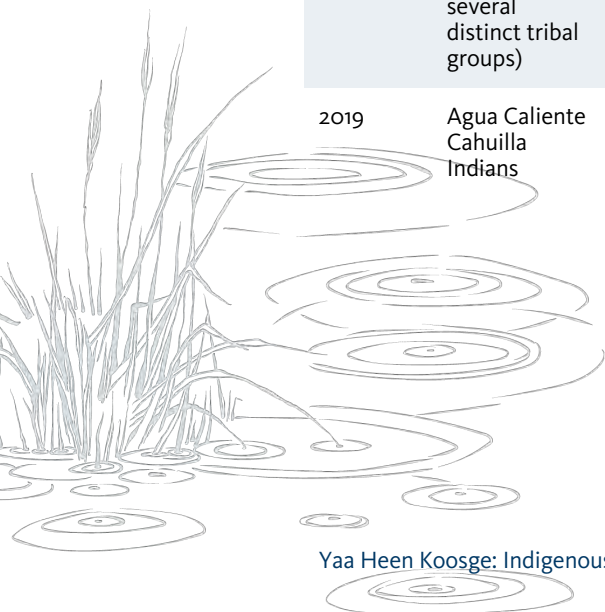
The conflict over water between United States-based Indigenous peoples and the US Government ranges from issues of water rights concerning quantity, quality, and access (Figure 1). While legislation has recognized the rights of United States-based Indigenous in many places, this legislation is applicable on a case-by-case basis, and each Tribe is required to go through a process of establishing water rights, rather than the rights assumed to be in favour of the Tribes. Indigenous sovereign nations within the United States have moved in the direction of establishing the rights of rivers by asserting water and fishing rights in different rivers across the country. For Indigenous to secure reserve water rights in the United States, the already described fractured policies are considered by region and case by case, yet there is a series of water litigation that has set precedent to date, and this is currently evolving (Dworkin 2011). These decisions address a mix of water quantity, access, and quality. And traditions of the Indigenous adapt modern technologies to create effective, efficient responses to challenges in watershed management, while still honouring the commitment of relationality and reciprocity present at the centre of their value system.



Image 6. Medicinal plants along the banks of the Missouri River © 2020 Jennifer Veilleux

Table X. Some water-sharing legislation between the US Government and sovereign tribal nations

Year	Tribe	Water	Story
1998	Isleta Pueblo	Rio Grande River	The Isleta Pueblo in New Mexico sought water rights on the shared Rio Grande River specific to contamination and pollution issues originating in the city of Albuquerque and won in 1998 (Lenderman 1998). The Tribe asserted a need for water standards for farming, as well as cultural religious reasons. As a result, the Rio Grande receives less wastewater and has higher regulations on any dumped material downstream of Albuquerque.
1999	Miccosukee	Everglades	The Miccosukee Tribe sought water rights under the Clean Water Act in the state of Florida through the court system to regulate water quality and quantity releases from Lake Okeechobee and established EPA-approved water standards in 1999. They have engaged in numerous court battles in the federal and district courts to protect the Everglades from nutrient and other contamination. As a result, the Tribe ensures more protection of the world-renowned Everglades ecosystem and the ocean beyond.
Ongoing	Nez Perce, Umatilla, Yakama, and Warm Springs	Columbia River	The Columbia River Tribes cooperatively asserted fishing rights through treaties and court decisions over 150 years that protect fishing rights in portions of the river and include ensuring the fish runs of anadromous fish species (CRITFC 2021).
Ongoing	29 federally recognized Tribes (Fulton 2019)	Colorado River	Over the last 120 years, the Tribes have fought for water rights in the Colorado River Basin, and the US courts recognize the rights of 29 Tribes in the basin to divert up to 20 percent of the water, although not every Tribe has adjudicated its water rights. Other decisions include US courts finding that the water rights of the state of Arizona come after the rights of the Tribes in Arizona.
2004	Gila River Indian Community (includes several distinct tribal groups)	Gila River	Court decision to give control of water distribution of 640,000 acre-feet of water to the Gila River Indian Community as a settlement after more than 100 years of litigation (Saavedra Buckley 2019).
2019	Agua Caliente Cahuilla Indians	Coachella Valley aquifer	The Agua Caliente Cahuilla Indians sued over reserved groundwater rights in the state of California and won in 2019 (NARF 2017). This ensures that the Coachella Valley Water District (near Palm Springs, an affluent community) can no longer mine the aquifer water. This took the Tribe 20 years fighting the depletion and increased contamination of the aquifer, which is important for the Tribe's traditional livelihoods and ceremony.



1977	Yakima	31 subwatersheds of the Columbia River in Washington State	The Yakima Tribe finally settled adjudication of its water rights over 31 watersheds in 2019 after first submitting its claims in 1977.
2019	Colville	Washington State	The Colville Tribes are seeking adjudication of their water rights with the State of Washington on two Washington State rivers from 2019 (Colville Tribes 2022).
2019	Yurok	Klamath	The Yurok Tribe recognized the Rights of River for the Klamath River in 2019, the first US Indigenous Nation to do so.
2020	Klamath	Klamath	The Klamath Tribes had their water rights upheld in 2020 by the Supreme Court as senior water right in the much-conflicted river system (Klamath Tribes 2020).
1908	Gros Ventre and Assiniboine (Nakota) people	Milk River	Winters Doctrine: Indian Reserve Water Rights. Foundational legislation on US government and federally recognized tribal water rights under prior appropriation (with strings attached).

Obstacles to co-management between the Indigenous people in the United States and the US Government about water are complicated by unresolved conflicts. The US Government does not officially acknowledge the genocide of United States-based Indigenous people. The genocide and the resulting actions by the US Government towards Indian Country is not part of the US public education curriculum. The limited teaching about Indigenous in the United States is dictated by geography. Middle America and the West contain narratives about US expansion under Manifest Destiny and make heroes of Lewis and Clark, minimizing the role of Sacagowea and erasing the role that Indigenous played in their ability to succeed at their river exploration/documentation. The East Coast narrative speaks of pilgrims making friends with Indians – usually no specific Tribe is mentioned – and eating together during their first winter in a Massachusetts colony, a basis for the US holiday Thanksgiving, or the role of Pocahontas with the Virginia colony, romanticizing a child marriage. The narratives centre the settlers and side-line the Indigenous, and any mention of the Indian wars and land rushes highlights the American (read: white guy) character. The courts sometimes point to the Doctrine of Discovery, an archaic document used by Catholic nations to justify taking land from non-Christian people, to justify the taking of the earth and related “resources” from the Indigenous. The US Government created a confusing set of legal definitions of what these sovereign nations are and can claim within something called the Martial Trilogy. This results in a landscape of Indian Law that needs an education (and degree) to navigate.

The story of the treatment of the Tribes in the United States parallels that of the treatment of freshwater in the United States: redirect, control, conquer, contaminate, and destroy. The US waterways were altered, and the intricate water ecosystems destroyed, as more desirable ways to use the water or use what was under the water were prioritized and exploited for economic gain. Not once, in all of this US water and expansion history, did the people of the United States, foreign, even if born, to this land, stop to ask the Indigenous people, endemic to this land, about how to best live with the water on which both are dependent. To understand the position of the Indigenous in the United States requires understanding the implications of settler colonialism, the form of colonialism that is still in a state of becoming in the United States, and the response and adaptation of the United States-based Indigenous communities to these policies and settler cultural practices that reflect inherent rights and responsibilities to land, species, and water. There are various scholars who explore the subject in depth (Wolf 1999), but for the purposes of this chapter, the essential act of settler colonialism is understood as erase and replace – people, places, ideas, values, names – of the Indigenous peoples and natural systems by the colonizers/immigrants in body and mind. This is demonstrated in names such as the Dakota Access Pipeline. Even claiming Indigenous words is a form of erasure. Settler-colonialism is critical for understanding why the United States, which is a water-rich country and generally food-secure precisely because of the availability of freshwater in arable land geographies, has failed so miserably at maintaining secure freshwater systems. Settlers are not endemic or Indigenous to a landscape, so they are essentially illiterate when it comes to reading and understanding that landscape. They replicate practices from their own homelands; in the case of the United States, the Europeans had exhausted the earth in their own homelands already, and these practices have proved even less sustainable here, needing engineered responses to failed and sick systems. The water practices sanctioned by the US Government that centre economic valuation of water, land, and property have left everyone concerned vulnerable to water insecurity, food insecurity, and energy insecurity, resulting in human insecurity.

