

From Natural Resource to Subject of Rights: A Thematic Analysis of the Evolution of the Legal Protection of Rivers

Carlos Alberto Gómez Cano¹, Libardo Ramón Polania², Verenice Sánchez Castillo³

Abstract

The objective was to analyze the legal, theoretical, and ontological transformations present in the scientific literature on river protection between 2018 and 2023. A critical narrative review with qualitative thematic analysis was conducted. Based on two Scopus searches, 966 unique records were integrated, and a final corpus of 17 articles was purposively selected for their relevance, conceptual diversity, and explanatory power. The analysis identified four interdependent dimensions: the expansion of the river's legal status, the incorporation of relational and biocultural foundations, the institutionalization of representation mechanisms, and the persistence of implementation gaps. Recognizing rivers as subjects of rights did not replace their treatment as resources or public goods; instead, it gave rise to hybrid legal configurations. The effectiveness of these innovations depended on the clarity of obligations, the legitimacy and autonomy of guardians, substantive community participation, and the institutional capacity to transform the material causes of degradation. Riverine legal personhood holds greater potential when it integrates status, relational foundations, representation, and implementation. Isolated declarations increase visibility and access to justice but prove insufficient to guarantee effective ecological protection.

Keywords: River; Environmental Legislation, Water Law, Indigenous Population, Environmental Conservation.

Introduction

Rivers are dynamic ecological systems that integrate hydrological, geomorphological, and biological processes essential for biodiversity conservation and the sustenance of numerous human activities. Beyond supplying water, food, and energy, they connect territories, transport nutrients and sediments, and maintain social and cultural relationships historically forged around their channels. However, flow regulation, intensive water extraction, pollution, habitat alteration, and infrastructure construction have profoundly modified their functioning. These pressures do not act in isolation; they often accumulate at the river-basin scale, causing simultaneous changes in water quality, connectivity, biological diversity, and ecological processes (Best, 2019; Grill et al., 2019; Reid et al., 2019; Sabater et al., 2018).

The persistence of this degradation has called into question the adequacy of conventional responses. Water management and environmental protection policies have made strides in controlling discharges, restoring habitats, regulating resource use, and incorporating environmental flows; nevertheless, freshwater biodiversity remains exposed to interdependent threats and often fragmented institutional frameworks (Martínez Castillo et al., 2024). Ecological literature indicates that the recovery of these systems requires coordinated measures addressing flows, water quality, connectivity, resource exploitation, invasive species, and habitat conservation, rather than isolated interventions targeting individual pressures (Albert et al., 2021; Ripoll Rivaldo, 2023; Tickner et al., 2020). Even in regions with well-established environmental regulations, improvements observed in previous decades have slowed due to the continued presence of dams, urban and agricultural land uses, emerging contaminants, and climate change (Haase et al., 2023; Murgas Téllez et al., 2023).

From a legal perspective, rivers have traditionally been protected based on their status as public goods, water resources, components of the environment, or ecosystems of collective interest. Under these approaches, conservation often depends on whether the damage can be linked to human interests,

¹ Corporación Unificada Nacional de Educación Superior - CUN, Florencia, Colombia, <https://orcid.org/0000-0003-0425-7201> carlos_gomezca@cun.edu.co .

² Universidad de la Amazonia, Florencia, Colombia, <https://orcid.org/0000-0002-9455-4324> lramon@udla.edu.co

³ Universidad de la Amazonia, Florencia, Colombia, <https://orcid.org/0000-0002-3669-3123> ve.sanchez@udla.edu.co

administrative jurisdictions, or pre-established limits on resource use. Given the limitations of these mechanisms in halting degradation, various legal systems began exploring approaches that recognize nature—or specific ecosystems—as holders of their own legal status. Thus, the rights of nature and environmental legal personhood emerged as attempts to rethink the relationship between legal standing, representation, and protection by allowing non-human entities to be directly considered within legal reasoning (Gonzales Centon et al., 2023; Łaszewska-Hellriegel, 2023; Schimmöller, 2020).

This shift goes beyond merely expanding legal standing to bring cases before the courts. It also raises questions regarding how natural entities are defined, the content of their rights, the identification of their interests, and the obligations of those who interact with them. Academic literature has distinguished between the public and private dimensions of this recognition and examined its potential impact on property rights, the authorization of economic activities, and the liability of private legal entities. From this perspective, granting rights to a river can alter its status vis-à-vis landowners, public authorities, and businesses; however, it requires specifying exactly which powers are recognized, who may exercise them, and how conflicts with other legally protected rights and interests are to be resolved (Burgers, 2022; Hoops, 2022; Jefferson et al., 2023).

The proliferation of these legal frameworks further demonstrates the absence of a uniform model. Some initiatives stemmed from constitutional reforms, while others arose from special legislation, judicial rulings, or local instruments. In certain systems, nature was recognized as a general rights-holder; in others, legal personhood was conferred upon a specific river, forest, or ecosystem. Mechanisms for representation, the relationship with property rights, and the scope of obligations regarding protection and restoration also vary. Analyses conducted in Europe suggest that even legal systems lacking explicit recognition may contain rules, principles, and procedures compatible with certain elements of the rights of nature—though operationalizing them would require revisiting legal categories constructed from a predominantly human-centric perspective (Epstein & Schoukens, 2021; Schimmöller, 2020).

In post-colonial contexts, the discussion takes on added complexity. The legal recognition of rivers has been linked to Indigenous normative systems, territorial ties, and worldviews that do not radically separate communities from other components of the environment. In such instances, categories of legal subjecthood, property, and representation can serve as spaces for interaction between distinct legal orders. However, they may also reduce broader territorial relationships to concepts comprehensible within state law. The possibility of coordinating different regimes of belonging and stewardship therefore depends on institutions capable of recognizing the authority of local actors, rather than merely incorporating cultural references into normative language (Putzer et al., 2022).

The Indian experience likewise illustrates that extending legal personhood to natural entities creates consequences that cannot be resolved through a simple analogy with human beings or corporations. Issues such as the entity's territorial scope, potential liability, the authority of its representatives, and inter-jurisdictional interactions require a specific legal framework. Consequently, the significance of these initiatives depends not merely on the declaration of a new status, but on the coherence between the basis for recognition and the mechanisms designed to make it operational (Jolly & Menon, 2021).

At the international level, environmental protection remains structured primarily around categories such as sovereignty, resource utilization, conservation, and cooperation between states. Rights of nature remain concentrated within national and subnational contexts, although certain developments linked to Indigenous peoples, biodiversity, and duties of care have begun to introduce more relational concepts. This gap between domestic innovations and international law demonstrates that the debate is not limited to recognizing new rights-holders; rather, it extends to the fundamental ways in which the law defines nature and organizes human responsibilities toward it (Gilbert, 2023).

