

Permeable river-worlds: Emergent caring politics along the Dílar and Monachil rivers in southern Spain

Carolina Cuevas Parra¹

Ana María Arbeláez-Trujillo

Jaime Hoogesteger

Wageningen University, the Netherlands

Abstract

This article draws on conversations and ethnographic observations with activists in Granada, Andalusia, as they learn to respond 'otherwise' to the socioecological challenges of the Dílar and Monachil rivers. They inhabit the disorienting space opened by asking how to care for rivers during the multiple grievances of the 'scandalous thing' (Haraway, 1988) – understood as interlocking material-discursive power dynamics. These activists invite us to embrace 'caring', to articulate emergent ethico-political repertoires that strive to interrupt the dominant imaginaries of rivers and environmental activism in the region. Drawing on a political ecology of water, posthuman feminist theory, and care scholarship, we examine how these activists attempt to cultivate caring relationships with rivers, emphasizing the affective entanglements and material interdependence of human and more-than-human beings in Granada's rural agroecosystems. The feminist figuration of permeability is central to understanding how these activists navigate the disputed and shifting boundaries of these river-worlds. We highlight how permeable boundaries allow water, concerns, and stories to seep through allegedly fixed divides, reflecting the activists' engagement with the interdependent flows of energy, matter, identities, feelings, and meanings within these agroecosystems. By reclaiming the affective and material interdependence that sustains life from the mountains to the plains in a territory where, according to activists, "everything is cemented and broken," we conclude that these activists' caring engagements are enacting permeable river-worlds that attempt to hold together fractured and potentially conflicting lifeways across the shared commons of these river basins.

Keywords: Care, permeability, rivers, environmental activism, affective entanglements

¹ Carolina Cuevas Parra & Ana María Arbeláez-Trujillo, PhD candidates in Water Resources Management, and Jaime Hoogesteger, Associate Professor, Wageningen University, the Netherlands. Email: carolina.cuevasparra@wur.nl. This article is dedicated to the loving memory of Blas García, and the fierce activists weaving their lives with the Dílar and Monachil rivers. Their joyful kindness and teachings have been invaluable. We are also thankful to Arcadio Martínez Lanz, and the anonymous reviewers for their insightful comments. This research was funded by the European Research Council (ERC) under the EU's Horizon 2020 Program (Riverhood, grant agreement No. 101002921). We also acknowledge the funding of the Riverscape Conviviality (RiVIVE) project funded by the European Biodiversity Partnership Biodiversa+, under the 2023-2024 BiodivNBS joint call. It is co-funded by the European Commission (GA No. 101052342) and the following funding organizations: Ministerio de Ciencia, Innovación y Universidades/Agencia Española de Investigación, Ministero dell'Università e della Ricerca, Netherlands Organisation for Scientific Research (NWO), and Agence Nationale de la Recherche.

Resumen

Este artículo se basa en conversaciones y observaciones etnográficas con activistas de Granada, Andalucía, quienes aprenden, día a día, a responder "de otros modos" a los retos socioecológicos de los ríos Dílar y Monachil. Habitando el desconcertante espacio que se abre al preguntarse cómo cuidar sus ríos en medio de los múltiples agravios de la 'cosa escandalosa' (Haraway, 1988) —entendida como dinámicas de poder entrelazadas, tanto materiales como discursivas—, estos activistas nos invitan a abrazar 'los cuidados', articulando repertorios ético-políticos que interrumpen en los imaginarios dominantes sobre los ríos y el activismo medioambiental en la región. Inspiradas en la ecología política del agua, la teoría feminista post-humana, y los estudios sobre el cuidado, en este artículo hilamos narración y aportes teóricos para mostrar cómo las activistas intentan cultivar relaciones de cuidado con los ríos, enfatizando los vínculos afectivos y la interdependencia material de los seres humanos y más-que-humanos en los agroecosistemas rurales de Granada. La permeabilidad, como una figuración feminista, resulta fundamental para entender cómo estas activistas navegan por las formas cambiantes y disputadas de estos ríos. Por último, destacamos cómo entender estos ríos como permeables, permite a su vez entender cómo el agua, las preocupaciones, los afectos y las historias se filtran a través de divisiones supuestamente rígidas, reflejando el compromiso de las activistas con los flujos interdependientes de energía, materia, identidades, emociones y significados dentro de estos agroecosistemas. Al reivindicar la interdependencia afectiva y material que sustenta la vida desde las montañas hasta la vega, en un territorio en el que, en palabras de las activistas, "todo está cementado y roto", concluimos que cultivar modos cuidadosos de vincularse con estos ríos pone en práctica mundos-ríos permeables que intentan mantener unidas formas de vida fracturadas a través de los bienes comunes de estas cuencas.