The world is shifting and changing culturally and environmentally. This creates an opportunity in the United States to change our relationship with water and give the Indigenous a leadership role in how to do that. One of the most progressive and exciting changes is happening in the form of the Rights of Nature movement, based on a very ancient Indigenous framework combined with a contemporary Western legal framework. While the world is poised for a systemic shift, and water is key in how the environment will reconfigure itself into a new stable state, Indigenous-led movements recognize the rights of nature and reiterate that water is life and water is sacred (Kauffman & Martin 2016). Rights of nature is the term given to generational wisdom still contained within living Indigenous communities, and it has been resurrected by the West's deep ecology movement and figures such as



Rachel Carson. Globally, national-level laws are being adjusted or written to acknowledge, protect, and enforce rights of rivers and non-human species (Figure 2). In some cases, such as the Whanganui River and the Rio Atrato, the new laws point to Indigenous representation and valuation of the river systems (Whanganui River Rights in New Zealand n.d.). Pervasive Western-led¹³ water development in the name of progress and capitalism is exacerbating our already taxed natural system, absorbing drivers such as climate change, injection/extraction, and engineered land and water, and this has resulted in massive global shifts. Solutions are necessary to respond to this shift through adaptation, and returning to ways in which humans lived with their environment sustainably, before the last 150 years, is critical to our persistence and resilience as a global collective human society. Rather than erasing and replacing Indigenous water relationships with so-called progress or modernity, we can seek to learn with recognition and respect that these relationships are critical for sustaining cultural diversity, inherent rights, sovereignty, and the health of our natural systems, and integrate the best of Indigenous and contemporary global cultures towards successful water management in the future.

Including the Indigenous approach to water in the Missouri River can offer two speculative scenarios: each individual Tribe gains co-management or sole management of its portion of the watershed, being enough in line with one another to create, by default, a comprehensive, overall harmonized watershed management with the health and well-being of the water as the central purpose, and/or a coordinated effort, by the individual Tribes, to pass resolutions, policy, and legal frameworks, implement scientific and engineered management approaches that are harmonized throughout the basin, and coordinate development plans. The United States has existing treaties regarding shared water with Canada and Mexico. It also has treaties with many of the federally recognized Tribes that include aspects of water use. As mentioned previously, the United States has entered into agreements with some Tribes specific to that Tribe and a specific water system. In all of these agreements, the language, the reasons or valuation, the measuring systems, even the agreement and negotiations that precede the agreements, are dictated by US custom, culture, and value systems. This would need to change.

¹³ “Western” refers to the framework dominated by European and European-descendant thinkers.

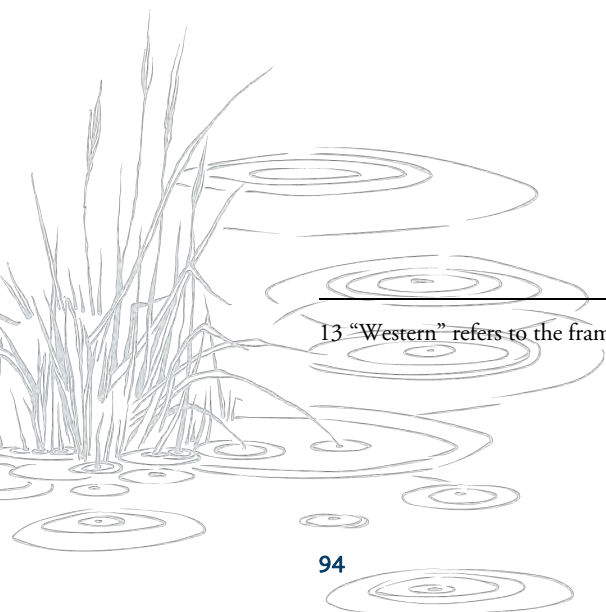


Table X. Some national-level Rights of Nature legislation

Year	Country	Situation
2008	Ecuador	Included the Rights of Nature in its constitution, the first country to do so
2012	Bolivia	Passed the law of Mother Earth and holistic development for living well
2017	Columbia	Granted personhood to the Rio Atrato
2017	Mexico	Adopted the Rights of Nature in its constitution
2017	New Zealand	Recognized the rights of the Whanganui River
2017	India	Local-level governments recognize the rights of the Ganges, Yumana, and Narmada rivers, while the national government overturned the recognition on the Ganges pending further planning
2019	Yurok	Declared personhood rights of the Klamath River in Tribal Law
2019	Bangladesh	The High Court recognized the Turag River as a living entity with legal rights and held that the same will eventually apply to all rivers in Bangladesh
2020	Chile	Working with the Mapuche Indigenous along with environmental organizations working to secure rights of the Biobio River
2020	Nepal	Working on a constitutional amendment to recognize the Rights of Nature to include rivers

Solutions

Pulling from Oregon State University's transboundary freshwater management database that pertains to over 300 shared freshwater basins worldwide and contains more than 500 official agreements, models could be developed for equitable water-sharing.¹⁴ Contemporary initiatives in watershed management and water policy such as integrating flexible policy mechanisms in newer international agreements or treaties, setting environmental minimums, identifying and valuing ecosystem services, creating water equity at the national policy level for all people and living things, or the much-disputed integrated watershed management approach are laudable in their attempt to address inequity and the unsustainability of water systems to include the human and non-human water-dependent communities as well as the water itself, and of managing water from a purely economic resource or national political agenda. We can learn from some of these approaches as to the efficacy of theory and ideas in real-life scenarios when including new concepts or

¹⁴ See <https://transboundarywaters.science.oregonstate.edu/content/transboundary-freshwater-dispute-database>.

ideas beyond economic value. One could combine this approach with the Rights of Rivers movement and reference the language forming between Indigenous and the governments within whose countries they reside, or by the governments themselves who are Indigenous to the land they govern. Recognizing in either of these cases that the diversity of Indigenous peoples in the United States means that there will be diverse approaches to each body of water according to the geographies, knowledge, and cultural teachings.

The question remains about how to get past the limited application of Indigenous watershed management and attitudes of dismissing non-Western values of water and see the bigger picture. This will require systemic thinking and collaboration, as well as a willingness to listen and learn on the part of Western water professionals. Statements made by US officials during the Standing Rock conflict exemplify some inherent conflict over water.



Image 7. The tipi is an example of Indigenous technology © 2019 Jennifer Veilleux

Out of conflict, movements crystalize, and progressive action follows. Formal organizations such as the Great Plains Tribal Water Alliance, along with grassroots efforts within and between Tribes, are discussing water rights and treaty obligations both inside and outside the courtroom with the US Government. Street demonstrations that highlighted the rights of Indigenous either in specific cases (Indigenous Rights March in March 2017, Image 4) or as a lead part of a movement (People's Climate March in April 2017) called for recognition of a different value system for water and land. United States-based Indigenous communities are communicating through grassroots groups such as the Native Organizer's Alliance to change philanthropic spending to move beyond the 1 percent committed to Indigenous issues and creating bridges between geographically dispersed Indigenous activists.

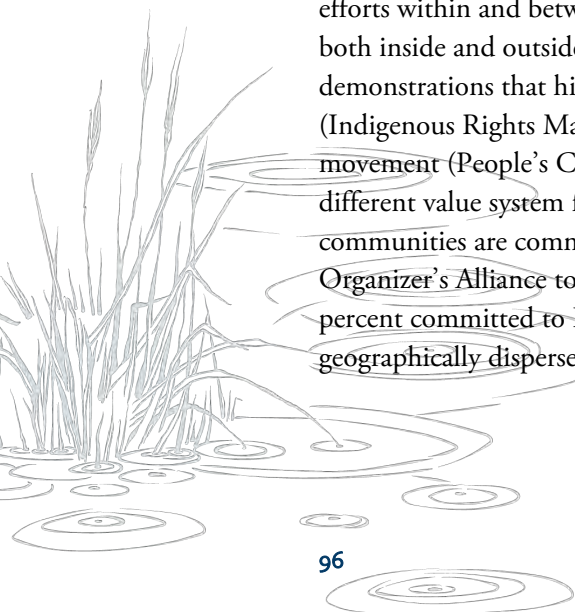




Image 8. Indigenous youth march on the streets of Capitol Hill, Washington, DC during the People's Climate March in 2017 © 2017 Jennifer Veilleux

Relationality is the understanding and worldview that we are a part of rather than at the centre of our environment, and, as a part of it, we are in a relationship with that environment. Within this relationship there is a responsibility. This responsibility goes beyond governance roles or stewardship to expand to action to honour, respect, and give back through action to the systems that sustain us – that part is the reciprocity. A merging of the best of Western knowledge coupled with the best of Indigenous knowledge (Image 5) is the most appropriate and effective way forward to face the challenges we have created and face in US water systems.



