

REVIEW ESSAY

Toward a Global Water Ethic: Learning from Indigenous Communities

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Global Challenges in Water Governance: Environments, Economies, Societies, Jeremy J. Schmidt and Nathaniel Matthews (Cham, Switzerland: Palgrave Macmillan, 2017), 123 pp., \$54.99 cloth.

Global Water Ethics: Towards a Global Ethics Charter, Rafael Ziegler and David Groenfeldt, eds. (Abingdon, U.K.: Routledge, 2017), 316 pp., \$145 cloth.

High and Dry: Meeting the Challenges of the World's Growing Dependence on Groundwater, William M. Alley and Rosemarie Alley (New Haven: Yale University Press, 2017), 304 pp., \$30 cloth.

Water is life. Without access to clean, fresh water, life ceases to exist. The profound importance of water might lead one to think that every measure of protection, in every corner of the world, would be put in place to protect and care for this life-giving substance. This idealized picture, however, is far from the current state of water governance. Whether due to gross negligence, ignorance, structural barriers, economic disparity, or some combination thereof, our world faces a global water crisis. At the center of this crisis is inequity: In one corner of the world, rivers have been diverted to make deserts bloom with gardens, golf courses, fountains, and pools; while in other corners of the world, women walk hours every day to collect increasingly scarce water for their families' survival.

Throughout the world, indigenous communities that rely on subsistence foods are also severely affected by environmental stressors associated with global climate

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change and its impact on water supplies. While these inequities continue unchecked, roughly three billion people—not only in the Global South but also in the poorest sectors of wealthy societies—lack access to clean water. Unsurprisingly, this most greatly affects the most vulnerable of our populations, with the majority of premature deaths of children under five resulting from the lack of clean water. As the world's population—estimated to reach 9.7 billion people by 2050—continues to soar, the number of people lacking access will also grow.¹ To stave off catastrophe we are in desperate need of a new global water ethic.

The three recent works considered here move forward the conversation surrounding this crisis, and in different ways help to provide a foundation for such a water ethic. In *Global Challenges in Water Governance: Environments, Economies, Societies*, Jeremy J. Schmidt and Nathaniel Matthews provide a historical overview of global water governance and the contemporary challenges that need to be addressed. The volume brings to light how multiple intersecting needs—environmental, economic, and societal—are often at odds when it comes to managing the water sector. That said, exploring water governance within a broader context, as they do in this volume, provides suggestions for possible paths forward in negotiating the challenges of global environmental change. Rafael Ziegler and David Groenfeldt's edited volume, *Global Water Ethics: Towards a Global Ethics Charter*, presents a collection of essays that outlines a diverse range of water-related issues and calls for greater attention to global water ethics. The contributors consider the challenging question of how to engage a water ethic in a global context, while offering local and empirical examples. Finally, in *High and Dry: Meeting the Challenges of the World's Growing Dependence on Groundwater*, William M. Alley and Rosemarie Alley focus on the changing understanding and management of groundwater. Although groundwater is the primary source of drinking water for more than half the world, it is poorly understood and insufficiently protected in most governance models. In an accessible and compelling way, Alley and Alley provide a much-needed reexamination of how groundwater can be better understood.

The authors of and contributors to each of these volumes point to a variety of culprits of our modern water crisis: increased demand resulting from industrial and agricultural production, laws and policies that subsidize economic growth and externalize environmental and human health, increased demand for disposable goods, and rapid destruction of ecosystems, to name a few. Each of these

affects water either through overextraction or through pollution, while extreme wealth disparities exacerbate the issues.