Taken together, recent scholarship forms an interdisciplinary field where river ecology, environmental law, personality theory, legal pluralism, Indigenous studies, and institutional analysis converge. However, the diversity of approaches makes it difficult to determine the relationship between protecting a river as a resource or ecosystem and treating it as a legal subject. Some of the literature focuses on the conceptual

justification for these rights, while other works examine concrete normative pathways, property issues, representation, or institutional consequences. This fragmentation necessitates an interpretive approach that connects the various levels of the debate, allowing for an understanding of its categories, foundations, and central issues without assuming that the emergence of legal personhood has superseded earlier forms of protection.

Therefore, this study aimed to analyze the legal, theoretical, and ontological transformations found in scientific literature published between 2018 and 2023 regarding river protection. Through a critical narrative review and qualitative thematic analysis, the study examined how selected texts conceptualized the river, the grounds used to justify its protection or legal status, the proposed mechanisms of representation, and the debates raised regarding the relationship between state law, communities, and river entities. The aim was to provide an integrated perspective on a field that has evolved from the regulation of resource use and conservation toward legal frameworks that question the very position of the river within the normative order.

Methodology

A critical narrative review with an interpretive orientation was conducted, complemented by a qualitative thematic analysis. This design aimed to understand the legal, theoretical, and ontological transformations found in the literature on river protection, rather than to measure scientific productivity or establish generalizable trends. Consequently, the structured search in Scopus served as a method for delimiting and selecting documents, rather than as the basis for an exhaustive bibliometric analysis.

The transition of the river from a natural resource or object of protection to a recognized subject of rights was not viewed as a linear or completed process. Instead, it was examined as a dynamic relationship between paradigms that could coexist, complement one another, or come into conflict: instrumental protection, ecosystem conservation, environmental governance, rights of nature, legal personhood, and biocultural or ontological perspectives. This framing drew upon the conceptual distinction established during the construction of the master corpus.

The starting point was a master corpus derived from two searches conducted in Scopus covering the 2018–2023 period. The first search string focused on legal personhood, river rights, and the rights of nature, while the second retrieved contextual literature regarding the protection, regulation, and governance of rivers and river basins. Integration, standardization, and deduplication yielded 966 unique records, of which 501 were deemed potentially relevant following a screening of titles and abstracts.

A purposive sample of 18 articles was compiled from the documents identified as Open Access. The selection process prioritized conceptual variation, thematic relevance, and explanatory power rather than statistical representativeness. Priority was given to works that allowed for the examination of diverse legal foundations, territorial experiences, normative traditions, and anthropological perspectives related to the protection and legal recognition of rivers.

The review included full-text articles published between 2018 and 2023 in which the river, river basin, or fluvial ecosystem constituted a substantive object of analysis. Furthermore, the documents had to address a legal, political, institutional, anthropological, or ontological dimension and contribute directly to the study's guiding questions. The selection also sought diversity in terms of jurisdictions, river-related cases, disciplinary approaches, and research types.

Works were excluded if they mentioned rivers only incidentally; used the term "Rio" solely in reference to the Rio Declaration, Rio 92, or international conferences; conducted exclusively hydrological, chemical, or engineering analyses; examined water usage rights without a substantive connection to the river; or reiterated arguments already sufficiently represented in other texts within the sample. A full reading of the texts allowed for the removal of articles lacking conceptual depth or offering limited contributions to the research problem, replacing them with more relevant documents.

The selected articles were organized into an analytical matrix that recorded the bibliographic reference, study type, country or jurisdiction, river or basin examined, the conception attributed to the river, the legal basis, the recognition mechanism, the form of representation or guardianship, the participation of indigenous or local communities, the biocultural perspective, evidence regarding implementation, key tensions, and each document's contribution to the research questions.

The analysis employed a hybrid thematic strategy, combining deductive categories derived from the research problem with emergent categories identified during the reading process. The initial thematic axes were: a) the river as a resource or protected object; b) ecosystem protection and governance; c) rights of nature; d) the river as a legal subject; e) representation and guardianship; f) indigenous, biocultural, and ontological perspectives; and g) the efficacy, limitations, and contradictions of legal recognition.

The procedure involved familiarization with the texts, initial coding, grouping of codes, construction and review of themes, definition of their scope, and the development of an interpretive synthesis. Themes were established not merely based on frequency, but on their capacity to explain the continuities, ruptures, and tensions among the various ways of conceiving and legally protecting rivers.

The 2018–2023 timeframe served as an interpretive framework for identifying shifts in argumentation—specifically, the transition from establishing legal personhood to debating representation, implementation, efficacy, and compliance. However, given the purposive and limited nature of the sample, these changes were interpreted as transformations identified within the analyzed texts rather than as trends representative of the entire body of scientific output.

The study's rigor was grounded in procedural transparency, disciplinary triangulation, and the traceability of analytical decisions. Before examining the full sample, the three researchers applied the coding matrix to a pilot group of articles to refine operational definitions, adjust categories, and discuss interpretative differences.

Subsequently, each document was read and coded by at least two team members. Discrepancies were resolved through reasoned deliberation; where they persisted, they were submitted to the third researcher for assessment. This procedure enabled the cross-referencing of legal-doctrinal interpretations with the territorial, cultural, political, and ontological dimensions present in the articles.

The team's background in Law and Anthropology facilitated the triangulation of perspectives. Legal analysis focused on normative foundations, recognition mechanisms, representation, and institutional effects. At the same time, the anthropological reading examined territorialities, cultural relations, ontologies, indigenous knowledge, and more-than-human conceptions linked to the rivers.

Throughout the process, a record was maintained of decisions regarding inclusion, exclusion, and coding, as well as modifications made to categories and emerging themes. Analytical and reflective notes were also produced to acknowledge disciplinary assumptions that might influence interpretation.

Finally, the team actively sought out divergent cases and arguments challenging the efficacy, coherence, applicability, or legitimacy of recognizing rights for rivers. This strategy avoided presenting legal personhood as a necessarily progressive evolution and allowed for an examination of both its transformative potential and its practical and conceptual limitations.

Results

Corpus Characteristics and Research Orientation

The final sample consisted of 17 articles published between 2018 and 2023. The initially planned corpus comprised 18 texts; however, the study by Vega Cardenas and Mestokosh (2022)—which focused on the recognition of the rights of nature in Canada, specifically regarding the Magpie/Mutehekau Shipu River case—was removed prior to coding because the full text was unavailable. This exclusion did not

compromise the intended conceptual diversity, as the sample retained legal, philosophical, anthropological, political, and socio-environmental studies, as well as comparative analyses, narrative reviews, case studies involving interviews, and decolonial-oriented works (Table 1).

