Introduction

RE-IMAGINING INLAND WATERSCAPES:

Insights on integrated Nature, Society, and Culture

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The International Conference on Inland Waterscapes: Nature, Society, and Culture in Hydrography (Udine, May 2024) catalysed interdisciplinary dialogue on the socio-cultural, ecological, and political dimensions of rivers, canals, and lakes. The International Conference took place from 22nd to 25th May 2024 and brought together scholars, policymakers, and practitioners to explore the multifaceted roles of inland waterscapes. It was organised by the University of Udine, Ca' Foscari University of Venice, the River Cities Network and *Shima*.

This special issue emerges from that convergence, interrogating water as a hybrid entity, simultaneously natural and cultural, shaped by human and more-than-human agencies. Amidst climate crises, industrial heritage, intangible memories, resource inequality, and contested governance, the contributions reject reductionist frameworks, instead embracing intersectional, pluralistic approaches to water management. The articles collectively argue for a reimagining of waterscapes that centres justice, inclusivity, and the dismantling of power asymmetries. By bridging diverse knowledges, scientific, artistic, and ancestral, this issue advances transformative pathways for equitable socio-ecological futures.

Water as an Intersectional Resource

Water is arguably the most intersectional and interdisciplinary of all natural resources, transcending its biophysical materiality to encompass social, cultural, political, and economic dimensions. It is deeply embedded in technologies, laws, languages, customs, histories, infrastructure and more, shaping diverse human-water relationships. Its materiality intertwines with political histories, emotions, and worldviews, forming complex 'waterscapes' (Swyngedouw, 1999). Addressing 'super wicked' problems such as climate change (Levin et al., 2012) thus requires an interdisciplinary approach that considers its technical, emotional, and political dimensions.

However, environmental degradation is often framed as requiring limited technological fixes. This overlooks the deeply entrenched political, cultural, and economic processes driving water crises (Swyngedouw, 2004). Diverse perceptions of landscapes, shaped by values, beliefs, and livelihoods, further complicate water management (Lee & Kendal, 2018, p. 121). Addressing these concerns, through an Interuniversity Research Group Association, in this issue, Di Giacomo et al. (2025) unite scholars from diverse disciplines to explore water resources through immersive, inclusive, and implementable tourism experiences. This is because water management must account for power relations, cultural interpretations, and

symbolic orders, as well as material realities (Mehring et al., 2021, p. 83). The domination over water resources cannot be understood through a single axis of power. Rather, it involves intersecting social relationships and subject formations (Sultana 2020). Tackling these concerns of power, in this issue, Venturini and Di Quarto (2025) analysis of River Contracts (RCs) in Lombardia and Veneto reveals unresolved power dynamics and economic interests, as local communities are often excluded from decision-making, undermining the socio-cultural values of water bodies. In contrast, River Contracts in Italy are analysed by Brusarosco (2025) as potential grassroots water justice movements, revealing gaps and transformative possibilities through political ecology. A holistic understanding of water must bridge global economies and local interests, acknowledging the fluidity of values and their influence on history and interpretations (Norgaard, 1988). Investigating such fluidity, in this issue, Rodríguez (2025) examines the early modern conceptualisation of the Basin of Mexico, linking it to water management and hydropolitics, and compares it with Venice, highlighting their shared water management strategies and the shift in hydropolitical dynamics in Mexico from the 17th century onward. Inclusive and sustainable water management can only be achieved by embracing the complexity of human-nature relations, integrating diverse knowledges, and fostering multiple environmental imaginaries, including through visual methods—themes central to this special issue on inland waterways.

Bridging Divides: Kinship and the Interconnectedness of Human-Nature Worlds

Human-nature relationships and kinship challenge the dichotomy separating humans from the environment, emphasising interconnectedness instead. Social inequalities such as racism, classism, sexism, and environmental inequalities, such as water and land degradation, are deeply intertwined. In other words, the self is not isolated but expands into a nature-culture continuum, shaped through encounters with both human and more-than-human entities across time and space (Yaka, 2018, 2020). This forms an intrinsic relationship between ecological and social spheres (Gudynas, 2011). This co-evolution of nature and society creates diverse socio-ecological relations, or 'socionature', where both act as objects and subjects (Gabriel 2014). These hybrid relationships, termed 'cyborgs' or 'quasi-objects' (Kaika, 2005, p. 24), encompass historical, ideological, and cultural processes. Treating them as separate phenomena results in single-axis approaches that fail to capture the complexity of lived experiences (Lloro-Bidart & Finewood, 2018). Turner (2025), in the issue, through the workers' visions for Venice's MOSE project, highlights the intertwined social and natural connections, advocating for both lagoon stability and sustainable livelihoods in the face of climate change.