A unifying theme of these volumes is a call for global water justice and the adoption of a global water ethic. Schmidt and Matthews, drawing on earlier work by Ken Conca, assert that “pursuing an adequate vision of environmental governance in the twenty-first century will require rethinking the structure of global environmental governance with the equality of rights and peaceful existence of those historically oppressed as a central goal—not as an addendum to, or ‘natural’ outcome of, international agreements or economic development.”² Addressing water governance through the lens of water justice and water ethics helps to prioritize the structural inequities that contribute to the increasingly uneven distribution of and access to clean water. These inequities are greatly exacerbated by declining water tables. As Alley and Alley write, “groundwater is viewed as a democratic resource, but as water tables decline, the poorest people lose out first as their hard-dug holes go dry” (p. 23).

As other scholars have noted, this premise can be taken further by applying concepts of water ethics to sanitation.³ The United Nations estimates that 2.5 billion people still do not have access to adequate sanitation and one billion still practice open defecation. These structural issues have disproportionate impacts on women, with a disturbing link between lack of access to sanitation and women’s safety.⁴ They further point to an urgent need to view water not just as a substance but as an intricate aspect of life that exists within the context of a hydro-social-political-economic nexus.

Viewing the problem through this hydro-social lens highlights the intricate relationship of power and decision-making in the governance of water.⁵ Schmidt and Matthews draw on the hydro-social scholarship to demonstrate how power and politics play out in how water is conceived. Some scholars have furthered this concept by proposing a “waterscape” approach, which includes *both* the geographic notion of a watershed (a geographic area defined by a drainage basin, where a boundary is determined by the flow of water from the highest to the lowest point) and the political, economic, and cultural influences that affect its governance. This approach follows the network of power and politics through the decision-making process for water governance.

For example, water scholar Jessica Budds has explored how decision-makers in the executive offices of mining companies in London directly affect the water supplies of local communities where the mines exist. Her similar work in Chile

highlights this complex of hydro-social relationships and its ultimate impact on local communities, which are directly affected by decisions driven by economic gain yet have little influence over the decision-making process.⁶

The concept is also taken up through the notion of scalar politics, in which the framing of a jurisdictional boundary affects the politics of governing water.⁷ Simply put, both the seemingly “natural” boundaries of watersheds, as well as the politically delineated municipal- and state-level boundaries, are constructed concepts, neither of which aligns perfectly with the other. This serves to create a fragmented system of water governance. Although the authors of the books under consideration do not explicitly engage the literature on scalar politics, their call for a global water ethic merits a closer examination of the links among power, jurisdictions, governance, and water. In particular, the contributors of Ziegler and Groenfeldt’s edited volume explore the ethics and epistemology of water governance, leading to a closer examination of power dynamics embedded in decision-making processes as well as the hidden biases associated with the construction and production of knowledge systems. In *High and Dry*, the authors show through different cases how the construction of political and jurisdictional boundaries affects access to water and thwarts efforts to protect water sources. Schmidt and Matthews, too, show how the changing perceptions of humanity’s relationship to water affect the priorities and management thereof. In this way, jurisdictional fragmentation fosters a disconnect between rights to water and the responsibility to protect it.

Water governance is both a physical issue (water scarcity and declining water quality) and a structural issue (lack of access and inability to pay for services), and it is always informed by values. As Schmidt and Matthews make clear, “no system of water management and no structure of water governance are value neutral” (p. 98). Throughout their volume, Schmidt and Matthews show how the ethics and values of the time influence the guiding philosophies and practices of water governance. For example, there was a notable shift from the “duty of water” that was linked to the creation of energy and irrigation in the first half of the twentieth century to the “right to water” as stated in the 2010 UN resolution on the human right to water and sanitation. This change in priority reveals a paradigm shift in the interpretation of the values of water governance. However, this shift has not been universal. While in some parts of the world dams are being decommissioned to prioritize ecosystem function over marginal returns of energy (such as the Elwha Dam in Washington State, USA), in other parts of the world

big hydro-projects continue to be developed (such as the Site C Dam in British Columbia, Canada) despite protests and opposition from the local communities. The link of political economy and development to water development projects—such as those funded by the World Bank—is also an important point of consideration. In these cases, development and economic growth are wrapped up in the idea of creating massive hydroelectric projects to bring electricity to urban settings—projects that have a tremendous impact on local communities and ecosystems.