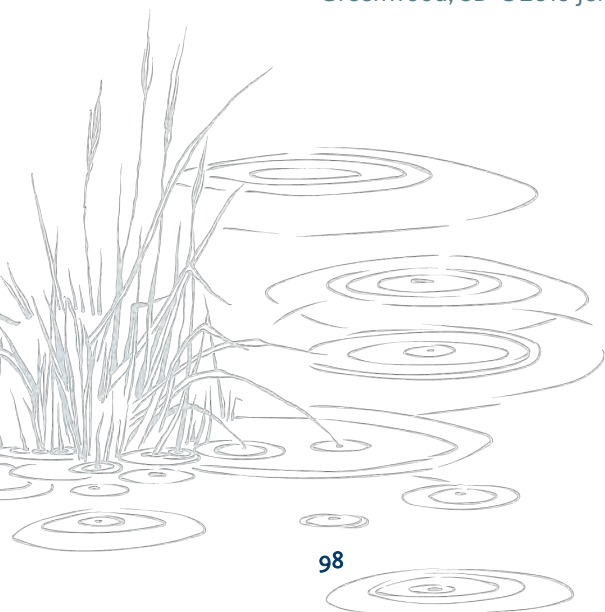
Image 9. Chief Arvol Looking Horse looks on as a drone operator explains a software program during 2016 Standing Rock camps © 2016 Jennifer Veilleux

Conclusion

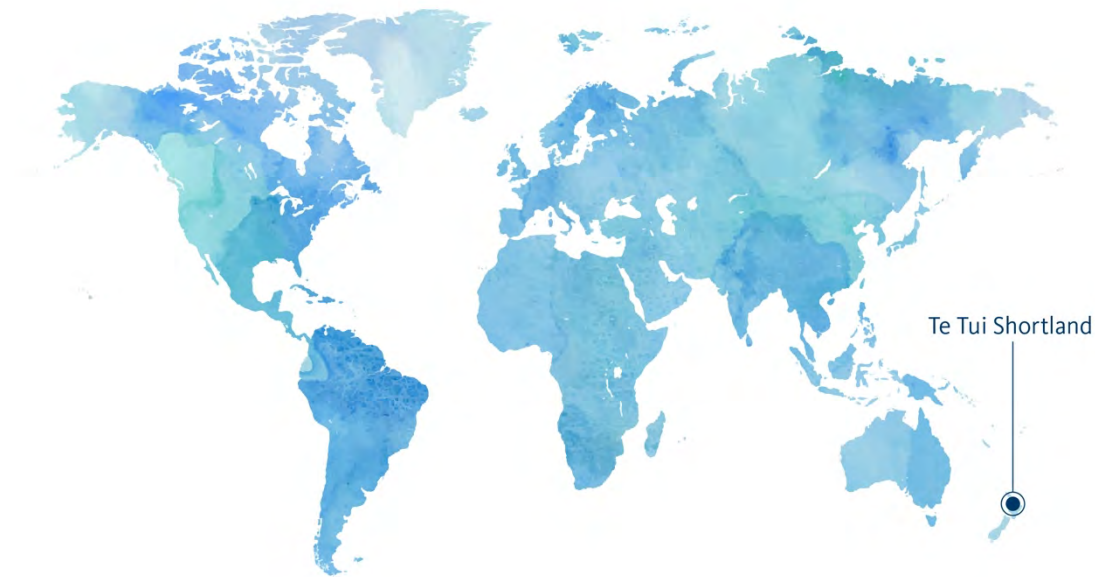
Indigenous approaches to water management employ a variety of tools dominated by Indigenous frameworks and values, lesser known in Western circles. We can learn if we listen and stop assuming that our way is the best or only way. Some of these practices are private, some of these practices are documented within the sub-discipline of Traditional Ecological Knowledge, almost all these practices are poorly integrated into, facsimile without the appropriate approaches, or completely absent from US water management. We can rectify this through law and policy governing water management by working directly with Indigenous communities on the waterways where they live. This needs to start by addressing cultural water practices that have been rendered near to impossible to carry out because of blind legislation that hampers the movement, practices, and actions of Indigenous people. Examples abound about cultural practices that are essentially illegal to perform under current US legislation that are necessary for responsibility and reciprocity in the relationship with water systems.



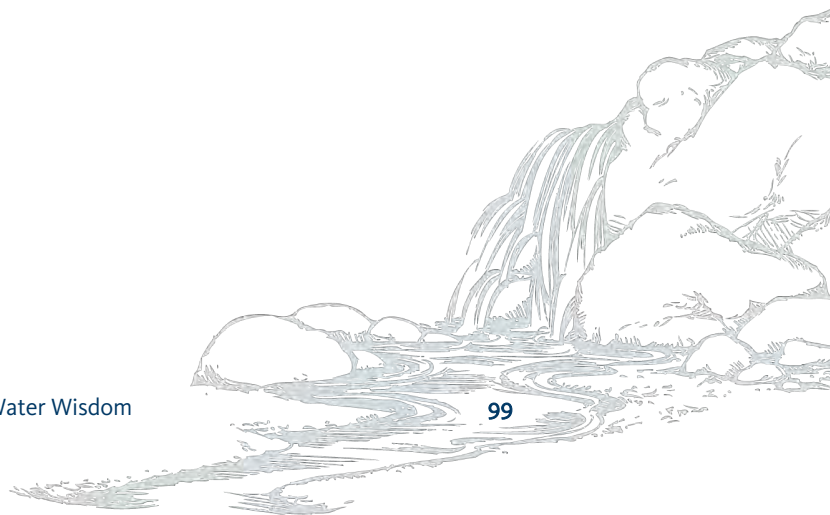
Image 10. Summertime on the Missouri River looking west and north from Greenwood, SD ©2018 Jennifer Veilleux



Te Tui Shortland



Acknowledgements



WAI

This contribution consists of the water cultural practices and ways of knowing of Indigenous Peoples of Aotearoa.

Indigenous water cosmovisions of Aotearoa

There are three origin sequences of the world for *tangata whenua* (“people of the land”): the transition from darkness and nothingness to light and something; the separation of earth and sky; and the creation of the natural world. At each stage, water is a critical actor.

Genealogical charts express the organic processes of the beginning of time, such as that recorded by Reverend Maori Marsden whereby the beginning is described as the germination of a seed:

Te Pu – the shoot

Te More – the taproot

Te Wew – the laterals

Te Aka – the rhizome

Te Rea – the hair root

Ko Te Waonui – the great forest

Te Kune – the conception

Te Whe – the consciousness

Te Kore – the nothingness

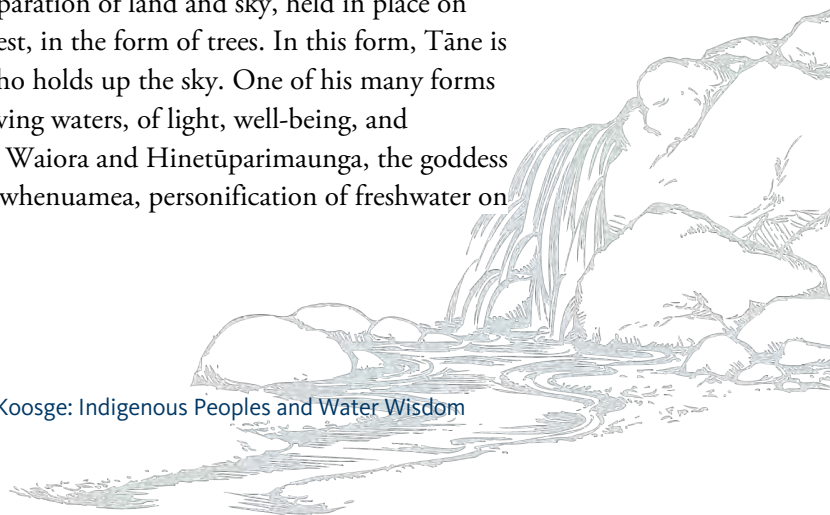
Te Po – the night

Ki nga tangata Maori na Rangi raua ko Papa – and to the people of the sky and earth

Ko tenei te timatanga o te ao – this is the beginning of the world of light

It is without a doubt that creation required water as an essential ingredient for life. At the completion of the separation of Ranginui (sky father) and Papatuanuku (earth mother), Ranginui cried tears of love for Papatuanuku to help her to grow plant life to cover and protect her.

Water is brought about through the separation of land and sky, held in place on earth through Tāne, the god of the forest, in the form of trees. In this form, Tāne is known as Tāne-Toko-Rangi – Tāne who holds up the sky. One of his many forms is Tāne te Waiora – Tāne of the life-giving waters, of light, well-being, and prosperity. It was the union of Tāne te Waiora and Hinetūparimaunga, the goddess of mountains, that brought about Parawhenuamea, personification of freshwater on



land. That first sacred teardrop became Te Ihorangi, Atua of rain, parent of the hundreds of different forms of rain and snow, each with its own name, and also parent of Tuna, the freshwater eel.