Palabras clave: Cuidado, Permeabilidad, Ríos, Activismo medioambiental, Vínculos afectivos

Resumo

Este artigo baseia-se em conversas e observações etnográficas com ativistas em Granada, Andaluzia, enquanto aprendem a responder de forma 'diferente' aos desafios socioecológicos dos rios Dílar e Monachil. Habitando o espaço desorientador aberto pela pergunta sobre como cuidar dos rios em meio às múltiplas queixas da 'coisa escandalosa' (Haraway, 1988) —entendida como dinâmicas de poder materiais-discursivas interligadas—, esses ativistas nos convidam a abraçar o 'cuidado' para articular repertórios ético-políticos emergentes que buscam interromper os imaginários dominantes dos rios e do ativismo ambiental na região. Recorrendo à ecologia política da água, à teoria feminista pós-humana e aos estudos sobre o cuidado, examinamos como esses ativistas tentam cultivar relações de cuidado com os rios, enfatizando os entrelaçamentos afetivos e a interdependência material entre seres humanos e não humanos nos agroecosistemas rurais de Granada. A figuração feminista da permeabilidade é central para a compreensão de como esses ativistas navegam pelas fronteiras disputadas e mutáveis desses mundos fluviais. Portanto, destacamos como as fronteiras permeáveis permitem que a água, as preocupações e as histórias se infiltrem através de divisões supostamente fixas, refletindo o envolvimento dos ativistas com os fluxos interdependentes de energia, matéria, identidades, sentimentos e significados dentro desses agroecosistemas. Ao reivindicar a interdependência afetiva e material que sustenta a vida das montanhas às planícies em um território onde, segundo os ativistas, "tudo é cimentado e quebrado", concluimos que esses engajamentos de cuidado dos ativistas estão criando mundos fluviais permeáveis que tentam manter unidos modos de vida fragmentados e potencialmente conflitantes nos bens comuns compartilhados dessas bacias hidrográficas.

Palavras-chave: Cuidado, Permeabilidade, Rios, Ativismo Ambiental, Enredamentos Afetivos

1. Introduction: Learning other ways to live with rivers

We want to hold on to life here. Water feeds the life of the places where it flows. We want to create another culture of understanding water, rivers, and life. But the underlying work is to learn another way of relating: learning other ways of meeting each other, and caring for all of life.

Our biggest challenge is to imagine other ways to open the dialogue to understand the many realities of water. For this, we are trying together los cuidados (plural care), and we are going slowly.

These two quotes come from one of the first meetings we attended of two grassroots activist groups engaged in defending the Dílar and Monachil rivers near Granada, Spain.² Recognizing that care plays a central role in how they frame their activism, it became evident that delving deeper into this concept is essential to understand their struggle and its challenges. Beneath the grievances and emotions expressed in this meeting lies a false dichotomy that has long pitted environmentalism against agriculture in the region, a tension further exacerbated by the capitalist exploitation of water by a ski resort at the headwaters of the rivers. This situation underscores the complex challenges of water governance in Andalusia, where capitalist economic growth is placing mounting strain on socioecological relations in a region increasingly affected by climate change-induced water scarcity.

Flowing down from the glacial lagoons of Sierra Nevada towards the *vega* (plain) of Granada, the Dílar and Monachil rivers have been shaped as complex material and affective entanglements of water-human relationships through an extensive network of *acequias* (canals) that have historically distributed river water throughout the agroecosystem. These hydrosocial dynamics have been severely disrupted by the rapid urbanization of the *vega*, altered precipitation patterns due to climate change, and, relatedly, the expansion of the ski resort at the river's headwaters. With diminishing and delayed snowfall, the ski resort has turned to grabbing river water to produce artificial (technical) snow (Arbeláez-Trujillo *et al.*, 2025). In this context, discussions on addressing impending water scarcity – conversations that not only examine the equitable distribution and management of water resources but also go deeper into the underlying onto-epistemic and affective frameworks shaping people's understandings and relationship with rivers – have reached a kind of stalemate. This impasse mirrors broader societal debates characterized by a shared, yet unequal, sense of vulnerability, but also deep divisions among economic sectors, ideological perspectives, and cultural identities.