In sum, each of these books provides important contributions to better understanding aspects of water governance. Treated as a set of three, the volumes provide a comprehensive and up-to-date overview of contemporary and historical water governance issues. What is missing, however, is a link to a deeper connection to water—a spiritual or nonhuman perspective. It is this perspective—one that is held by many indigenous cultures, whereby water is seen as a gift from the Creator to be revered and protected—that could help inform a new global water ethic. In the rest of this essay, I explain the effects of current water governance and climate change on indigenous communities, and integrate different perspectives to help round out the three books' call for a new water ethic.

TOWARD A NEW WATER ETHIC

Susan Lea Smith's chapter in the Ziegler and Groenfeldt volume begins with a defining moment in the call for a global water ethic: the inaugural Abel Wolman Distinguished Lecture, delivered in 1990 by one of the world's most prominent and respected hydrologists of the time, Luna Leopold. The timing of this lecture was significant, as it came on the eve of the 1992 Rio Conference on Environment and Development, which brought the concept of sustainable development to the world stage. In his lecture, Leopold outlined two guiding ethical principles for water management. First, he called for an ethos of protecting "the integrity of the whole of the hydrological continuum, including all elements of what we call ecosystems or watersheds, the rocks and soil, flora and fauna, air, water, and humans and the physical, chemical, and biological forces that affect them" (p. 13). Second, he focused on equity: "a dedication to fairness, a desire to consider various interests and treat all with some measure of equality" (p. 13). Leopold's call for an ethic for water management is a continuum of the land ethic promoted by his famed conservationist father, Aldo Leopold, and would lay the groundwork for thinking on this topic in the coming decades.⁸

Effects on Indigenous Communities

The need for a water ethic is globally important, but it is particularly urgent for indigenous communities. Settler expansion, fixed political boundaries, and subsequent colonial framings of land and water ownership have affected indigenous communities throughout the world and have led to severe environmental and social justice disparities.⁹ The ability of indigenous communities to care for and protect their land has been greatly affected by decades and centuries of the reduction of their traditional territories to small fractions of the original size and the limitation of their access to waterways. This reduction also hinders access to critically important “first foods”—the traditional foods of indigenous peoples—such as salmon in the Pacific Northwest and wild rice in the Great Lakes region of North America. The disruption of first foods is linked to declines in both physical and spiritual wellness. Physically, the inability to eat traditional foods of the region has led to a range of health-related issues, such as diabetes and heart disease. Spiritually, for indigenous communities that rely on fishing for their livelihood, for example, declining water quality, changing water temperature, reduced fish habitat, and increased pollution not only have an impact on community health but also affect the ability to participate in culturally important harvesting. For coastal communities, sea-level rise associated with global climate change is also having immediate and visible effects as coastal erosion and the increased salinization of fresh water are changing local environments. Longer-term effects include the projected loss of landmass in coastal and island communities.¹⁰ The first climate refugees have already made their plea to the United Nations, calling for greater attention to the impacts of sea-level rise on indigenous communities in the Pacific Islands.¹¹ As sea levels continue to rise, climate refugees will be forced to relocate, with little legal, economic, or social infrastructure in place to deal with this issue. With an estimated 10 percent of the world’s population living in places that are less than ten meters above sea level, this humanitarian crisis will have far-reaching and long-term consequences.¹²