Water is also explicit in the origin story of Hineahuone, the first human woman, who was shaped by Tane Mahuta and gifted elements from each of the gods. Tumatauenga (the god of war) gave her stomach. Tawhirimatea (the god of wind) her lungs. Tangaroa (god of the ocean) the water to flow through her body... and ours.

Throughout Polynesia, water is known as a supernatural being; as Tangaroa/Tangaloa, Maru, Hine Te Repo, and many other names. Tangaroa is a spiritual, living, intelligent being, which responds to people according to their energy and relationship to the water. Water has a memory of its own and changes its form according to the energy it encounters. Waterways are superorganisms – one river, with all of its abundant species, living in harmony as one.

Customary water law

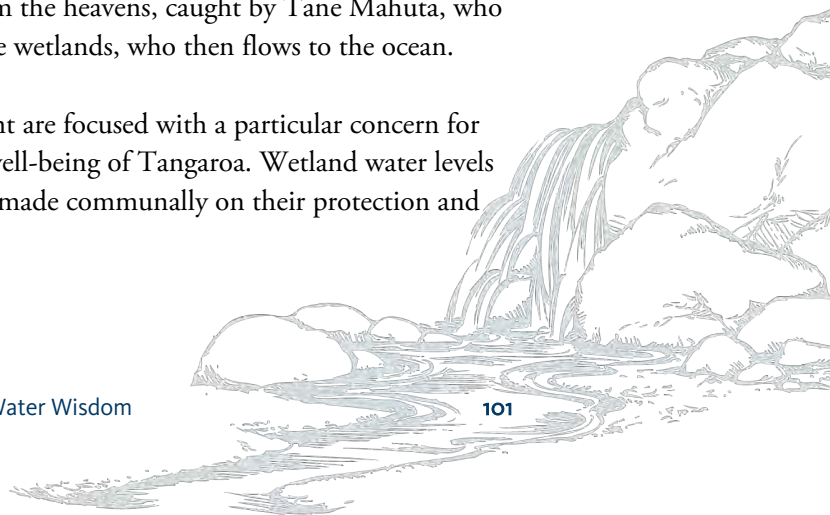
Indigenous water system dynamics

There are *tikanga* (customs) observed when interacting with water. A custom of respect, of reverence for the *waiora* “life-giving” properties, which governs the day-to-day behaviour of communities and embodies customary law. The interrelationship of Indigenous Peoples with water, along with the interacting relationships of birds, plants, water and insects, and deep understanding of system dynamics is common among Indigenous customary law.

We acknowledge the *taniwha* water spirits that inhabit waterways and water sources, ensuring their continued protection and replenishment. We pray to the waterways and hold water ceremonies for purification and consecration of people and events and understand how our reverence changes the *mauri* (life essence) of water.

We hold sacred the law of *utu*, of return, reciprocity, balance, harmony, and equilibrium. The need to ensure the water cycle ever flows. That the rain falls from Ranginui and is revered as coming from the heavens, caught by Tane Mahuta, who feeds Hine Te Repo, the goddess of the wetlands, who then flows to the ocean.

Practices of environmental management are focused with a particular concern for riparian habitat known to ensure the well-being of Tangaroa. Wetland water levels are managed locally, and decisions are made communally on their protection and



use, as wetlands are often administered by multiple Māori families. Traditional knowledge informs the actions taken to release and hold water according to the optimum health of the plant life, animal life such as eels, and other fauna living within the wetlands.

Water is the traditional mode of transport and access to Māori lands, territories, and resources. It defines cultural boundaries among Māori ancestral lands, demarcating boundaries between families and sub-tribes. But it should be remembered that water is not just an ingredient but an active participant in the making of life. As water is 80 percent of all living things, organisms absorb many essential nutrients from water. For all of these reasons, it is commonly known that Māori have an abhorrence for waste to be discharged directly into water.

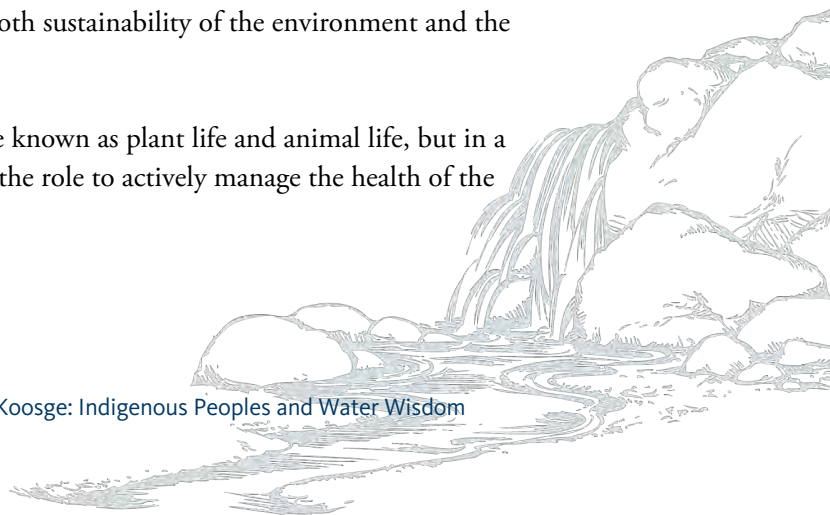
Māori have the ability to “commune” with water, to listen, smell, taste, and observe the waters and understand what each variation means. The well-being of Tangaroa demonstrates the ability to work together, to care for the riches of nature, to remember and retain the skills that the ancestors refined over thousands of years, and to honour responsibilities to Atua (the gods and spirits). All of these practices reward Māori with abundant *kai* (food), and that in turn increased their *mana* (esteem) as hosts.

Most names of waterways were imparted after great ancestors, who were often the first to inhabit the area. Waterways illustrate the communities’ identity and stories of origin. The formal way of introducing oneself as a Māori begins with the name of our ancestral mountain and follows with the name of our ancestral waterway. The river is a symbol of life.

***Kaitiakitanga*: Guardianship and protection**

Water communicates its needs to us, and our comprehension depends entirely upon the intimacy of our relationship with it. The maintenance of this relationship sits at the heart of *kaitiakitanga* (the principle of care and protection). *Kaitiakitanga* is based on traditional Māori world views and includes the conservation, replenishment, and sustainability of the environment. It is integrated with the spiritual, cultural, and social life of *tangata whenua*; is holistic across land and sea; includes people as a descendant and integral part of the environment; is locally defined and exercised; does not focus on ownership, but on authority and responsibility; and is concerned with both sustainability of the environment and the utilization of its benefits.

Traditionally, *kaitiaki* (guardians) were known as plant life and animal life, but in a modern context, Māori have taken on the role to actively manage the health of the



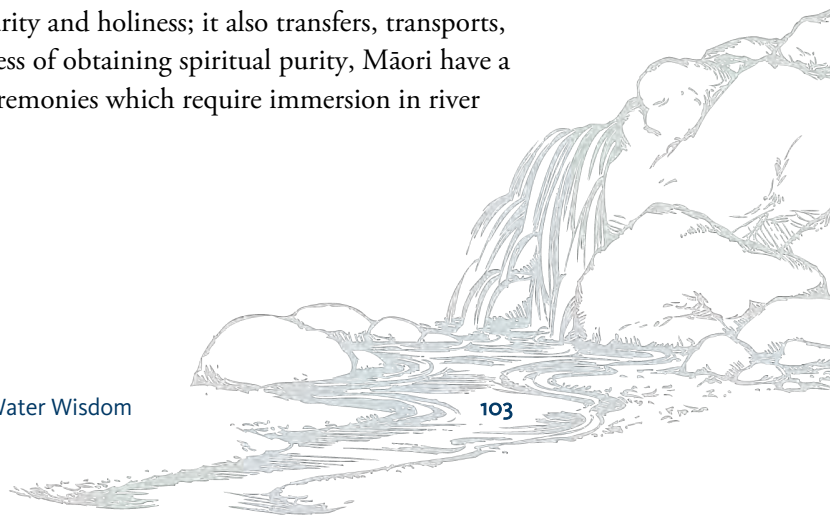
environment from an Indigenous perspective. While individuals may have specific roles, these are all exercised as a collective responsibility determined through *whakapapa* (genealogy) and *tikanga* (custom). Collective decisions to take action in improving the well-being of waterways are made during community meetings held at *marae*, the central ceremonial gathering place of the community. Local knowledge is shared and discussed at length, and when decisions are made, they are validated by closing prayers and a feast of the food of the local waterways and cultivations. Their care for water supports the sacred relationship to traditional crop varieties, wild food, medicinal plants, and other *taonga* (treasured possessions).