This article follows conversations and ethnographic observations with members of the groups *Que corra el agua* (Let the water flow) and *La nieve no es de naide* (The snow belongs to no one) as they are called upon to learn other ways to live with rivers and 'respond otherwise'³ to multiple socioecological challenges. Living in a territory where, in their words, "everything is cemented and broken," these activists attempt⁴ to grapple with the complexities of fostering care and activism for

² Although members of these collectives self-identify as 'neighbors', and partially as activists, we argue that they are stretching the boundaries of how we understand environmental activism. We will use the terms 'activists' to refer to members of these collectives.

³ We draw on Catherine Walsh's (2015) use of the 'otherwise', signifying more than a reductionist 'either/or' dynamic and aiming to engender new forms of relationality.

⁴ Antonio, from the group *Que corra el agua*, emphasizes that they are *attempting*, and not entirely *succeeding* to articulate responses: "We are trying, sometimes *dando palos de ciego* (wild-goose chasing), but what we do know is that we have to keep on."

rivers amidst overwhelming transformations, transitions, and ever-deepening social divisions. We argue that these collectives – operating at the blurry intersection of ecological concerns, activism, community-building and social justice – are questioning not only the distribution and management of water resources, but also the foundational onto-epistemic, ethical and affective frameworks that underpin their relationships with rivers through emergent politics of care. These politics of care involve tending to other(ed) people, ruptured ecologies and memories, non-human beings, and realities of water, and they are fundamentally rooted in spaces to meet and affect each other across differences. These efforts challenge the dominant ethico-political paradigms of environmental activism and water governance in Spain. We see this as an opportunity to closely examine not a consolidated environmental movement, but rather the early stages, predicaments, and emotions, of small activist collectives sidelined by mainstream environmental discourse and scholarship.

In the following pages, we analyze how permeable boundaries allow water, concerns, and stories to seep through allegedly fixed divides, reflecting the activists' engagement with the interdependent flows of energy, matter, identities, feelings, and meanings within riverine agroecosystems. We do so by drawing on political ecology of water, posthuman feminist theory, and care scholarship. The feminist figuration of permeability is rendered central to understanding how these activists navigate the disputed and shifting boundaries of these rivers. We show how by reclaiming the affective and material interdependence that sustains life in these rivers, both their politics and their notions of rivers are becoming permeable, slowly shifting and seeping between binaries. Our purpose is to highlight the interdependent nature of these river-worlds, and the activists' search for a relational political imaginary that allows them to reclaim, in their words, "a tethered life." We conclude that these activists' caring engagements are enacting permeable river-worlds that attempt to hold together fractured and potentially conflicting lifeways across the shared commons of these rivers.

The fieldwork for this action-research was conducted by the first and second author over two ten-week periods in the fall of 2023 and 2024. Our research methodology encompassed a wide array of methods emerging from ongoing conversations with activists. In addition to participant observation, semi-structured and in-depth interviews, informal conversations, and river walks, we actively participated in events and meetings with activists, environmentalists (from more conservationist focused groups), irrigators, and local inhabitants of Dilar, Monachil and the *vega* of Granada. More specifically, we closely collaborated with *Que corra el agua* from Dilar and *La nieve no es de naide* from Monachil. These grassroots collectives were formed in 2023 in response to a series of events during one of the driest years recorded in the history of Granada (AEMET, 2024). Organized as open assemblies, and constantly fluctuating in their numbers, the collectives are composed of approximately six regular members who strive to meet weekly to discuss and organize various activities. They advocate for rivers, but distance themselves from the loaded label of 'environmentalists' (*ecologistas*) due to the high stakes associated with this term. Most members – hereafter referred to as activists – are people in their forties and fifties who have lived in the rural areas of Granada for many years, yet are still considered outsiders (*forasteros*) by the older generation born in the region. Despite this, these collectives have progressively collaborated with other grassroots organizations, irrigator communities⁵, and academic institutions⁶ to foster spaces for dialogue among disparate groups, neighbors, and water users through their open assemblies, social

⁵ In Andalusia, a *comunidad de regantes* is an association of water users that is bounded by shared access, use, maintenance, and decision-making about delimited water sources and irrigation infrastructures.