Not surprisingly, these environmental stressors are having immediate impacts on mental health as well. Such stressors are not limited to simple uneasiness about environmental change. In some cases, community members are forced to make difficult decisions (which many consider “false choices”) of either eating contaminated foods (such as highly toxic fish) or not fulfilling cultural obligations of eating sacred foods.¹³ In addition, human-induced environmental change has greatly compromised the health of ecosystems necessary to support and sustain

subsistence economies. As noted above, in the Pacific Northwest of North America, for example, the wild populations of culturally important species, such as salmon, are facing extinction; shellfish beds are closed due to upstream pollutants associated with intensive agricultural practices; and the symbiotic natural cycles of plants and animals are significantly out of sync. This changing environment poses distinct threats to the ability of indigenous peoples to self-sustain and is a direct violation of their treaty rights. In many tribes and First Nations throughout North America, leaders were forced to give up the majority of their land under the guise that their communities would continue to have access to critically important fishing and hunting areas through what is called “Usual and Accustomed” (U and A) areas. For example, though the 1855 Treaty of Point Elliott guaranteed the rights of tribes to continue to practice their inherent rights to harvest in their U and A areas, changing environmental conditions mean that these areas may no longer house the culturally important habitats the treaties sought to protect.

Nonetheless, indigenous communities have shown time and again their ability to assume leadership roles in movements supporting water protection and climate justice.¹⁴ For example, The Lummi Nation continues to take a leading role in habitat protection by fighting off the economic development of critically important ecosystems, which would not only be a violation of treaty rights but would also severely affect the waterways integral to these rich ecosystems. Other indigenous-led water protection movements, such as Idle No More, the Dakota Access Pipeline protests (Standing Rock), and the ShellNO protests (Seattle), have also attracted global support for their leadership and strategic campaigning to raise awareness about environmental and social justice issues.

Although the books under consideration provide some examples of indigenous rights associated with water protection, the theme is largely underdeveloped. Thus, to help move forward with the adoption of a new global water ethic, I suggest that insights from indigenous communities’ more holistic and long-term relationship with water could help define such an ethic. These insights are gleaned from work with indigenous communities throughout North America, particularly those in the Salish Sea and the Great Lakes regions.¹⁵ In particular, a new water ethic could incorporate three precepts: (1) treat water as sacred; (2) consider rights and responsibilities together; and (3) practice hydrophilia (love and know your waterways). I will present each in turn.

Water as Sacred

For many indigenous cultures, the concept of water as sacred, or as a gift from the Creator, dates back thousands of years. In Ziegler and Groenfeldt's edited volume, Eleanor Hayman and her colleagues discuss the intricate relationship that Tlingit and Tagish cultures have with water. The authors' conversations with Tlingit and Tagish elders reveal "a clear and resilient perception of water as a relative, facilitator, connector, educator, and transformer" (p. 218). This worldview, or cosmology of water, is often at odds with dominant hydrologic paradigms, which separate people from the environment. Central to this worldview of water as sacred is the reality that indigenous cultures emerge from and have been shaped by a specific place. The deep, sustained connection to specific waterways and geographies influences governance structures, laws, practices, and ceremonies that are appropriate for each specific place.

In the Pacific Northwest, for example, Coast Salish communities engage in intricate ceremonies every year to honor the salmon and thank them for their return. This practice is also intertwined with the recognition, more generally, that water is valued and understood in the context of a reciprocal relationship. The deep connection to water is more complex and nuanced than simply understanding it as a provider of livelihood. As Alley and Alley note, these qualities are also found in societal movements around the world (p. 25). For example, the highly acclaimed Groundwater Recharge Movement in India was inspired by the principles of self-reflection that are defined through the Hindu movement *Swadhyaya Pariwar*. These principles of self-reflection or self-study provide guidance for watershed groups to think carefully about the impacts that both policies and community actions will have on the areas they seek to protect. Linking these principles of accountability and self-reflection more centrally into governance models could help advance a new water ethic.

Modern governance structures are largely designed without this deep connection to place. Instead, these structures focus solely on the utility of a resource for specific means: drinking water, sanitation, agriculture, and industry. This is a very different starting point, and these disparate approaches are difficult to reconcile. However, by starting to move away from viewing water solely as a utility or a resource and instead seeing it as a sacred life-giving force, we can begin to push forward a new global water ethic.