Market-based solutions often reshape economies, landscapes, and conservation policies, while risking perpetuating inequities. A systemic rethinking that aligns pro-environmental action with social change movements could pave the way for a more just and sustainable environmental utopia. In the issue, Underhill et al. (2025) offer an alternative to economic crises and inequities focusing on boat-dwelling on inland waterways in England and Wales, fostering lifestyles centred on freedom, solidarity, and responsible consumption while highlighting the precarity and diversity of life afloat as a contested yet vital response to urban and social challenges. Similarly, Iob and Villa (2025) explore the collective domains in Italy's Alpine regions resisting capitalist water exploitation through legal battles to reclaim custodianship of this vital resource, challenging extractive practices that impoverish both ecosystems and local communities. By integrating intersectional perspectives and fostering inclusive governance, we can transform water systems to ensure social inclusion and ecological integrity.

Therefore, to address 'super wicked' problems, we must expand our understanding of human-nature relationships, embracing plural perspectives. Many Indigenous and non-Western cultures reject the human-nature dichotomy, instead viewing life as interconnected webs of kinship, reciprocity, and care. Concepts like Mother Earth or the more-than-human world reflect a deep respect for natural entities, rivers, forests, sacred sites, and human-more-than-human kinship systems (Schaafsma et al., 2023, p. 5). In this issue, De Francesco (2025) explores how the Xingu River shapes Amazonian riverine communities' lives, knowledge, and deep connections to nature, illustrating how traditional ecological practices sustain their resilience against ecological degradation and climate change. Similarly, Wilson (2025) emphasises how the Odra River disaster underscores the inseparable nature-culture connection, with initiatives like Osoba Odra advocating for the river's rights and personhood. By integrating these perspectives, we can develop socio-ecologically just policies that foster alliances between social and environmental actors, creating inclusive opportunities for sustainable solutions. Recognising these diverse worldviews is essential for addressing socio-ecological challenges holistically.

Politically Charged Knowledges and Imaginaries

Nature is produced through politically charged knowledges, imaginaries, and discourses, shaped by power dynamics, authority, and culturally embedded ideas. These processes are deeply influenced by stakeholder interests and relations, reflecting the intersection of social and ecological systems (Turnhout, 2018). In this issue, Fernandes (2025) investigates how knowledge embedded in Madeira's levadas, irrigation canals, shapes cultural memory, social relations, and place-making through ethnographic research. Therefore, decisions about nature involve multiple claims, identities, values, and emotions. However, erasing this deep multiplicity, linear Western science often dominates environmental scholarship and policy, generalising definitions of biodiversity and ecosystems while overlooking diverse worldviews, such as Indigenous and local community (IPLC) knowledge systems, which emphasise kinship, reciprocity, and cultural values (Schaafsma et al., 2023). This exclusion marginalises alternative epistemologies and reinforces power imbalances, as the authority to define and manage the environment stays with privileged actors (Turnhout, 2018).

As a result, socio-ecological justice demands a shift from top-down, technocentric approaches to pluralistic, decentralised models that recognise the heterogeneity of knowledge systems. This includes valuing IPLC perspectives, which offer critical insights into biodiversity and sustainability. A transdisciplinary co-creation of knowledge, involving multiple actors, is essential to address environmental injustices and historical responsibilities. Hikuroa et al (2025), in this issue, through the 'Let the Rivers Speak' project, integrate Māori ancestral knowledge, arts, and Earth sciences, offering transdisciplinary perspectives to foster collective, more-than-human approaches to river stewardship and well-being. By embracing diverse worldviews and situated cultural practices, we can explore alternative frameworks, reduce vulnerabilities, and foster resilience. This approach acknowledges the interconnectedness of socio-economic, political, cultural, and environmental dimensions, creating space for inclusive, just, and sustainable imaginaries.