Table (1) Sources Included in the Qualitative Analysis

No.	Authorship and year	Title	Journal
1	O'Donnell & Talbot-Jones (2018)	<i>Creating Legal Rights for Rivers: Lessons from Australia, New Zealand, and India</i>	<i>Ecology and Society</i>
2	Cano Pecharroman (2018)	<i>Rights of Nature: Rivers That Can Stand in Court</i>	<i>Resources</i>
3	Knauß (2018)	<i>Conceptualizing Human Stewardship in the Anthropocene: The Rights of Nature in Ecuador, New Zealand and India</i>	<i>Journal of Agricultural and Environmental Ethics</i>
4	Kang (2019)	<i>On the Problem of the Justification of River Rights</i>	<i>Water International</i>
5	Baard (2023)	<i>Are Rights of Nature Manifesto Rights (And Is That a Problem)?</i>	<i>Res Publica</i>
6	Alley (2019)	<i>River Goddesses, Personhood and Rights of Nature: Implications for Spiritual Ecology</i>	<i>Religions</i>
7	Argyrou & Hummels (2019)	<i>Legal Personality and Economic Livelihood of the Whanganui River: A Call for Community Entrepreneurship</i>	<i>Water International</i>
8	Kramm (2020)	<i>When a River Becomes a Person</i>	<i>Journal of Human Development and Capabilities</i>
9	Martuwarra, RiverOfLife et al. (2023)	<i>Martuwarra Fitzroy River Watershed: One Society, One River Law</i>	<i>PLOS Water</i>
10	Macpherson et al. (2020)	<i>Constitutional Law, Ecosystems, and Indigenous Peoples in Colombia: Biocultural Rights and Legal Subjects</i>	<i>Transnational Environmental Law</i>
11	Wesche (2021)	<i>Rights of Nature in Practice: A Case Study on the Impacts of the Colombian Atrato River Decision</i>	<i>Journal of Environmental Law</i>
12	Macpherson et al. (2021)	<i>Where Ordinary Laws Fall Short: "Riverine Rights" and Constitutionalism</i>	<i>Griffith Law Review</i>
13	Berros & Carman (2022)	<i>Los dos caminos del reconocimiento de los derechos de la naturaleza en América Latina</i>	<i>Revista Catalana de Dret Ambiental</i>
14	Richardson & Bustos (2022)	<i>Implementing Nature's Rights in Colombia: The Atrato and Amazon Experiences</i>	<i>Revista Derecho del Estado</i>
15	McClelland (2023)	<i>Rights of Rivers in a Changing Climate</i>	<i>Climate Law</i>
16	Tadaki et al. (2023)	<i>Transforming Freshwater Politics Through Metaphors: Struggles over Ecosystem Health, Legal Personhood, and Invasive Species in Aotearoa New Zealand</i>	<i>People and Nature</i>
17	Blair (2023)	<i>Saving India's Rivers: Ecology, Civil Society, Religion, and Legal Personhood</i>	<i>World Development Sustainability</i>

Eight articles covered the 2018–2020 period, and nine covered 2021–2023. The definition of legal personhood dominated the first period, the normative basis for the rights of nature, and comparisons between early legislative and judicial models. Later works focused more on implementation, representation, environmental and ecological justice, institutional contradictions, and an expanded scope encompassing climate change, decolonial governance, and the analysis of political language. This shift over time was not interpreted as a generalizable evolution of the entire body of scholarship, but rather as an internal

transformation of the corpus: moving from the question of whether rivers could be granted rights to an examination of who represents them, how those rights are realized in practice, and what effects they produce.

The most frequently studied cases were the Whanganui in Aotearoa New Zealand, the Atrato in Colombia, and the Ganges and Yamuna rivers in India. Analyses also covered the Martuwarra/Fitzroy basin in Australia, the Mekong, the Cauca and Tolima rivers, the Colombian Amazon, the Vilcabamba, and constitutional experiences in Ecuador and Bolivia. This concentration of cases enabled a comparison of three primary pathways to recognition: legislation and political-territorial agreements, judicial decisions, and the constitutionalization of the rights of nature.

From The Protected Object to the Relational Subject

The first theme demonstrated that the transition of the river from a natural resource to a recognized subject of rights did not entail the disappearance of the previous paradigm. Models of riverine legal personhood and rights were grafted onto regulatory systems that continued to treat water as a resource, a public good, an energy source, or a component of a river basin. Consequently, the transformation identified was cumulative: the river remained an object of management and protection but simultaneously acquired a legal standing from which impacts upon it could be framed as injuries to an entity with its own interests.

O'Donnell and Talbot-Jones (2018) showed that rights could be embedded in widely varying legal arrangements and driven by economic, cultural, or environmental motivations. In Victoria, Australia, a model linked to environmental water management took shape; in Aotearoa New Zealand, legal personhood for the Whanganui River emerged from a historic agreement with the Whanganui Iwi; and in India, courts turned to personification to respond swiftly to the degradation of the Ganges and Yamuna rivers. Comparative analysis revealed that the flexibility of this instrument did not guarantee equivalent outcomes: legislative solutions were slower but achieved greater institutional depth, whereas judicial decisions could be immediate yet easily suspended or challenged.

Cano Pecharroman (2018) situated this transformation within the broader context of expanded legal standing and access to the courts. However, he distinguished between legal personhood, procedural standing, and the capacity for representation, demonstrating that the recognition of rights did not, in itself, resolve questions regarding their content or the conditions for their enforcement. Knauß (2018), for his part, interpreted the rights of nature as a cross-cultural language capable of transforming planetary interdependence into human obligations of care. In this view, rights functioned as a normative formula justifying protection beyond the river's utility to humans.

Constitutional analyses confirmed that riverine legal personhood was employed to transcend environmental frameworks perceived as inadequate. Macpherson et al. (2021) characterized the cases of the Whanganui, Atrato, Ganges, and Yamuna rivers as small-scale, incomplete, and ad hoc constitutional experiments, yet capable of influencing broader reforms. Berros and Carman (2022) identified two complementary paths in Latin America: the constitutional or legislative incorporation of the rights of nature and the development of ecocentric jurisprudence. In both instances, this innovation altered access to justice, judicial processes, and institutional designs, even while coexisting with norms, property rights, and development policies that remained essentially anthropocentric.

Relational Ontologies, Biocultural Rights and Legal Translation

The second theme revealed that the literature did not reduce this transformation to a mere legal technique. In various texts, legal personhood functioned as a bridge between state law and conceptions in which the river constitutes an ancestor, a deity, a living being, or an indivisible territorial relationship. The main difference compared to conventional environmental protection was that the river's value did not derive solely from the services it provides, but rather from bonds of kinship, reciprocity, cultural continuity, and intergenerational responsibility.

Studies concerning the Whanganui River were particularly illuminating. Argyrou and Hummels (2019) analyzed its well-being as an integration of environmental, cultural, social, and economic dimensions, proposing community activities that would mutually enhance human and non-human capacities. Kramm (2020) noted that while the law recognized the river as a living whole and a spiritual ancestor, it left fundamental concepts—such as health and well-being—undefined. To overcome this limitation, he proposed intercultural standards grounded in Māori knowledge, alongside positive and negative obligations to resolve conflicts between human interests and harm to the river.