⁶ E.g. Ecologistas en Acción Granada; Somos Vega, Somos Tierra; Abrazo a la Vega; Plataforma Defendamos La Vega Otra Vez; and MemoLab from the University of Granada.

media posts, protests, and events like mapping workshops and river walks (Arbeláez-Trujillo & Cuevas Parra, 2025). Following this, we conducted several river co-learning activities (Souza *et al.*, 2025) co-organized with the collectives, such as community-based mapping events and arts-based projects, including audiovisual and sound documentation.⁷

In the following section, we present our theoretical framework. Then we introduce the Dílar and Monachil rivers by exploring the multiple socioecological transformations they have endured in recent decades, highlighting their significance in the activists' understandings of the rivers' critical situations. We discuss how the activities organized by these collectives aim to generate a 'tethering force' that, among ruptures and hardenings, configures a caring ethico-political repertoire. Next, we examine how activists are learning to become permeable, navigating the socioecological fractures and hardenings embedded in water conflicts in the region. We conclude by showing how their politics of care not only address immediate concerns but also redefine the ways in which rivers, environmental activism, and water governance are conceptualized, contested, and reshaped.

2. Thinking with care through permeability

We are inspired by scholarly and activist reflections on care as an ethico-political engagement, a theoretical repertoire, and an analytical lens, and we enter into this conceptual knot through Fisher and Tronto's much-cited definition: care is "everything that we do to maintain, continue and repair 'our world' so that we can live in it as well as possible" (1990, p. 40). Departing from this definition, and its posthuman re-framing by Puig de la Bellacasa (2017) – who argues that the "we" in this definition is actually a more-than-human "*it is done*" –, we attend to caring amidst the disputed hydrosocial and naturecultural worlds of rivers (Boelens *et al.*, 2016, 2022; Haraway, 2003). Slowly "adding layers" (Puig de la Bellacasa, 2017), we avoid reifying a delusional caring (Haraway, 2016) as a universalizing 'catch-all term', or merely a moralizing 'good' feeling. Instead, we follow the specific local shapes that caring may adopt in the river-worlds where we are entangled (di Giminiani, 2022; Domínguez-Guzmán *et al.*, 2022; Mol & Hardon, 2021). To do so, we foreground permeability as a feminist figuration that is key to understanding the shifting ontological boundaries and the relational material-discursive complexities of the Dílar and Monachil rivers.

Permeability, understood here as the capacity of seemingly hardened boundaries to allow substances, stories, matters of concern, or information to 'seep through', provides a feminist ethico-political framework, as well as a language and praxis, to examine how activists articulate 'caring' as a response-ability for these rivers (Barad, 2007; Haraway, 2016). Contesting the notion that onto-epistemic boundaries are fixed or stable, hydro-feminist scholarship has long explored the implications of considering bodies, infrastructures, and categories as leaky, porous, and permeable (Bosworth, 2017; Neimanis, 2017; Strang, 2014). Challenging traditional self-enclosed understandings of embodied subjectivity and agency, this perspective inquires what it means that human bodies and rivers are not pre-existent entities, but open to affect and to be affected in entangled co-constitutive relationships. It is from this entangled and permeable existence that response-ability and possibilities for action arise. By examining permeability across various dimensions, we trace how waterflows, lifeworlds, emotions, and concerns seep through the hardenings and fractures within the Dílar and Monachil riverine agroecosystems.

This perspective renders rivers as the ongoing interaction of political, socioecological, and techno-material arrangements, lifeways, imaginaries, memories, temporalities, infrastructures, laws, affects, and practices unfolding and contorting into each other (Boelens *et al.*, 2016, 2022). Political