Moreover, environmental imaginaries shape how nature is envisioned and transformed, guiding material changes and policy designs (Gabriel, 2014). These imaginaries are both descriptive and prescriptive, reflecting not only how nature is, but also how it ought to be, often marginalising certain groups while privileging others (Zimmer et al., 2020, p. 228). Dominant imaginaries, often rooted in elite perspectives, are created to naturalise power

dynamics and reinforce the nature/culture dichotomy, erasing alternative ways of being and knowing. Pluralism in imaginaries, however, creates space for diverse voices, enabling a more nuanced understanding of socio-ecological transformations and fostering alternative place-based visions (Escobar, 2008). In other words, recognising the plurality of values, beliefs, and attitudes is crucial for meaningful engagement and sustainable governance (Langemeyera & Connolly, 2020). Displaying such plurality, in this issue, Sleeper & Boonin (2025) reimagine Venice as Neo-Venezia through the Japanese manga series *Aria*, set on a terraformed Mars, blending solarpunk sustainability (a literary and cultural movement) and global cultural memories to inspire utopian imaginaries for addressing climate change through mediatised waterscapes. Similarly, Donetch (2025) explores how the channelling of Santiago's Mapocho River transformed it into a heterotopic space, reflecting shifting urban imaginaries that redefined its role from a simple waterway to a symbolic border deeply embedded in the city's socio-spatial fabric. Therefore, embracing diverse knowledge systems and environmental imaginaries is essential for fostering inclusive, just, and sustainable socio-ecological transformations, as it allows for the recognition and integration of multiple perspectives, values, and practices in environmental governance.

Exploring Interior Aquapelagality

Conceptualising socio-ecological concerns, Hayward and Visentin (2025) investigate the concept of interior aquapelagality, exploring the dynamic relationship between water, landscape, and human society in inland regions, offering a framework to understand how liquid and material elements shape social functions and cultural practices over time. In response, engaging with 'Interior Aquapelagos', Thomas (2025) analyses the fluid dialogue as hydro-methodology by studying how maps and art shape our understanding of rivers and oceans. Moreover, Rossetto (2025) responds by examining how cartographic representations of water, from historical maps to modern GIS, can be 'enlivened' through performative readings that reveal waterways as dynamic, volumetric spaces rather than static surfaces. Kaaristo (2025) explores the concept by examining the historical and contemporary socio-natural interactions within the UK's canal systems and finds that they significantly influence urban identity, heritage narratives, and regeneration strategies. Suwa (2025) extends the concept of interior aquapelagality by examining the visible and invisible aspects of water and earth interactions in the Japanese archipelago and finds that these interactions shape cultural, spiritual, and material landscapes. The editors of the journal would welcome further contributions to debates around interior aquapelagality.

The land-water nexus highlights the interconnectedness of resource management, challenging traditional siloed approaches. Integrated Land and Water Resources Management (ILWRM) emphasises coordinated planning across sectors and scales, addressing 'super wicked' challenges like food security, climate change, and cultural sustainability. Indigenous land rights play a critical role in this framework, ensuring the preservation of cultural heritage and traditional knowledges while promoting sustainable and inclusive governance (Durán-Díaz, 2023). Addressing these integrated challenges, Scaini and Scaini (2025) in this issue explore how land use changes in the Tagliamento River basin highlight the need for ecosystem-based planning, balancing flood risk management and river conservation by preserving natural regulatory functions and reactivating fluvial corridors. By breaking boundaries and embracing pluralistic imaginaries, we can move toward more equitable and resilient socio-ecological systems.

Toward Equitable Waterscapes

Water management is deeply intertwined with structural inequalities, power dynamics, and intersecting social injustices. Understanding these 'super wicked' problems requires a nuanced approach that spans sectors and geographies, addressing who has access to and control over water resources (Narayanaswamy et al., 2023). Inequitable distribution of risks and harms extends beyond material scarcity to include political participation, cultural recognition, and ecosystem integrity, highlighting the need for intersectional frameworks that consider race, gender, poverty, and vulnerability, to name a few (Harrington et al., 2023). An anti-oppressive approach is essential to address the multiple dimensions of inequality and power, ensuring that historically overlooked issues are brought to the forefront. This issue reframes water management to more accurately reflect the empirical realities of how inequalities manifest differentially across contexts in the modern neoliberal world.