The Martuwarra case deepened this conceptual shift. The river emerged as a primary author, an ancestral being, and a source of "First Law," rather than as a passive entity granted a voice by humans. Drawing on an Indigenous methodology of collaborative storytelling, Martuwarra, RiverOfLife et al. (2023) argued that protection required recognizing the legal and epistemological authority of the Yi-Martuwarra peoples, ensuring free, prior, and informed consent, and establishing Earth-centered bioregional governance. The transition, therefore, involved not merely expanding the Western catalog of legal subjects, but acknowledging the pre-existing normative orders and relationships of responsibility that predated state recognition.

In Colombia, the concept of biocultural rights linked ecosystem integrity with the existence of ethnic communities. Macpherson et al. (2020) observed that the Atrato ruling integrated territorial and cultural relationships more consistently, yet they noted that subsequent decisions replicated the "legal subject" formula without addressing Indigenous land tenure, autonomy, and normative systems with equal depth. Their findings demonstrated that invoking non-Western ontologies was insufficient: when recognition was decoupled from participation and collective rights, it could render invisible the very communities that had sustained those relationships.

The Indian experience introduced a different kind of tension. Alley (2019) showed that rulings concerning the Ganges and Yamuna rivers conflated the categories of nature, person, and deity, thereby enabling the convergence of legal, religious, and scientific arguments. However, this semantic creativity failed to generate consensus among devotees or establish a stable platform for activism, while also raising questions regarding religious nationalism. Thus, while legal translation expanded the range of available meanings, it did not guarantee social appropriation or effective protection.

Representation And Guardianship as an Operational Core

The third theme positioned representation at the heart of legal personhood. Guardianship determined who could speak, decide, negotiate, or litigate on behalf of the river, but also who defined its boundaries, its desired State, and legally relevant harms. Baard (2023) demonstrated that legitimate custodianship enabled the transformation of abstract demands into concrete obligations: custodians delineated the entity, combined ecological knowledge with cultural meanings, and required third parties to exercise restraint, undertake restoration, or maintain oversight. At the same time, this dependency undermined claims to universal rights detached from specific communities and places.

The models analyzed ranged from state representatives and fiduciary bodies to bipartite entities and Indigenous councils. In the case of Whanganui, guardianship was embedded within a collaborative system and obligations linked to the agreement between the State and the Māori people (Argyrou & Hummels, 2019; Kramm, 2020). For the Atrato, the integration of government and community guardians fostered dialogue, participation, and broader policies (Wesche, 2021). However, a bipartite composition could also limit the ability to take legal action against state entities that failed to meet their obligations.

Common challenges included a lack of resources, ambiguous mandates, insufficient legal training, a lack of independence, and the undefined nature of riverine well-being. Consequently, guardianship did not emerge merely as a formality following recognition, but rather as the institution that transformed legal personhood into an operational relationship. Its legitimacy hinged on a connection to the territory, the capacity for action, and the substantive participation of communities, rather than simply on a legal designation.

Implementation Gap and Critical Maturation of the Field

The fourth theme revealed a persistent gap between normative innovation and material protection. While rights generated public visibility, new forms of participation, and action plans, available empirical evidence did not attribute sufficient ecological improvements to them during the period studied. In India, the suspension of court rulings, the lack of a roadmap, corruption, and limited coordination between environmental activism and religious mobilization diminished their practical impact (Alley, 2019; Blair, 2023). In Latin America, the expansion of rights coexisted with extractivist policies, territorial conflicts, and violence against environmental defenders (Berros & Carman, 2022).

Studies regarding the Atrato and the Amazon highlighted this gap with greater precision. Wesche (2021) found that the Atrato ruling drove more comprehensive policies and increased community participation but failed to produce verifiable changes in the river's environmental condition during its first four years. Richardson and Bustos (2022) concluded that both the Atrato and Amazon models fell short of their human and ecological justice objectives; nevertheless, the former offered a more promising framework due to its participatory component, whereas the Amazonian implementation actually reproduced injustices against vulnerable groups.

Efficacy depended on conditions extending beyond mere recognition: state capacity, funding, clear jurisdictional mandates, multi-level coordination, monitoring, control of illegal activities, and the transformation of extractive incentives. This conclusion tempered the expectation that legal recognition would be the primary outcome. In contexts of weak governance, rights functioned more as a symbolic impetus and a catalyst for policy reorganization than as an autonomous mechanism for restoration.

Recent scholarship has also broadened the conceptual critique. Kang (2019) challenged absolute moral justifications, proposing instead that rights be understood as procedures for managing conflicts and keeping social alternatives open. Baard (2023) demonstrated that its strength relied on legal frameworks and legitimate custodians, rather than on an automatic analogy with human rights. Tadaki et al. (2023) interpreted legal personhood as an institutionalized metaphor—capable of reorganizing obligations yet also susceptible to unforeseen meanings and appropriations. McClelland (2023) extended the debate to climate change, highlighting tensions between local models, ill-defined duties in emergency situations, and global commitments.

Overall, the thematic structure did not confirm a linear replacement of the "river-as-resource" with the "river-as-subject." Instead, it revealed the coexistence of four interdependent movements: the expansion of legal status, the translation of relational ontologies, the institutionalization of representation, and the confrontation with the material conditions of implementation. Legal subjectivity gained greater substance when it articulated these four dimensions; when reduced to a mere declaration, it retained symbolic and political value but demonstrated limited capacity to transform river degradation.

Discussion

The results confirmed that recognizing rivers as subjects of rights did not automatically replace their treatment as natural resources, public goods, or components of productive systems. Rather, both statuses coexisted, forming hybrid legal arrangements. This interpretation aligns with literature viewing the rights of nature as a transnational norm whose meaning is reconstructed within each political and legal context. Although the cases employ similar terms—legal person, subject of rights, or living entity—their content depends on pre-existing institutions, the conflicts that prompted the recognition, and the power dynamics involved in their implementation (Kauffman & Martin, 2018).

This coexistence necessitates distinguishing between a formal modification of legal personality and a substantive transformation of the relationship between society and nature. Legal personhood may facilitate representation, legal standing, property ownership, or institutional continuity, but it does not, in itself, eliminate the regimes of ownership, use, and authority that shape the river. In Aotearoa New Zealand, for example, legal personhood introduced a new framework for protection and recognition without implying

that the river simply came to "belong to itself" or that state jurisdictions and competing economic interests disappeared (Sanders, 2018).