Connecting Rights with Responsibilities

In this new ethic, rights and responsibilities are paired, not isolated. That is, one's right to water is linked to one's responsibility to sustain and care for it. For many indigenous cultures, governance models are grounded in this philosophy.¹⁶ However, in the highly fragmented contemporary governance structures, different agencies hold different responsibilities—many of which are not only asynchronous but also in direct competition with each other. For example, the agencies in charge of ecosystem protection, such as state-level departments of ecology, are continuously at odds with county agencies, whose purview it is to promote and grant permits for economic development. Often, these respective agencies are not structured to articulate with one another, and must compete for scarce tax dollars to fund their initiatives. Having a system that connects more explicitly the rights of peoples' access to water and the associated responsibilities for protection would be an interesting new approach. Indigenous governance structures are reinforced through cultural practices and teachings and are born from place. That is, the practices and governance approaches along the Pacific Northwest are naturally different from those that come from desert environments. Drawing on place-based governance models that are linked to hydraulic systems would be an important contribution, and restructuring agencies to think basin-wide and long-term would represent a shift toward this global water ethic. These changes, of course, would be predicated on (and enhanced by) a deep care or love for one's waterways.

Hydrophilia

Hydrophilia equates to a love of one's waterway(s). As people move away from their homelands or hometowns there is a growing disconnect between individuals and their environment. Water governance literature often neglects the impact of increased global mobility and the associated settler mentality. The knowledge and love of place, sometimes referred to as biophilia, can be an antidote to the settler mentality, and hydrophilia is a corollary of this. Moreover, it builds on the notion of water as sacred, and is a key aspect of building a global water ethic. To know one's place is to love it. In the end, the ability of individuals to take stock of their environment, to be cognizant of the waterways that they rely on, and to align their individual choices to reflect values that protect and care for their sacred waterways is a critically important shift in outlook. This realignment of governance models toward value-based management would, of course,

require that basic human needs are met and that the environmental costs of economic growth are not externalized onto vulnerable populations.

CONCLUSION

The creation of a new water ethic will be fundamental to addressing the world's mounting global water crisis. Each of the three poignant and timely books under consideration provides important examples of how to help govern our water supply. However, as each of the authors of these works indicates, the crisis is so all-encompassing that we all have to address the issue, and we all have to be part of the solution. Learning from indigenous communities will provide an important road map to developing and fostering a new water ethic. Having this water ethic promote equity and justice for all human and nonhuman beings is an aspirational and much-needed approach.