⁷ See Cuevas Parra & German (2025) and <http://www.chorusofsingingrivers.org>

ecologies of water have provided an analytical framework to engage with the material and discursive aspects of these dynamics, asserting the contested socio-natural assemblages and processes that have shaped our understandings and experiences of water(s) (Sultana, 2015; Swyngedouw, 1999; Zwartveen & Boelens, 2014). This approach conceptualizes water(s) as multiple, relational, and anchored to situated socioecological formations through an attention to everyday embodiments and tensions within homogenizing hydrosocial dynamics (Sultana, 2015; Vogt & Walsh, 2021). These notions allow us to think of rivers as always-in-the-making; as continuously disputed, leaking, flowing, and shifting, reflecting a complex interplay of political, cultural, technological, and ecological forces (Mol, 2002). Riverine limits are continuously re-defined and disputed through material and figurative practices that set tentative and 'tricky' boundaries that become naturalized in historically shaped power dynamics (Boelens *et al.*, 2016; Haraway, 1988). With this in mind, we understand rivers not just as territorial arrangements, but as dynamic ontological, affective, and material-discursive assemblages – what we refer to as "river-worlds."

Recent political ecology of water scholarship has expanded the concept of 'water conflicts' beyond their biophysical material dimensions – as disputes on the use, distribution, and governance of water as a resource – to address them as sites where words, worlds, emotions, and modes of relation are disputed and re-assembled (Singh, 2013; Sultana, 2015; Escobar, 2016). This perspective also sheds light on how, amidst environmental conflicts, those bearing the costs of environmental injustices often articulate a sense of response-ability beyond dominant imaginaries of environmental activism and modern environmental politics (Martínez-Alier, 2002; Haraway, 2016; Bresnihar & Miller, 2023). Activists' political and discursive repertoires aspire to something 'other' than the business-as-usual approach of top-down environmental governance, engaging in critical interrogations, prefigurative imagination, practices, and, crucially, affective relations with more-than-human worlds (Dave, 2011; Liboiron *et al.*, 2018). However, these efforts do not necessarily crystallize immediately into clear-cut demands, visible actions, or public policies. As we discuss, the call to care for rivers brings to the surface concerns, emotions, ideological positions, and hopes for the future while acknowledging the minor and 'insignificant' tasks, beings, and processes that have long sustained and made possible riverine lifeworlds. In this way, encompassing interrelated practical, affective, and ethico-political dimensions (Puig de la Bellacasa, 2017), a caring perspective on river activism shifts the focus from conventional, visible, and large-scale actions and claims to the often-overlooked, yet profoundly impactful, interrogations, emotions, small acts, and gestures of care that underpin water conflicts.

We are writing this article in the midst of a multifaceted crisis that can only be called ecological if understood in the broadest sense of a *crisis* – a severance, a separation – of and from our earthy-watery home. Our engagement with these activists lies in the conviction that, by becoming implicated in this matter, they/we are reimagining and re-enacting what else a river might become amidst such an overwhelming crisis. Foregrounding how activists' caring practices 'make' river-worlds liveable (de la Cadena, 2015; Mol, 2002; Tsing, 2015), we focus on these 'otherwise' understandings of rivers to shed light on the many ways of enacting river-worlds that have historically been excluded or nearly engulfed into the modern/colonial and neoliberal capitalist arrangements that feminist thinkers have termed the 'scandalous thing' (Haraway, 1988; Pérez, 2019; Murillo, 2023). Drawing on this feminist framework, 'the scandalous thing', in the context of rivers, refers to the interlocking global material-discursive power dynamics, economic forces and operations that capture, categorize, and assign differential value to ecological processes, bodies, and lifeways under the hegemonic logics of top-down hydrocratic control, capitalist valuation, economic growth, techno-efficiency, and market-based environmental governance (Harris, 2015; Roca-Servat & Arias-Henao, 2021).

By focusing on the questions, emotions, and caring practices of grassroots collectives, our theoretical perspective underscores the importance of everyday, small-scale, often overlooked forms of resistance, and reimagines the tenets of water governance from the ground up. Much of the existing literature in political ecology of water has concentrated on large-scale, visible movements, such as the anti-dam campaigns in Spain, while smaller, ephemeral, and local river activism remains under-explored (Vos, 2024). In a similar vein, most of this literature explores such movements with a focus on clear-cut political claims and subjects, action repertoires, and agendas that can be replicated, immediately translated into policies, or scaled up. This article engages with permeability as a feminist figuration that enables the enactment of messy, mundane, 'otherwise' everyday re-imaginings of these rivers, providing a nuanced understanding of the complexities of water governance in Andalusia.