Critical literature further warns that extending the category of "subject"—traditionally reserved for human beings or corporations—to nature can reproduce the very legal order one seeks to transform. The rights of nature do not exist independently of the processes through which jurists, courts, legislators, and social movements define which entities count as nature, determine their boundaries, and attribute interests to them. Therefore, riverine subjecthood should not be analyzed as a quality discovered by the law, but rather as a legal-political construct capable of challenging anthropocentrism while simultaneously retaining some of its categories (González Vallejo, 2023; Rawson & Mansfield, 2018).

From the perspective of legal personality theory, it is also not essential to demonstrate that a river possesses will, consciousness, or interests equivalent to those of humans. The law can structure legal positions for non-human entities through representatives, duties, and institutional competencies. However, asserting that an entity is a legal person does not automatically determine what rights it holds, how they should be interpreted, or who is authorized to exercise them. This distinction supports one of the study's key findings: the significance of recognition depends less on the label used than on the normative architecture constructed around it (Kurki, 2022).

A second contribution of the findings is demonstrating that fluvial subjectivity cannot be understood solely as a doctrinal innovation. In several instances, recognition was grounded in relationships of kinship, ancestry, spirituality, and territorial belonging that challenge the Western separation between society and nature. This opening aligns with the need to expand environmental policy to include Indigenous ways of producing worlds, knowledge, and relationships, rather than merely incorporating them as cultural data within pre-defined analytical frameworks (Inoue, 2018).

Studies on water governance have also shown that state institutions can render Indigenous narratives invisible when they conceive of rivers primarily as resources shared among states, economic sectors, or administrative units. The exclusion of Indigenous peoples from watershed-related decisions represents not merely a failure of participation, but the imposition of a specific way of understanding territory, sovereignty, and obligations toward water. Consequently, incorporating Indigenous voices requires recognizing territorial rights, decision-making capacity, and autonomous jurisdictions, rather than simply consulting communities after the management model has already been defined (Araque Geney, 2023; Cohen & Norman, 2018).

In this regard, the findings allow for a distinction between legal translation and ontological recognition. The former adapts Indigenous relationships to state categories such as property, legal personhood, representation, or guardianship; the latter entails accepting that such relationships may be grounded in normative orders that do not derive their validity from the State. Literature has noted that legal personhood does not constitute a direct or universal expression of Indigenous philosophies, as it may select certain relational elements while omitting communal obligations, traditional authorities, and broader territorial conceptions (Moreira & Reis Fonseca, 2024; Tănăsescu, 2020).

The international circulation of these legal concepts heightens the risk of simplification. Environmental innovations can spread rapidly across jurisdictions, yet in the process, they are often detached from the historical struggles and political agreements that gave them meaning. The replication of formulas such as "river-as-person" or "nature-as-subject-of-rights" may yield progress. However, it can also lead to the selective appropriation of Indigeneity and institutional models ill-suited to the new context (Affolder, 2019).

Field research has notably challenged the notion that the rights of nature constitute, in and of themselves, a decolonial response. When Indigenous knowledge is used to legitimize a legal innovation, yet communities lack control over its interpretation and implementation, such recognition can end up reproducing the very epistemic hierarchies it claims to transcend. Consequently, transformative potential hinges on linking the protection of the natural entity with self-determination, territory, historical memory, and collective rights (Viaene, 2022).

This perspective also aligns with the development of multispecies justice. Extending the community of justice to include non-human entities requires revisiting liberal concepts of the subject, representation, and harm, while also addressing the colonial, racial, and economic inequalities that shape socio-ecological relationships. Without these connections, advocacy for non-human beings risks becoming detached from the demands of the peoples and groups directly confronting environmental degradation (Celermajer et al., 2021; Fitz-Henry, 2022).

The role of "guardianship" emerged from the findings as the element that transforms an abstract declaration into an institutional relationship. Its function extends beyond merely filing lawsuits; guardians play a part in defining the subject, interpreting its needs, identifying harm, and negotiating between competing interests. Thus, selecting representatives is also a matter of distributing authority over the river.

However, the formal inclusion of communities does not guarantee effective participation. Participatory spaces may open during the drafting of a regulation, only to close later during its implementation, funding, or execution. Likewise, participation can be reduced to mere consultation when substantive decisions remain under the control of state authorities or economic actors. Evaluating guardianship arrangements therefore requires considering who appoints the representatives, the extent of their decision-making power, to whom they are accountable, and what resources they possess to carry out their mandate (Gustafsson & Schilling-Vacaflor, 2022).

This approach clarifies that the legitimacy of representation comprises at least three dimensions. The first is territorial, stemming from the sustained relationship with the river; The second is legal, relating to the powers to intervene, demand information, file lawsuits, and oversee compliance; and the third is material, associated with funding, technical expertise, autonomy, and institutional permanence. A model may be culturally representative yet lack legal instruments; likewise, a state authority may possess powers and resources but lack territorial legitimacy.

The narrative dimension is also part of this dispute. Legal institutions do not merely apply objective facts; rather, they construct narratives regarding what the river is, what threatens it, what constitutes a healthy state, and what future must be protected. While narratives can mobilize support and expand the legal imagination, they can also privilege simplified representations or exclude experiences that do not fit the dominant story. Therefore, the capacity to "speak for the river" must be examined alongside the possibility for diverse communities to participate in constructing its legal meaning (Hilson, 2022).

The gap observed between normative innovation and material protection aligns with research documenting the coexistence of ecocentric rights and extractive economic models. In Bolivia, the incorporation of the rights of Mother Earth was accompanied by transformative rhetoric, yet its implementation was constrained by contradictions between ecological obligations and state development policies. The existence of progressive norms did not necessarily alter production priorities, nor did it lead to the timely establishment of all the bodies envisioned for their enforcement (Villavicencio Calzadilla & Kotzé, 2018).

The Latin American experience thus demonstrates that implementation is a socio-legal issue rather than merely a technical one (Vázquez Vidal & Martínez Prats, 2023). Rights of nature operate within contexts marked by territorial conflicts, dependence on extractive activities, institutional inequality, and disputes over the meaning of *buen vivir* (good living). Under these conditions, recognition may open up new opportunities for mobilization and litigation, yet it may also remain subordinate to political and economic structures that limit its scope (Berros, 2021).

The obstacles identified in the corpus align with empirical studies that locate the primary barriers in anthropocentric paradigms, existing regulatory structures, vested interests, and power asymmetries. From this perspective, the rights of nature function as a boundary object: an idea flexible enough to bring together actors with differing motivations, yet ambiguous enough to allow for incompatible interpretations (Pilon-Summons et al., 2022). This ambivalence helps explain why initial effects are often more clearly observed in legal language, public visibility, and the creation of participatory spaces than in immediate ecological recovery. While ambiguity facilitates coalitions and experimentation, it can complicate the definition of

indicators, duties, responsibilities, and consequences for non-compliance. Therefore, an analysis of effectiveness should not be limited to determining whether a court ruling or law exists, but should instead examine its procedural, institutional, distributive, and ecological outcomes.