Visual research methods emerge as useful tools for transcending language to offer rich, multidimensional insights by incorporating sensory elements and fostering deeper, inclusive understandings of human-water relationships (Fantini, 2017). Such an approach is taken up in this issue by Spadaro et al. (2025) through a photographic article proposing geo-photography as an interdisciplinary method to explore the Retrone River's margins, blending geography and photography to challenge anthropocentric views and foster an egalitarian, interspecies understanding of urban riverscapes.

The articles in this special issue collectively underscore that water is never merely a resource but a dynamic nexus of power, culture, and ecology. From the levadas of Madeira to the canals of Venice, the contributions reveal how dominant imaginaries and technocratic solutions often marginalise alternative worldviews, exacerbating inequities. Yet, the cases also illuminate hopeful alternatives: Indigenous stewardship, transdisciplinary collaboration, and visual methods that re-centre sensory and embodied relationships to water. As climate crises intensify, the urgency to democratise water governance through intersectional, place-based, and more-than-human frameworks becomes undeniable. This issue challenges scholars and practitioners to confront the 'super wicked' nature of water insecurity by embracing epistemological pluralism, fostering kinship across species, and reimagining waterscapes as sites of collective resilience. The task ahead is not just interdisciplinary but deeply political.

REFERENCES:

Brusarosco, A. (2025). Inbetween the lines of River Contracts: Analysing a water governance tool through the lens of the Rooted Water Collectives framework. *Shima 19*(1), 59-77.

De Francesco, A. (2025). From ancestral pathways to climate emergency: The centrality of rivers in an Amazonian perspective. *Shima 19*(1), 154-169.

Di Giacomo, M.G.G., De Felice, P. & Labianca, M. (2025). The valourisation and participatory management of water landscapes. *Shima 19*(1), 136-153.

Donetch, I. (2025). Imagining the Mapocho river: Borderlands, heterotopia, and marginality in Santiago's modernisation. *Shima 19*(1), 212-117.

Durán-Díaz, P. (2023). Sustainable land governance for water–energy–food systems: A framework for rural and peri-urban revitalisation. *Land, 12*(10), 1828.

Escobar, A. (2008). *Territories of Difference: place, movements, life, redes.* Duke University Press.

Fantini, E. (2017). Picturing waters: a review of Photovoice and similar participatory visual research on water governance. *Wiley Interdisciplinary Reviews: Water, 4*(5), e1226.

Fernandes, F.C.G.F. (2025). Waterscapes, memory and tourism: Materiality and place-making around Madeira's *levadas. Shima 19*(1), 244-264.

Gabriel, N. (2014). Urban political ecology: Environmental imaginary, governance, and the non-human. *Geography Compass, 8*(1), 38-48.

Gudynas, E. (2011). Buen Vivir: today's tomorrow. *development, 54*(4), 441-447.

Harrington, C., Montana, P., Schmidt, J. J., & Swain, A. (2023). Race, ethnicity, and the case for intersectional water security. *Global Environmental Politics, 23*(2), 1-10.

Hayward, P. & Visentin, F. (2025). Interior Aquapelagos: A proposal for comprehending and conceptualising nature, society and culture in interior waterscapes. *Shima 19*(1), 8-28.

Hikuroa, D., Salmond, A., Brierly, G. & Lythberg, B. (2025). Listening to rivers: Sharing river stories from Aotearoa New Zealand in a European context. *Shima 19*(1), 170-193.

Iob, M & Villa, M. (2025). Water and collective domains: conflicts regarding untitled occupation and exploitation in the territories of life, heritage of future generations. *Shima 19*(1), 92-114.

Kaaristo, M. (2025). Understanding watery infrastructure: The UK's canals as an interior aquapelago? *Shima 19*(1), 5058.

Kaika, M. (2004). *City of flows: Modernity, nature, and the city*. Routledge.

Langemeyer, J., & Connolly, J. J. (2020). Weaving notions of justice into urban ecosystem services research and practice. *Environmental science & policy, 109*, 1-14.