The potential of water and its healing powers

The importance of water is reflected in the many names for water: *Waiunu* or *Waimaori* refers to drinking water; *Waipukepuke* is water that has been whipped by the wind to form peaks; *Waihuka* is frothy water; *Manowai* is water that has deep, strong undercurrents; *Waiwhakaika* refers to the specific ceremonial waters for the embedding of knowledge; *Waiariki* refers to healing or curative waters, often hot springs. At the other end of the scale we have *Waiparu*, clouded waters; *Waipiro*, odorous waters; *Waikino*, polluted waters; *Waikawa*, rancid, slow-moving waters; and *Waimate*, stagnant, dead, or death-inducing waters. These are just to name a few.

Our ability to interact with these many forms of water appropriately depended on our ability to “commune” with the water, to listen, smell, taste, and observe the waters and understand what each variation meant. Water has intelligence, comprised of its nature and the multitude of life forms within it that respond to various stimuli. It communicates its needs to us, and our comprehension depends entirely on the intimacy of our relationship with it. The maintenance of this relationship sits at the heart of *kaitiakitanga* – our principle of care and protection.

The relationship with waterways provides gifts for the health and well-being of both parties, including both sustenance and healing. *Waiora* is a healing water that has touched the deities and imbues the healing power on those who connect with it. It has the function of imbuing *mauri* (life essence) and *mana*, committing a thing or a person to a sacred purpose, and consecrating places, objects, and people. It can transition you from the restrictive spiritual state of *tapu* to the common state of *noa*, and back again. *Wai* is present at the most sacred rites of passage – that of birth, and that of death. *Waiora* transmits purity and holiness; it also transfers, transports, and transforms impurities. In the process of obtaining spiritual purity, Māori have a regular practice of pure or cleansing ceremonies which require immersion in river water.



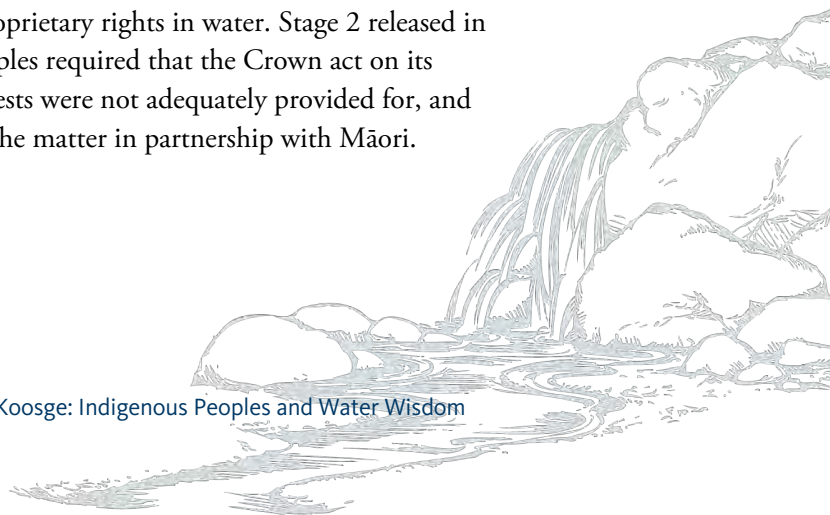
Water responds to your *mauri* (life energy) substance. Vibrations change the molecular structure of water, in the form of touch, thought, emotion, sound, prayer/mantra, and meditative presence. Water is a medium of consciousness. How we treat water changes the way in which the water interacts with us. Water charges the well-being of living beings. The reverberation of water, conducting within us and around us can change our *mauri*. With certain control over our energies, Māori believe that we can influence the memory of water and of our physical bodies immensely, to a point where everything about them can change.

Even within sacred water forms, distinctions existed for the use of *wai tapu*, which could be used for the cleansing of corpses, and *waiora*, which could be used for healing and giving life. Particularly for *wāhine*, as the carriers of the birth waters, *wai* is a potent reminder of the ability to give life and to oversee the transition to death. Water ceremonies include the use of water for infusing and imparting medicine through compresses, baths, steam, and other applications. Water is a known restorative tonic used to relieve pain, for minor burns, reducing fever, inducing perspiration, as a diuretic, and an eliminative. Water is an antiseptic, a laxative, a stimulant, an aesthetic, a sedative, antispasmodic, relieves thirst, is an emetic, and can raise body temperature.

Traditional knowledge of the lunar and solar cycles which impact on water has been developed over many generations. It is well known among Māori that the maximum impact of planetary energy affects the water and ourselves. Traditionally, planting and gathering food aligned with this *maramataka* (Māori lunar calendar), and there are many versions in existence still followed today. Ceremonial times of prayer, fasting, and advancing the inner journey are held during the first quarter on the day named *Hune*, on full moons and new moons, to balance ourselves. The moon enhances energy; if you are peaceful you will become more peaceful.

New Zealand's colonial history of water

There is a growing renaissance in Aotearoa of an Indigenous way of managing the environment. In 2002, the spiritual dimension to water was excluded from any meaning in the Resource Management Act when the High Court made the decision from the *taniwha* at Ngawha Springs that Takauere did not exist. This was during an appeal on the resource consent for Ngawha prison. The stage 1 report of the Waitangi Tribunal on the National Freshwater and Geothermal Resources Claim found that Māori still have residual proprietary rights in water. Stage 2 released in 2019 concluded that the Treaty principles required that the Crown act on its knowledge that Māori rights and interests were not adequately provided for, and urgent action was required to address the matter in partnership with Māori.



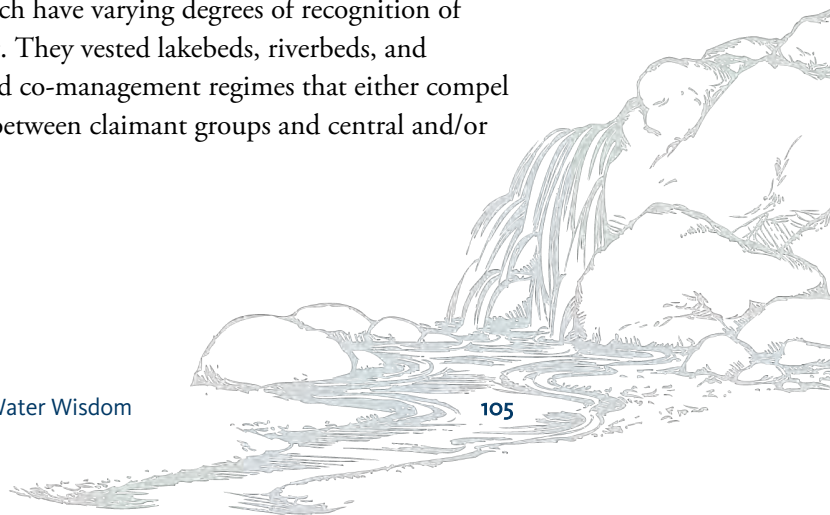
Cultural indicators have also become mainstream since the early work of Gail Tipa on developing new methodologies and tools, such as the Cultural Health Index and the Cultural Flow Assessment method, to enhance Indigenous participation in freshwater management in 2006. The first cultural environmental monitoring *wananga* was held in Wellington in 2009, calling on Māori values to be included in State of the Environment reporting. Subsequently there was direction in the Environmental Reporting Act 2015 to include cultural values in reporting.

Over time, due to the efforts of Māori, water has gained agency in decision-making and is now a legal actor in certain locations. The use of legal personality to protect water systems in law through the granting of legal rights to rivers is becoming more common among Indigenous communities. Legal personality refers to the legal term “environmental personhood”. Environmental personhood was first proposed in law in the 1970s by American academic Christopher D. Stone. This assigns to these entities the rights, protections, privileges, responsibilities, and legal liability of a legal personality, and also grants natural entities a similar legal status to that of corporations, with three primary rights: to sue and be sued, to enter contracts, and to take legal action to protect themselves. Environmental personhood is now taking off worldwide, driven primarily by environmentalists and Indigenous Peoples.

A number of rivers around the world have been granted environmental personhood. The Whanganui River in Aotearoa was the first to be recognized in 2017, followed soon after by the Ganges and Yamuna rivers in India and the Atrato River in Colombia.

The Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 was passed as a historic law recognizing the special relationship between the Whanganui River and the Whanganui *iwi* (Tribe). The Tribunal found that the river was a single and indivisible entity, inclusive of the water; that Whanganui *iwi* possessed and held *rangatiratanga* over the river and never sold those interests; and that acts of removing possession and control from *iwi* were and are contrary to Treaty principles. It also provided for the river’s long-term protection and restoration by making the river a person in the eyes of the law. The saying “*Ko ahau te awa, ko te awa ko ahau*” (I am the river, the river is me) proclaims the intrinsic ties that connect the people and the river to one another.