The recent expansion of the debate to include climate change, multispecies justice, and planetary governance reflects the field's maturation. Traditional environmental law was built upon sectoral divisions—separating water, biodiversity, climate, and territory—even though biophysical processes operate as interdependent systems. The proposal for an Earth-system law seeks to address this fragmentation through legal frameworks capable of recognizing ecological connections, multiple scales, and planetary boundaries (Kotzé & Kim, 2019).

Rights of nature have also been considered a potential tool for governing spaces that do not easily fit within territorial jurisdictions, such as the oceans. These developments demonstrate that such principles can strengthen ecological integrity, broaden participation, and shift governance from a logic based exclusively on ownership toward one of stewardship responsibilities. At the same time, applying this concept at regional or global scales compounds the challenges of representation, coordination, and the determination of interests (Harden-Davies et al., 2020; Sanabria Martínez, 2022; Sempértegui & Báez, 2024).

International expansion also creates a tension between two languages. The first views nature as an interconnected planetary system; the second conceives of it through situated relationships of kinship, belonging, and responsibility. The United Nations' Harmony with Nature initiative has attempted to articulate both registers, yet this combination risks universalizing systemic categories and undermining the political specificity of kinship relations. Consequently, a global agenda should not reduce local ontologies to interchangeable cultural examples but rather recognize their ties to specific territories, authorities, and struggles (Afanador Cubillos, 2023; Kramm, 2024; Schmidt, 2022).

Taken together, these findings suggest that the robustness of river rights depends on the coherence among four dimensions: legal status, relational foundation, representation architecture, and implementation capacity. Recognition loses substance when one of these elements becomes disconnected from the others. Legal personality without defined obligations retains primarily symbolic value; an ontology invoked without community authority can amount to appropriation; guardianship without resources reduces participation to a mere formality; and a court ruling unaccompanied by institutional transformation is unlikely to alter the material causes of degradation. Therefore, the shift from the river-as-resource to the river-as-subject should not be viewed as an inevitable evolutionary progression. It was a field of experimentation where innovation and continuity, ecocentrism and economic exploitation, Indigenous recognition and state translation coexisted. Its most significant contribution lay not merely in adding new rights-holders, but in bringing to light questions that conventional environmental protection had kept in the background: who can represent the non-human, what relationships give rise to obligations, how is power over territories distributed, and what conditions transform a legal declaration into effective ecological protection?

Conclusions

The legal recognition of rivers does not constitute a linear replacement of the "resource" paradigm, but rather a reconfiguration of the relationships between nature, communities, and the State. Its transformative potential depends on the river's recognized status translating into enforceable obligations, legitimate representation, and sufficient institutional conditions to address the root causes of degradation.

Consequently, the effectiveness of these frameworks should be assessed not merely by the existence of laws or court rulings, but by their ecological, participatory, distributive, and institutional impacts. The most robust models are those that link river protection with the territorial authority of communities, the autonomy of river guardians, and verifiable compliance mechanisms. Without these conditions, such recognition retains symbolic and political significance, yet its material impact remains limited.

References

- Afanador Cubillos, N. (2023). Historia de la producción y sus retos en la era actual. *Región Científica*, 2(1), 202315. <https://doi.org/10.58763/rc202315>
- Affolder, N. (2019). Contagious Environmental Lawmaking. *Journal of Environmental Law*, 31(2), 187–212. <https://doi.org/10.1093/jel/eqz011>
- Albert, J. S., Destouni, G., Duke-Sylvester, S. M., Magurran, A. E., Oberdorff, T., Reis, R. E., Winemiller, K. O., & Ripple, W. J. (2021). Scientists' warning to humanity on the freshwater biodiversity crisis. *Ambio*, 50(1), 85–94. <https://doi.org/10.1007/s13280-020-01318-8>
- Alley, K. D. (2019). River Goddesses, Personhood and Rights of Nature: Implications for Spiritual Ecology. *Religions*, 10(9), 502. <https://doi.org/10.3390/rel10090502>
- Araque Geney, E. A. (2023). Una mirada a la realidad económica y educativa de la mujer indígena Zenú: Reflexiones desde el Cabildo Menor el Campo Mirella. *Región Científica*, 2(2), 202366. <https://doi.org/10.58763/rc202366>
- Argyrou, A., & Hummels, H. (2019). Legal personality and economic livelihood of the Whanganui River: A call for community entrepreneurship. *Water International*, 44(6–7), 752–768. <https://doi.org/10.1080/02508060.2019.1643525>
- Baard, P. (2023). Are Rights of Nature Manifesto Rights (And is That a Problem)? *Res Publica*, 29(3), 425–443. <https://doi.org/10.1007/s11158-023-09584-5>
- Berros, M. V. (2021). Challenges for the Implementation of the Rights of Nature: Ecuador and Bolivia as the First Instances of an Expanding Movement. *Latin American Perspectives*, 48(3), 192–205. <https://doi.org/10.1177/0094582X211004898>
- Berros, M. V., & Carman, M. (2022). Los dos caminos del reconocimiento de los derechos de la naturaleza en América Latina. *Revista Catalana de Dret Ambiental*, 13(1). <https://doi.org/10.17345/rcda3297>
- Best, J. (2019). Anthropogenic stresses on the world's big rivers. *Nature Geoscience*, 12(1), 7–21. <https://doi.org/10.1038/s41561-018-0262-x>
- Blair, H. (2023). Saving India's rivers: Ecology, civil society, religion, and legal personhood. *World Development Sustainability*, 3, 100068. <https://doi.org/10.1016/j.wds.2023.100068>
- Burgers, L. (2022). Private Rights of Nature. *Transnational Environmental Law*, 11(3), 463–474. <https://doi.org/10.1017/S2047102522000401>
- Cano Pecharroman, L. (2018). Rights of Nature: Rivers That Can Stand in Court. *Resources*, 7(1), 13. <https://doi.org/10.3390/resources7010013>
- Celermajer, D., Schlosberg, D., Rickards, L., Stewart-Harawira, M., Thaler, M., Tschakert, P., Verlie, B., & Winter, C. (2021). Multispecies justice: Theories, challenges, and a research agenda for environmental politics. *Environmental Politics*, 30(1–2), 119–140. <https://doi.org/10.1080/09644016.2020.1827608>
- Cohen, A., & Norman, E. S. (2018). Renegotiating the Columbia River Treaty: Transboundary Governance and Indigenous Rights. *Global Environmental Politics*, 18(4), 4–24. https://doi.org/10.1162/glep_a_00477
- Epstein, Y., & Schoukens, H. (2021). A positivist approach to rights of nature in the European Union. *Journal of Human Rights and the Environment*, 12(2), 205–227. <https://doi.org/10.4337/jhre.2021.02.03>
- Fitz-Henry, E. (2022). Multi-species justice: A view from the rights of nature movement. *Environmental Politics*, 31(2), 338–359. <https://doi.org/10.1080/09644016.2021.1957615>
- Gilbert, J. (2023). Creating Synergies between International Law and Rights of Nature. *Transnational Environmental Law*, 12(3), 671–692. <https://doi.org/10.1017/S2047102523000195>
- Gonzales Centon, J. M., Chávez Cubas, W., Berrio Huilacacuri, J., & Santos Maldonado, A. B. (2023). El crecimiento empresarial y su relación en la rentabilidad de una MYPE del rubro comercial en Arequipa, Perú. *Región Científica*, 2(2), 202387. <https://doi.org/10.58763/rc202387>
- González Vallejo, R. (2023). La transversalidad del medioambiente: Facetas y conceptos teóricos. *Región Científica*, 2(2), 202393. <https://doi.org/10.58763/rc202393>
- Grill, G., Lehner, B., Thieme, M., Geenen, B., Tickner, D., Antonelli, F., Babu, S., Borrelli, P., Cheng, L., Crochetiere, H., Ehalt Macedo, H., Filgueiras, R., Goichot, M., Higgins, J., Hogan, Z., Lip, B., McClain, M. E., Meng, J., Mulligan, M., ... Zarfl, C. (2019). Mapping the world's free-flowing rivers. *Nature*, 569(7755), 215–221. <https://doi.org/10.1038/s41586-019-1111-9>
- Gustafsson, M.-T., & Schilling-Vacaflor, A. (2022). Indigenous Peoples and Multiscalar Environmental Governance: The Opening and Closure of Participatory Spaces. *Global Environmental Politics*, 22(2), 70–94. https://doi.org/10.1162/glep_a_00642
- Haase, P., Bowler, D. E., Baker, N. J., Bonada, N., Domisch, S., Garcia Marquez, J. R., Heino, J., Hering, D., Jähnig, S. C., Schmidt-Kloiber, A., Stubbington, R., Altermatt, F., Álvarez-Cabria, M., Amatulli, G., Angeler, D. G., Archambaud-Suard, G., Jorrín, I. A., Aspin, T., Azpiroz, I., ... Welti, E. A. R. (2023). The recovery of European freshwater biodiversity has come to a halt. *Nature*, 620(7974), 582–588. <https://doi.org/10.1038/s41586-023-06400-1>
- Harden-Davies, H., Humphries, F., Maloney, M., Wright, G., Gjerde, K., & Vierros, M. (2020). Rights of Nature: Perspectives for Global Ocean Stewardship. *Marine Policy*, 122, 104059. <https://doi.org/10.1016/j.marpol.2020.104059>
- Hilson, C. (2022). The Role of Narrative in Environmental Law: The Nature of Tales and Tales of Nature. *Journal of Environmental Law*, 34(1), 1–24. <https://doi.org/10.1093/jel/eqab043>
- Hoops, B. (2022). What If the Black Forest Owned Itself? A Constitutional Property Law Perspective on Rights of Nature. *Transnational Environmental Law*, 11(3), 475–500. <https://doi.org/10.1017/S2047102522000322>
- Inoue, C. Y. A. (2018). Worlding the Study of Global Environmental Politics in the Anthropocene: Indigenous Voices from the Amazon. *Global Environmental Politics*, 18(4), 25–42. https://doi.org/10.1162/glep_a_00479