Lee, K.E. & Kendal, D. (2018). Managing biodiversity through social values and preferences. *Urban biodiversity. From research to practice*, 121-133.

Levin, K., Cashore, B., Bernstein, S. & Auld, G. (2012). Overcoming the tragedy of super wicked problems: constraining our future selves to ameliorate global climate change. *Policy sciences, 45*(2), 123-152.

Lloro-Bidart, T. & Finewood, M.H. (2018). Intersectional feminism for the environmental studies and sciences: Looking inward and outward. *Journal of Environmental Studies and Sciences, 8*, 142-151.

Narayanaswamy, L., Ferritto, R., Hillesland, M. et al. (2023) Why a feminist ethics of care and socio-ecological justice lens matter for global, interdisciplinary research on water security. *Frontiers in Human Dynamics. 5*,1212188.

Norgaard, R.B. (1989). The case for methodological pluralism. *Ecological economics, 1*(1), 37-57.

Rodríguez, O. (2025). The watershed of Mexico in early modernity: crossed perspectives and comparative historical hydrology. *Shima, 19*(1), 194-211.

Rossetto, T. (2025). Surfacing cartographies: Encountering maps at the intersection of carto-spheres and water-spheres. *Shima 19*(1), 35-40.

Schaafsma, M., Ahn, S., Castro, A.J. et al. (2023). Whose values count? A review of the nature valuation studies with a focus on justice. *Current Opinion in Environmental Sustainability, 64*, 101350.

Scaini, C. & Scaini, A. (2025) Unravelling the potential of context-based storylines: Towards ecosystem-based land use planning for the Tagliamento River, northeastern Italy. *Shima 19*(1), 115-135.

Sleeper, M. & Boonin, E. (2025). *Il pianeta dell'acqua*: *Aria's* Neo-Venezia as utopian aquapelago. *Shima 19*(1), 317-335.

Spadaro, C. & Rosset, A. (2025). Visible flow: New riverine imaginaries in Vicenza: The Retrone River. *Shima 19*(1), 265-280.

Sultana, F. (2020). Embodied intersectionalities of urban citizenship: Water, infrastructure, and gender in the global south. *Annals of the American Association of Geographers, 110*(5), 1407-1424.

Suwa, J. (2025). Between interior aquapelagos – the visible and the invisible. *Shima 19*(1), 41-19.

Swyngedouw, E. (1999). Modernity and hybridity: nature, regeneracionismo, and the production of the Spanish waterscape, 1890–1930. *Annals of the association of American Geographers, 89*(3), 443-465.

Swyngedouw, E. (2004). *Social power and the urbanization of water: flows of power*. Oxford University Press.

Thomas, T. (2025). Liquid portraits and interior aquapelagos. *Shima 19*(1), 29-34.

Turnhout, E. (2018). The politics of environmental knowledge. *Conservation and Society, 16*(3), 363-371.

Turner, H. (2025). Working on MOSE: climate jobs, lagoon adaptation, and future maintenance in Venice. *Shima 19*(1), 300-316.

Underhill, H., Bowles, B., Causevic, S. & Fallon, J. (2025*).* Aboard boats on the inland waterways of England and Wales: Three vignettes from London and Alvechurch, Worcestershire. *Shima 19*(1), 282-199.

Venturini, F. & Di Quarto, F. (2025). Navigating river contracts: a process for empowering local communities or a tool for the depoliticisation of nature? The case of Lombardy and Veneto, Italy. *Shima 19*(1), 78-91.

Wilson, T.L. (2025). A haunted river: Histories and spectres of the Odra. *Shima 19*(1), 228-243.

Yaka, Ö. (2019). Rethinking justice: Struggles for environmental commons and the notion of socio-ecological justice. *Antipode, 51*(1), 353-372.

Yaka, Ö. (2020). Justice as relationality: socio-ecological justice in the context of anti-hydropower movements in Turkey. *DIE ERDE–Journal of the Geographical Society of Berlin, 151*(2-3), 167-180.

Zimmer, A., Véron, R. & Cornea, N.L. (2020). Urban ponds, environmental imaginaries and (un) commoning: An urban political ecology of the pondscape in a small city in Gujarat, India. *Water Alternatives, 13*(2), 225-247.