NOTES

- ¹ Asit K. Biswas and Cecilia Tortajada, "Assessing Global Water Megatrends," in Asit K. Biswas, Cecilia Tortajada, and Philippe Rohner, eds., *Assessing Global Water Megatrends* (Singapore: Springer Nature, 2018), pp. 1–26.
- ² Ken Conca, *Governing Water: Contentious Transnational Politics and Global Institution Building* (Cambridge, Mass.: MIT Press, 2006), p. 114.
- ³ Lyla Mehta and Synne Movik, eds., *Shit Matters: The Potential of Community-Led Total Sanitation* (Warwickshire, U.K.: Practical Action Publishing, 2011).
- ⁴ Ibid.
- ⁵ Karen Bakker, *Privatizing Water: Governance Failure and the World's Urban Water Crisis* (Ithaca, N.Y.: Cornell University Press, 2010); Jessica Budds and Jamie Linton, "The Hydrosocial Cycle: Defining and Mobilizing a Relational-Dialectical Approach to Water," *Geoforum* 57 (2014), p. 170–180. Leila M. Harris and Samer Alatout, "Negotiating Hydro-Scales, Forging States: Comparison of the Upper Tigris/Euphrates and Jordan River Basins," *Political Geography* 29, no. 3 (2010), pp. 148–56; Erik Swyngedouw, "The Political Economy and Political Ecology of the Hydro-Social Cycle," *Journal of Contemporary Water Research and Education* 142, no. 1 (2009), pp. 56–60; and Jamie Linton, *What Is Water? The History of a Modern Abstraction* (Vancouver: University of British Columbia Press, 2010).
- ⁶ Jessica Budds, "Contested H₂O: Science, Policy and Politics in Water Resources Management in Chile," *Geoforum* 40, no. 3 (2009), pp. 418–30; and Jessica Budds and Leonith Hinojosa, "Restructuring and Rescaling Water Governance in Mining Contexts: The Co-Production of Waterscapes in Peru," *Water Alternatives* 5, no. 1 (2012), pp. 119–37.
- ⁷ Emma Norman, Christina Cook, and Alice Cohen, eds., *Negotiating Water Governance: Why the Politics of Scale Matter* (Farnham, Surrey, U.K.: Ashgate, 2015).
- ⁸ See also Luna Leopold, "Ethos, Equity, and the Water Resource: The 1990 Abel Wolman Distinguished Lecture," *Environment: Science and Policy for Sustainable Development* 32, no. 2 (1990), pp. 16–42.
- ⁹ Kyle Whyte, "Is It Colonial Déjà Vu? Indigenous Peoples and Climate Injustice," in Joni Adamson and Michael Davis, eds., *Humanities for the Environment: Integrating Knowledge, Forging New Constellations of Practice* (Abingdon, U.K.: Routledge Earthscan, 2016), pp. 88–104.
- ¹⁰ Swinomish Indian Tribal Community, *Swinomish Climate Change Initiative: Impact Assessment Technical Report* (La Conner, Wash.: Office of Planning and Community Development, 2009).
- ¹¹ United Nations, "Communities of Ocean Action: Implementation of Sustainable Development Goal 14," June 5–9, 2017, oceanconference.un.org/coa.
- ¹² Kimberly Curtis, "Climate Refugees, Explained," *UN Dispatch*, April 24, 2017.
- ¹³ On the notion of false choices, see Valoree Gagnon, Hugh Gorman, and Emma Norman, *Eliminating the Need for Fish Advisories in the Great Lakes Region: A Policy Brief* (Houghton, Mich.: Great Lakes Research Center, Michigan Technological University, 2018); and Jamie Donatuto, Larry Campbell,

and Robin Gregory, "Developing Responsive Indicators of Indigenous Community Health," *International Journal of Environmental Research and Public Health* 13, no. 9 (2016).

¹⁴ Emma S. Norman, "Standing Up for Inherent Rights: The Role of Indigenous-Led Activism in Protecting Sacred Waters and Ways of Life," *Society & Natural Resources* 30, no. 4 (2017), pp. 537–53; Winona LaDuke, *All Our Relations: Native Struggles for Land and Life* (Chicago, Ill.: Haymarket Books, 2015); and Whyte, "Is it Colonial Déjà Vu?"

¹⁵ Norman, "Standing Up for Inherent Rights."

¹⁶ Emma S. Norman, *Governing Transboundary Waters: Canada, the United States, and Indigenous Communities* (Abingdon, U.K.: Routledge Earthscan, 2015).

Abstract: This review essay examines three important new contributions to the water governance literature, which provide important overviews of the changing water governance structures over time, and advance the call for a new water ethic. Furthering this work, I suggest that the need for a water ethic is globally important, but it is particularly urgent for indigenous communities. Settler expansion, fixed political boundaries, and subsequent colonial framings of land and water ownership have affected indigenous communities throughout the world and have led to severe environmental and social justice disparities. Although the books under consideration provide examples of indigenous rights associated with water protection, the theme is largely underdeveloped. Thus, I suggest that insights from indigenous communities' more holistic and long-term relationship with water could help define and move forward the adoption of a new global water ethic. These insights are gleaned from work with indigenous communities throughout North America, particularly those in the Salish Sea and the Great Lakes regions. A new water ethic could incorporate three precepts: (1) treat water as sacred; (2) consider rights and responsibilities together; and (3) practice hydrophilia (love and know your waterways).

Keywords: water governance, global water ethics, environmental ethics, indigenous communities, social justice