- Jefferson, D. J., Macpherson, E., & Moe, S. (2023). Experiments with the Extension of Legal Personality to Ecosystems and Beyond-Human Organisms: Challenges and Opportunities for Company Law. *Transnational Environmental Law*, 12(2), 343–365. <https://doi.org/10.1017/S2047102523000079>
- Jolly, S., & Menon, K. S. R. (2021). Of Ebbs and Flows: Understanding the Legal Consequences of Granting Personhood to Natural Entities in India. *Transnational Environmental Law*, 10(3), 467–492. <https://doi.org/10.1017/S2047102520000424>
- Kang, K. (2019). On the problem of the justification of river rights. *Water International*, 44(6–7), 667–683. <https://doi.org/10.1080/02508060.2019.1643523>
- Kauffman, C. M., & Martin, P. L. (2018). Constructing Rights of Nature Norms in the US, Ecuador, and New Zealand. *Global Environmental Politics*, 18(4), 43–62. https://doi.org/10.1162/glep_a_00481
- Knauß, S. (2018). Conceptualizing Human Stewardship in the Anthropocene: The Rights of Nature in Ecuador, New Zealand and India. *Journal of Agricultural and Environmental Ethics*, 31(6), 703–722. <https://doi.org/10.1007/s10806-018-9731-x>
- Kotzé, L. J., & Kim, R. E. (2019). Earth system law: The juridical dimensions of earth system governance. *Earth System Governance*, 1, 100003. <https://doi.org/10.1016/j.esg.2019.100003>
- Kramm, M. (2020). When a River Becomes a Person. *Journal of Human Development and Capabilities*, 21(4), 307–319. <https://doi.org/10.1080/19452829.2020.1801610>
- Kramm, M. (2024). The role of political ontology for Indigenous self-determination. *Critical Review of International Social and Political Philosophy*, 27(5), 714–735. <https://doi.org/10.1080/13698230.2021.1997250>
- Kurki, V. A. J. (2022). Can Nature Hold Rights? It's Not as Easy as You Think. *Transnational Environmental Law*, 11(3), 525–552. <https://doi.org/10.1017/S2047102522000358>
- Łaszewska-Hellriegel, M. (2023). Environmental Personhood as a Tool to Protect Nature. *Philosophia*, 51(3), 1369–1384. <https://doi.org/10.1007/s11406-022-00583-z>
- Macpherson, E., Borchgrevink, A., Ranjan, R., & Vallejo Piedrahíta, C. (2021). Where ordinary laws fall short: 'Riverine rights' and constitutionalism. *Griffith Law Review*, 30(3), 438–473. <https://doi.org/10.1080/10383441.2021.1982119>
- Macpherson, E., Torres Ventura, J., & Clavijo Ospina, F. (2020). Constitutional Law, Ecosystems, and Indigenous Peoples in Colombia: Biocultural Rights and Legal Subjects. *Transnational Environmental Law*, 9(3), 521–540. <https://doi.org/10.1017/S204710252000014X>
- Martínez Castillo, P. J., López Cruz, R., & Silva Martínez, D. (2024). Comportamientos de sustentabilidad. Una aplicación de la teoría VBN en estudiantes de ingeniería. *Región Científica*, 3(1), 2024259. <https://doi.org/10.58763/rc2024259>
- Martwarra, RiverOfLife, Poelina, A., McDuffie, M., & Perdrisat, M. (2023). Martwarra Fitzroy River Watershed: One society, one river law. *PLOS Water*, 2(9), e0000104. <https://doi.org/10.1371/journal.pwat.0000104>
- McClelland, R. (2023). Rights of Rivers in a Changing Climate. *Climate Law*, 13(3–4), 237–250. <https://doi.org/10.1163/18786561-bja10043>
- Moreira, A. D. J., & Reis Fonseca, R. M. (2024). La inserción de los movimientos sociales en la protección del medio ambiente: Cuerpos y aprendizajes en el Recóncavo da Bahia. *Región Científica*, 3(1), 2024208. <https://doi.org/10.58763/rc2024208>
- Murgas Téllez, B., Henao-Pérez, A. A., & Guzmán Acuña, L. (2023). Oposición pública o manifestación social frente a proyectos de inversión en Chile y Colombia. *Región Científica*, 2(2), 2023112. <https://doi.org/10.58763/rc2023112>
- O'Donnell, E. L., & Talbot-Jones, J. (2018). Creating legal rights for rivers: Lessons from Australia, New Zealand, and India. *Ecology and Society*, 23(1), art7. <https://doi.org/10.5751/ES-09854-230107>
- Pilon-Summons, C., Pratt, S., Brown, P. J., & Baumber, A. (2022). From barriers to boundary objects: Rights of nature in Australia. *Environmental Science & Policy*, 134, 13–22. <https://doi.org/10.1016/j.envsci.2022.03.013>
- Putzer, A., Lambooy, T., Breemer, I., & Rietveld, A. (2022). The Rights of Nature as a Bridge between Land-Ownership Regimes: The Potential of Institutionalized Interplay in Post-Colonial Societies. *Transnational Environmental Law*, 11(3), 501–523. <https://doi.org/10.1017/S2047102522000334>
- Rawson, A., & Mansfield, B. (2018). Producing juridical knowledge: "Rights of Nature" or the naturalization of rights? *Environment and Planning E: Nature and Space*, 1(1–2), 99–119. <https://doi.org/10.1177/2514848618763807>
- Reid, A. J., Carlson, A. K., Creed, I. F., Eliason, E. J., Gell, P. A., Johnson, P. T. J., Kidd, K. A., MacCormack, T. J., Olden, J. D., Ormerod, S. J., Smol, J. P., Taylor, W. W., Tockner, K., Vermaire, J. C., Dudgeon, D., & Cooke, S. J. (2019). Emerging threats and persistent conservation challenges for freshwater biodiversity. *Biological Reviews*, 94(3), 849–873. <https://doi.org/10.1111/brv.12480>
- Richardson, W., & Bustos, C. (2022). Implementing Nature's Rights in Colombia: The Atrato and Amazon Experiences. *Revista Derecho del Estado*, (54), 227–275. <https://doi.org/10.18601/01229893.n54.08>
- Ripoll Rivaldo, M. (2023). El emprendimiento social universitario como estrategia de desarrollo en personas, comunidades y territorios. *Región Científica*, 1(1), 202379. <https://doi.org/10.58763/rc202379>
- Sabater, S., Bregoli, F., Acuña, V., Barceló, D., Elozegi, A., Ginebreda, A., Marcé, R., Muñoz, I., Sabater-Liesa, L., & Ferreira, V. (2018). Effects of human-driven water stress on river ecosystems: A meta-analysis. *Scientific Reports*, 8(1), 11462. <https://doi.org/10.1038/s41598-018-29807-7>
- Sanabria Martínez, M. J. (2022). Construir nuevos espacios sostenibles respetando la diversidad cultural desde el nivel local. *Región Científica*, 1(1), 20222. <https://doi.org/10.58763/rc20222>
- Sanders, K. (2018). 'Beyond Human Ownership'? Property, Power and Legal Personality for Nature in Aotearoa New Zealand. *Journal of Environmental Law*. <https://doi.org/10.1093/jel/eqx029>