Other water-related settlements include the Waikato, Waipa, and Kaituna rivers, and the Rotorua Lakes settlement, which have varying degrees of recognition of Māori conceptions of the environment. They vested lakebeds, riverbeds, and surrounding lands to Māori and created co-management regimes that either compel or encourage relationship agreements between claimant groups and central and/or local government.



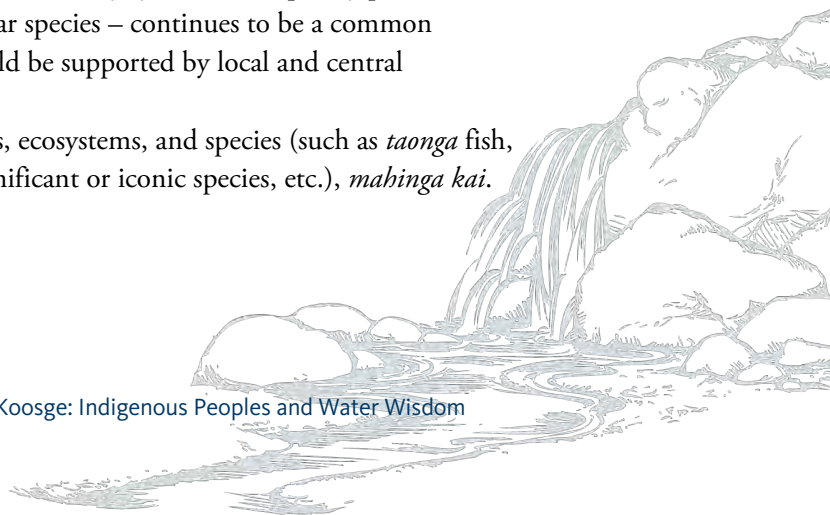
Through these negotiations came the establishment of Te Mana o Te Wai 2014-2019. Te Mana o Te Wai (the unique relationship *iwi* have with freshwater – the integrated and holistic well-being of freshwater bodies) is recognized and protected. Recognition and implementation of these relationships is a longer-term exercise, especially as subnational government units in New Zealand such as regional councils are still exploring what this means.

Options for future management

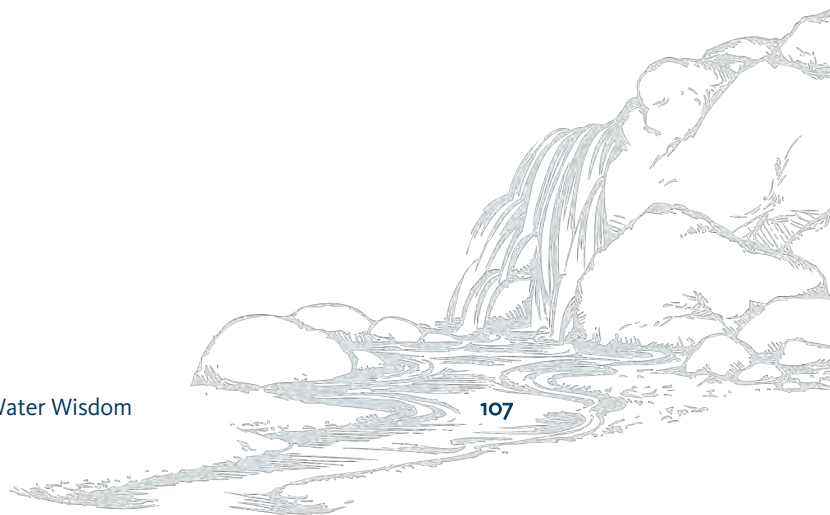
The following sections are intended to support international, national, and regional policymakers to embrace Indigenous Peoples' knowledge, values, innovations, land tenure, customary management, and rights in regards to water.

Deeper values for water as a living entity with rights to inform governance and become entrenched in local decision-making can be actioned as follows:

- Ownership of water and the role of local communities should be articulated in local water policies and regulations.
- Engagement processes/frameworks with *iwi/hapū* that encourage meaningful relationships with councils are required. Respect for Indigenous environmental governance and decision-making structures, including what Free, Prior and Informed Consent is to a community and how traditional knowledge is protected, is essential for the future management of Aotearoa: decision-making, management, and use of water; management and use of cultural resources; achieving the right governance arrangements; co-management of freshwater, including *māhinga kai*, *kaimoana*, *māhinga mātaītai* sites (standards, quality, condition); and the maintenance of water bodies (and access to them) for customary practice and use.
- Support for climate change adaptation through traditional knowledge, innovations, and practices should be considered.
- Activities which embody the customary laws of the territory could be adopted as policy. These include the remapping and reversion to native names of places and organisms; providing for hands-on community interventions and restoration; intergenerational conservation and observation practices with youth and elders of different genders at culturally important sites, etc. An example of a customary law commonly found in Aotearoa is *Rahui* – a traditional Polynesian customary system of temporary prohibition on the use of an area or particular species – continues to be a common practice among Māori and should be supported by local and central government.
- Protect/sustain/enhance habitats, ecosystems, and species (such as *taonga* fish, tuna, shellfish, plants, birds, significant or iconic species, etc.), *māhinga kai*.



- Water quality: Providing meaning and definitions around *mauri* (setting cultural standards, limits, thresholds, and benchmarks) based on Indigenous practice will help other forms of decision-making.
 - Cultural indicators designed and monitored by local communities give a more holistic outlook of well-being. Indicators have been developed throughout the county. The water allocation process does not account for the complexity of the relationship that *iwi* and *hapū* have with water and for this to be reflected in the policy and planning. Water must be set aside and allocated to Māori land and land returned as part of Treaty settlements. There are concerns about the impact of trading and the availability of water, especially in terms of their Treaty settlements. Water quantity limits are needed in response to increasing competition for the allocation of rights to water.
 - Research should include freshwater research, Māori-led projects, and the recognition and use of traditional knowledge.
 - Ensure that other dimensions to life are respected other than just physical and chemical properties – also the wider spiritual values of water.
 - Indigenous techniques such as micro irrigation, wetland water quantity management, riparian planting, etc. should be promoted.
 - The role of rural Māori women requires investigation, value, and enhancement.
 - The price of sanitation and water services must be affordable for all without compromising the ability to pay for other essential necessities guaranteed by human rights such as food, housing, and health care.
 - Community and micro irrigation requires agency support and financial institutions' support.
- Conversion to Indigenous agroecological and organic farming can turn the tide on the extreme pollution suffered by water today.



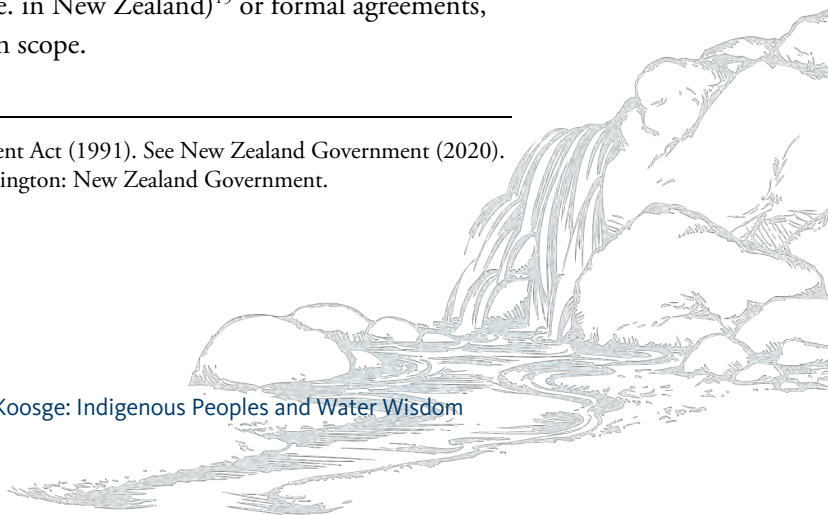
Conclusion

As illustrated in the contributions, many Indigenous Peoples have strong connections to specific territories, and they often maintain living approaches that, to a large extent, depend heavily on their local environment and waters. Such connections embody important relationships between people and their environment. Understanding and learning from Indigenous Peoples about how such relationships are expressed and maintained provides an important opportunity for the water community to reimagine their relationships with their water bodies – for example, learning about how concepts such as stewardship, respect, reciprocity, and relatedness are interwoven into water governance and applied in practice through complex systems of management based on relationships and through Indigenous knowledge.