3. Capitalism is eating away our lives

The discontents of water governance in Spain

In recent debates surrounding water governance in Spain, 'the scandalous' aspect of rivers becomes evident in how long the 20th-century modernizing principles of Franco's nationalist 'hydraulic mission' have endured (Swyngedouw, 1999). This progress-oriented paradigm conceives and 'produces' water as a controllable and technocratically manageable resource, through state-financed large-scale hydraulic infrastructure such as reservoirs, dams, and, more recently, inter-basin river transfers. Initially, this paradigm centered on hydroelectric power generation and irrigation as the primary activities; over time, industry, and tourism were added to the list of ever-growing 'thirsty' sectors (López-Gunn, 2009; del Moral *et al.*, 2024). This has led to a widespread overallocation of both surface and groundwater under the assumption that water not directly contributing to socio-economic growth – such as water flowing into the sea – is 'wasted.' The ski resort in the Sierra Nevada mountains is an exemplary illustration of how an allegedly 'green' enterprise acts as an infrastructural expression of modern development and regional economic progress still aligned with Franco's hydraulic paradigm. The paradigm requires critical and nuanced attention that acknowledges the inseparability of biophysical phenomena such as climate change, irregular rainfall, rising temperatures and longer drought periods, and sociopolitical forces, including partisan and ideological polarization, unequal water distribution, growing urban-rural divides, socio-economic inequalities, and the emotions, histories, and cultures that surround water issues (Hernández-Mora *et al.*, 2015; del Moral *et al.*, 2024).

The recent "New Water Culture Movement" in Spain takes on this dominant hydraulic paradigm. It is a coalition of activists, academics, and water managers that, broadly speaking, aims to move from the model of state-financed large-scale infrastructure to more citizen-led co-governance initiatives. While the European Union's Water Framework Directive (2000/60/EC) introduced ecological status criteria and participatory mechanisms to recalibrate this situation, Spain's entrenched water governance schemes have largely preserved pre-existing power structures (Martínez-Fernández *et al.*, 2020). Water scarcity in Spain is still framed in the same way, both institutionally and as common sense, as a technical problem that is to be 'solved' by the state through large-scale engineered technofixes. At the same time, numerous grassroots movements are challenging these ideas, such as the dam removal movement (Hommes, 2022) and the defense of traditional irrigation systems (Hoogesteger *et al.*, 2023), among others. As depopulated rural communities of '*España vaciada*' (emptied Spain) perceive an abandonment by, and subordination to, urban-centric governments and economic forces, relations between agricultural and environmentalist actors are changing (Duarte-Abadía *et al.*, 2019; Arbeláez-Trujillo & Forigua-Sandoval, 2022). This matters because of a recent

'ecological' turn among Spain's far right, which is rapidly instrumentalizing the discontent of large sections of the rural population (Ungureanu & Popartan, 2024), including around the Dílar and Monachil rivers.

The Dílar and Monachil rivers

These two are part of Southern Spain's Guadalquivir River basin in Granada, Andalusia. Originating in the western flank of the Sierra Nevada mountain range, they flow for 36 km and 26 km into the Genil river, winding as thin threads of whitish water through the rugged terrain of the high grasslands and scrublands of the mountains into the fertile plain of the *vega* of Granada.⁸ As the two southernmost affluents of Granada's main river, they begin as tiny droplets of snowmelt above 2,800 meters, in the *chorreras*, *lagunillos*, and glacial lagoons around Veleta peak. Unique among Sierra Nevada's hundreds of streams and rivers because they are highly modified, they support the only ski resort in the Penibaetic mountain range, as well as subsequent small hydroelectric stations, before descending into the *vega* to nourish its agroecosystem and later merging into the Genil on the outskirts of Granada. They don't easily fit into a nature/culture divide. Among the canyons and dolomite slopes of the mountains, elms, willows, *borreguiles* (high-mountain pastures), *halfah* grass, *Nevadensis* chamomile, goats, and blackbirds, have long mingled with shepherds, farmers, cattle herders, *neveros* (snow-merchants), and irrigators. These people have built canals and streams that crisscross the gorges, conducting snowmelt and sediments towards the *vega*, where, since the time of the Romans, but especially during the Islamic era of Al-Andalus, rural communities established a sophisticated irrigation system of *acequias* to distribute sediment-rich water across the 1,300 km² fertile plain (Figure 1).