- Schimmöller, L. (2020). Paving the Way for Rights of Nature in Germany: Lessons Learnt from Legal Reform in New Zealand and Ecuador. *Transnational Environmental Law*, 9(3), 569–592. <https://doi.org/10.1017/S2047102520000126>
- Schmidt, Jeremy. J. (2022). Of kin and system: Rights of nature and the UN search for Earth jurisprudence. *Transactions of the Institute of British Geographers*, 47(3), 820–834. <https://doi.org/10.1111/tran.12538>
- Sempértegui, A., & Báez, M. (2024). Ontological Conflicts in the Plurinational State: The Case of Indigenous Resistance against the Mirador Mega-Mining Project in Ecuador. *Society & Natural Resources*, 37(5), 660–677. <https://doi.org/10.1080/08941920.2023.2228241>
- Tadaki, M., Clapcott, J., Holmes, R., MacNeil, C., & Young, R. (2023). Transforming freshwater politics through metaphors: Struggles over ecosystem health, legal personhood, and invasive species in Aotearoa New Zealand. *People and Nature*, 5(2), 496–507. <https://doi.org/10.1002/pan3.10430>
- Tănăsescu, M. (2020). Rights of Nature, Legal Personality, and Indigenous Philosophies. *Transnational Environmental Law*, 9(3), 429–453. <https://doi.org/10.1017/S2047102520000217>
- Tickner, D., Opperman, J. J., Abell, R., Acreman, M., Arthington, A. H., Bunn, S. E., Cooke, S. J., Dalton, J., Darwall, W., Edwards, G., Harrison, I., Hughes, K., Jones, T., Leclère, D., Lynch, A. J., Leonard, P., McClain, M. E., Muruven, D., Olden, J. D., ... Young, L. (2020). Bending the Curve of Global Freshwater Biodiversity Loss: An Emergency Recovery Plan. *BioScience*, 70(4), 330–342. <https://doi.org/10.1093/biosci/biaa002>
- Vázquez Vidal, V., & Martínez Prats, G. (2023). Desarrollo regional y su impacto en la sociedad mexicana. *Región Científica*, 2(1), 202336. <https://doi.org/10.58763/rc202336>
- Vega Cardenas, Y., & Mestokosho, U. (2022). El reconocimiento de los derechos de la Naturaleza en Canadá: El caso del río Magpie /Mutehekau Shipu. *Revista Catalana de Dret Ambiental*, 13(1). <https://doi.org/10.17345/rcda3310>
- Viaene, L. (2022). Can Rights of Nature Save Us from the Anthropocene Catastrophe? Some Critical Reflections from the Field. *Asian Journal of Law and Society*, 9(2), 187–206. <https://doi.org/10.1017/als.2022.2>
- Villavicencio Calzadilla, P., & Kotzé, L. J. (2018). Living in Harmony with Nature? A Critical Appraisal of the Rights of Mother Earth in Bolivia. *Transnational Environmental Law*, 7(3), 397–424. <https://doi.org/10.1017/S2047102518000201>
- Wesche, P. (2021). Rights of Nature in Practice: A Case Study on the Impacts of the Colombian Atrato River Decision. *Journal of Environmental Law*, 33(3), 531–555. <https://doi.org/10.1093/jel/eqab021>