Water bodies play a key role in knowledge mapping, as teaching tools, and provide directional sense, among other aspects of Indigenous knowledge construction. Place, meaning, values, and knowledge are very strongly connected to water, whether through the sound of water bodies in their interaction with land bodies or the long-term environmental history of a river, as noted in some contributions. Indigenous knowledge is built from within these relationships, as opposed to being underpinned by an externally sourced framework such as used in Western scientific approaches. Many Indigenous values are communicated through the landscape, waterscape, and soundscape (Hayman 2017), and indeed water is used as a medium to explore many facets of societal need.

To date, the experience and inclusion of Indigenous Peoples within water governance frameworks has been poor. While there has been progress in recent years, including in post-colonial settler States such as Australia, New Zealand, and Canada, such inclusion either remains limited, or their mandate of action remains heavily prescribed by the State. Even in those locations where Indigenous Peoples' voices are stronger, the inclusion of Indigenous values is still framed or limited within wider objectives that are delineated or set by the State. Often Indigenous values are limited to influencing the margins of policy, as opposed to core policy development. In some jurisdictions, there may be some formally recognized Indigenous values within legislation (i.e. in New Zealand)¹⁵ or formal agreements, but these values are often still limited in scope.

¹⁵ For example, under the Resource Management Act (1991). See New Zealand Government (2020). National Policy Statement for Freshwater. Wellington: New Zealand Government.

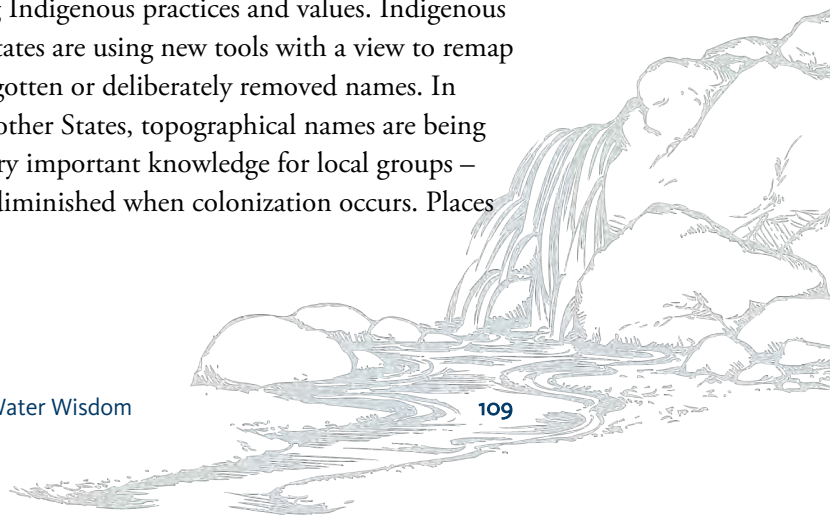


Because of this lack of understanding and recognition of Indigenous Peoples' worldviews, governance approaches, rights and obligations, or the opportunities to integrate different knowledge systems, many Indigenous communities have had little modern say on the management of water resources on which they rely or have an inherent obligation to protect. This lack of understanding has played out in different ways to the detriment of Indigenous communities. For example, Indigenous communities often face difficulties in terms of both access to and ongoing maintenance of water and sanitation infrastructure.

Access and maintenance are often the result of economic or political marginalization, but there may be other exacerbating factors, especially if such services are offered without understanding local cultural contexts or ensuring that they fit within local understandings or values around water. There are tools that are meant to be exercised when engaging with Indigenous Peoples, such as the use of Free, Prior and Informed Consent, but project or process examination is usually unidirectional, and there are limited attempts to consider development issues from the perspective of Indigenous values, rights, and obligations. The use of Free, Prior and Informed Consent may not actively ensure that Indigenous values are identified and incorporated into any decision-making process.

While recent international policy helps to better define conditions and expectations within which Indigenous Peoples should be engaged in processes that affect them and using the resources on which they depend, more work on including cultural values is necessary. At present, the interpretation of distinctive spiritual relationships is often limited to relying on social well-being indicators or physical manifestations of culture practices such as specific locations as the means of evaluation, although tools – i.e. cultural flows or cultural health indexes (Moggridge et al. 2022) – are available. Limited policy or direction has addressed how those relationships are expressed and can be considered in wider decision-making, or may only be inclusive of a small subset of wider Indigenous values.

Due to these limitations within water governance processes, there is a strong focus in Indigenous communities on obtaining legal recognition of water and land rights to better protect and steward their territories, although it is important to remember that Indigenous Peoples retain and exercise inherent water rights as well as their obligations as part of their locally expressed relationships independent of sovereign elements, in accord with long-standing Indigenous practices and values. Indigenous groups found in post-colonial settler States are using new tools with a view to remap their territories and returning long forgotten or deliberately removed names. In Australia, New Zealand, Canada, and other States, topographical names are being returned to original names. Names carry important knowledge for local groups – knowledge built over generations but diminished when colonization occurs. Places



names convey relationships and knowledge, and are important for many very strong aqua-centric relationships.

More effort to support Indigenous Peoples to document their activities in water governance is necessary, especially with global water challenges strengthening. This can include a range of activities and roles for Indigenous Peoples and their partners, whether initiated as self-resource activities, partner-supported actions, Indigenous-led collectives, or co-governance entities.

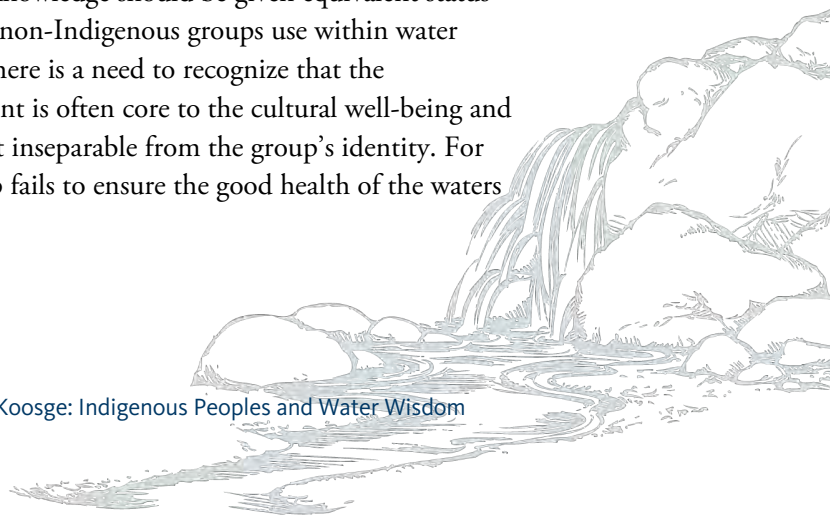
Recommendations

Despite differences, most contributions in this report highlight the importance of taking a relationship-based approach to governance, including water and land, and there are some common themes that continue to be stressed, echoing Indigenous scholarship.

Given the extent of Indigenous-governed territories (whether formally or informally recognized) and the role they play in water, including many important headwaters on which others downstream are dependent, it is clearly important to improve meaningful engagement with Indigenous Peoples. Meaningful engagement requires that attention be given to the different forms of knowledge and values. While some countries such as Canada and Aotearoa New Zealand have increased recognition of these other worldviews or values (such as in the Te Urewera Act 2014 in Aotearoa New Zealand), international recognition is usually dependent on local context and sometimes special conditions (such as through the Treaty settlement process in Aotearoa New Zealand). As the contributions in this report illustrate, Indigenous values and their manifestations can also differ markedly between different territories and groups according to local factors.

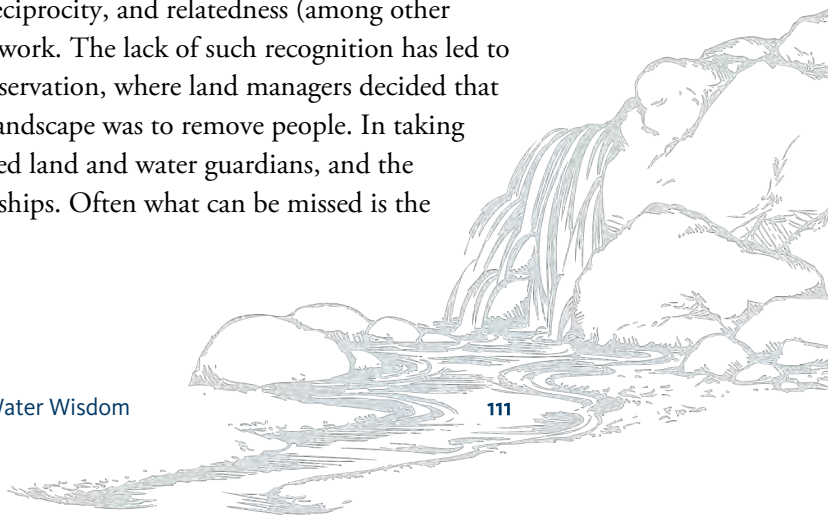
Fostering a relationship-based approach requires new effort, and the following recommendations for the international water community are important to consider.

- i. Recognize that Indigenous Peoples' approaches to water are often based on a long-standing relationship with their environment, and on concepts such as respect, reciprocity, and relatedness/kinship. This is a clear message from many of the contributions. This fosters deep and abiding knowledge based on critical experience, and this knowledge should be given equivalent status to the scientific knowledge that non-Indigenous groups use within water governance decision-making. There is a need to recognize that the relationship with the environment is often core to the cultural well-being and identity of a group and is almost inseparable from the group's identity. For example, if an Indigenous group fails to ensure the good health of the waters



(among many different cultural indicators), then local culture can be diminished. Cultural identity is not simply a case of sacred sites and language (although these are very important); it is also about maintenance of relationships with place. This also means that the impacts of climate change have both direct and secondary impacts by shifting ranges of flora and fauna, as well as hydrological ranges, which affects the relationship between peoples and their territories.

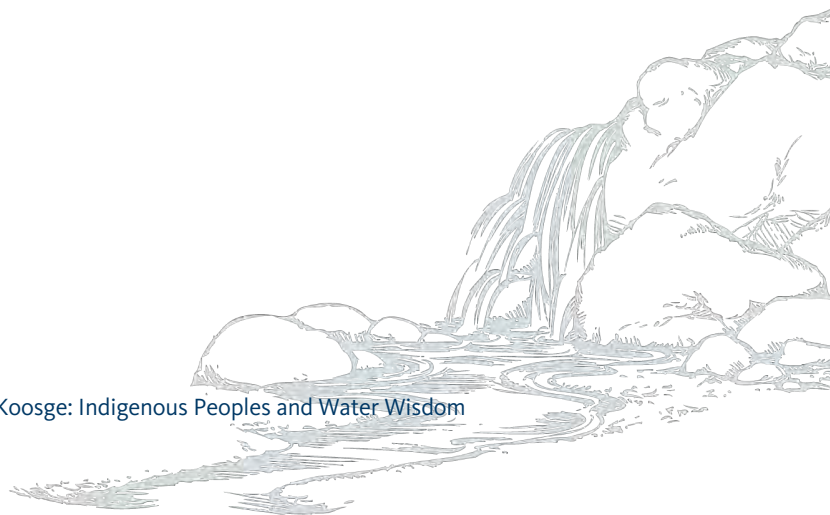
- ii. Decision-makers need to better understand the differences between relationship-based approaches and conventional water resource management and the role of intent. While some activities in relation to water bodies may be similar, such as ecological or riverbank restoration, the intent and purpose underpinning each approach is different. This means that prioritization processes will be different, including across short-, medium-, and long-term perspectives. For example, in Indigenous stewardship, the purpose may be a healthy river first, reflective of long-standing relationships, with uses of the water being secondary, whereas in management, pre-determined objectives around water quantity may be privileged over other values, even the state of the river.
- iii. Recognize the individual and unique character of each water body or, indeed, local landscape. Water should not be treated as an amorphous or nebulous entity, but instead should be recognized as water bodies – each with its own unique living character – and should be maintained as such. There is a tendency in water and land management to treat waters or land as interchangeable resources, irrespective of relationships of communities. Treating each as unique starts to change the tenor of the conversation. Many groups see water bodies as whole living entities, and management is based on a holistic perspective. Activities should be geared towards governing the whole of the river and reducing a river to a set of components. Water resource management tends to break water down for “efficiency reasons” although this may not be effective as a whole.
- iv. Recognize that while many Indigenous groups’ governance mechanisms have apparent similarities to ecosystem-based management or ecosystem services, the application of these mechanisms is defined within the relationship of an Indigenous community to its territory. Resource use is still bound by the values or principles of respect, reciprocity, and relatedness (among other values) within a relational framework. The lack of such recognition has led to challenges in sectors such as conservation, where land managers decided that the best way to protect a given landscape was to remove people. In taking this approach, they often removed land and water guardians, and the expertise based on these relationships. Often what can be missed is the



carefully constructed framework through which resource use takes, or took, place.

- v. Better resource the participation of Indigenous Peoples in water governance, whether local or global. Resources should be made available for local groups to be able to better engage and participate in decision-making within their own watersheds and communities, as well as give an opportunity to reach out to groups that face similar challenges and share similar values-based approaches (Artelle et al. 2018, Leonard et al. 2023). This should lead to peer-to-peer exchanges and knowledge-sharing between different Indigenous communities. At the global level, it is also important to re-orientate the global conversation from Indigenous Peoples being only victims to recognizing their important role as mentors and actors and respecting their values in water governance. While Indigenous Peoples have often been marginalized and face intolerable conditions (and this should not be forgotten), there should be an increased focus on how other communities have a lot to learn from them in the application of relational values of respect, reciprocity, and relatedness within water body systems.

The many different contributors have offered insight as a gift to those in the water community striving to heal the waters of their respective places. In many respects, these recommendations are designed to build a better platform for the understanding and inclusion of Indigenous values into decision-making as well as to build more equitable partnerships, while recognising that much more needs to be done.



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Annex 1: Places inhabited by *Tah Mu Kha* spirits (adapted from Paul 2018)

No.	Name	Accessibilities	Reasons
1.	Orphans' fallow	Only those whose parents have already died will dare to clear this land	Parents of those who cleared the land in the past died
2.	Unmarried people's fallow	This type of land is reserved for single unmarried people	People who cleared the land in the past lost their spouse or children
3.	Widows' fallow	Only widows can have access to this land	The spouse of those who clear this land died in the past
4.	Ecologically unique places	Traditionally protected as a place of the <i>Nah Htee</i> water spirits or <i>Tah Mu Kha</i>	<i>Htee Meh K'Lah</i> ('mirror water') is a spring-fed pool with no outflow
5.	Other unique landforms and water bodies which are believed to have <i>Tah Mu Kha</i> or <i>Nah Htee</i>	No villages can be established in some areas, no land can be cleared for farming in others, and even people dare not go at all to some other places.	Subjected to various rules and taboos as inhabited by <i>Tah Mu Kha</i> or <i>Nah Htee</i>

Annex 2: Flora and fauna found in the Salween river basin in Mutraw District, Karen State

No.	Descriptions	Quantity	Examples and note	Source of research
1.	Edible forest products	Over 150 different kinds	“banana, bamboo shoots, mushrooms, honey, different types of ginger, ferns, and many tubers and root species”	KESAN (2005, 21)
2.	Rice	Over 40 different types		KESAN (2005, 13)
3.	Sugarcane, sesame, coconut, and chilli varieties			KESAN (2005, 13)
4.	Orchids	40 different species		Community-led women’s research team between 2012 and 2013 in Luthaw Township (KESAN)
5.	Valuable tree species		Teak, Pingado, and Padauk, alongside other valuable non-timber forestry products such as Rattan	KESAN (2008, 37)
6.	Terrestrial mammal and bird species found	Over 35 different species	Two of these were classified as endangered on the IUCN’s Red List of Threatened Species, eight as Vulnerable, and five as Near Threatened	KESAN-KWCI and Saw Sa Bwe Moo et al. (2017)
7.	Species found within the appendices of the Convention on International Trade of Endangered Species (CITES)	35 different species		KESAN (2008, 46)
8.	Fish species	170 species	60 of which are endemic	KESAN (2008, 43)
9.	Highly endangered arboreal mammal species found		The loris, various gibbon species, and the pangolin, currently one of the world’s most trafficked mammals	Saw Sa Bwe Moo et al. (2017); Sawe (2017)
10.	Highly endangered megafauna found		Tigers and gaur	KESAN (2008); Saw Sa Bwe Moo et al. (2017)

Annex 3: Field work and interviews

No.	Interviewee	Description	Method and date
1.	Andrew Paul	Associate researcher with KESAN who has done research on Salween Peace Park and Kaw system	Focus Group Discussion (Zoom meeting) 15 October 2020
2.	Saw Sha Bwe Moo	Karen Indigenous Expert who has done extensive research in and along the Salween river basin	
3.	Interview with SPP Governing Committee Secretary and KNU District Chair		Focus Group Discussion (Zoom meeting) 19 October 2020
4.	Saw Hae Say	KNU Forestry – Land Demarcation Local Department Head	In-depth interview during SPP Governing Committee Meetings on 12 to 17 October 2020
5.	Saw Hay Kya Htoo	<i>Hteepoe Kaw K'sah</i> of community members	
6.	Saw Klor Poe	Community Elder and Advisor	
7.	Saw Tha Say	Community Elder and Advisor	
8.	KESAN/SPP	KESAN research team and Salween Peace Park leaders	Group Discussion (Zoom meeting) 23 and 31 October 2020