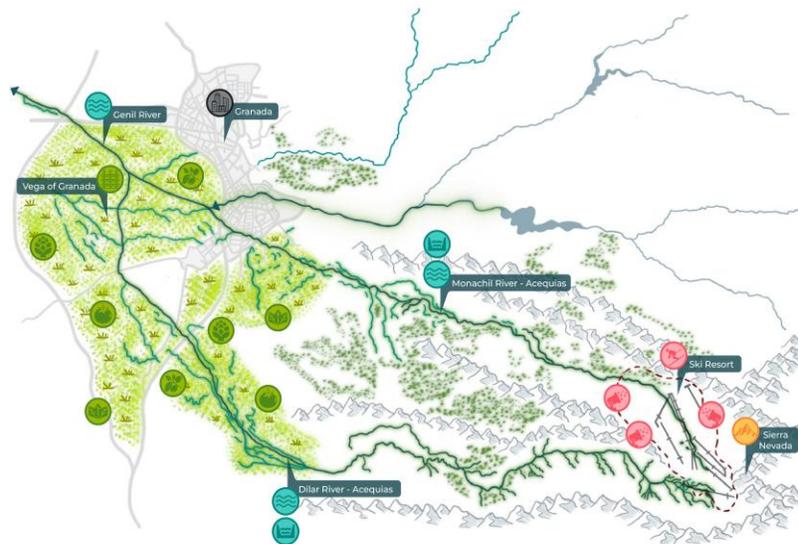


Figure 1: The Dílar and Monachil river-*acequias*. Author: Catalina Rey-Hernández

⁸ The Sierra Nevada (*Sulayr* in Arabic, "The Mountain of the Sun") is an east-west mountain range in southern Spain. Formed 30 million years ago during the Alpine orogeny, the last glaciation left glacial remnants and unique endemic flora and fauna. Due to its significance, Sierra Nevada was declared a UNESCO Biosphere Reserve in 1986, an Andalusian Natural Park in 1989, and a National Park in 1999.

Over the last fifty years, the Dílar and Monachil watersheds have undergone what activists consider aggressive socioecological transformations. In the upper basins, both rivers are subject to 'river-grabbing' (Arbeláez-Trujillo *et al.*, 2025) to supply a year-round ski resort infrastructure. The resort was built in 1964 to promote tourism in Andalusia.⁹ Since 1995, CETURSA, the private-public company managing the resort has a concession to extract 350,000 cubic meters of water annually from the upper Monachil river for artificial snow production. In 2007, CETURSA petitioned for a new water concession including an expansion to 725,000 m³ annually from the Monachil. In June 2024, the Regional Government of Andalusia granted environmental authorization. Years before, in 1986, the Yeguas Lagoon, where the Dílar river is born, had been "savagely destroyed, walled, and waterproofed" (Dossier, 2023) to supply water for Pradollano's urbanization and its ski resort infrastructure. To do this, the Guadalquivir Hydrographic Confederation – the most senior water authority in Spain – established an exception to its Hydrological Plan for the Guadalquivir basin, allowing the Dílar and Monachil waters to be used for recreational and industrial purposes over agriculture. Over the past 50 years, however, there has been a significant decline in rainfall, with the duration of snow cover rapidly decreasing, disrupting streamflow patterns and affecting aquifer recharge in the region (García-del-Amo *et al.*, 2023).

This situation has spurred activists and irrigators to speak out against the ski resort's impact on the Sierra Nevada and its rivers, denouncing 'irrational' water use for artificial snow, the destruction of fragile high-mountain ecosystems, loss of biodiversity and risk of extinctions, inadequate climate change adaptation, and the degradation of legally protected lands (Dossier, 2023, Figure 2).¹⁰ Activists have used scientific studies to demonstrate that artificial snow production significantly impacts the agroecosystems of Sierra Nevada, challenging CETURSA's claim that artificial snow can serve as a temporary reservoir and, consequentially that "water returns to the rivers." As artificial snow production has continued to increase over the past two decades in regions like this burdened with tourism and impacted by climate change, research has shown that snowmaking leads to evaporation and sublimation losses. Around 30% of the water used by snow cannons is lost (De Jong *et al.*, 2009). This illustrates how global warming acts as a 'bright object,' exacerbating social, cultural, and political inequalities. The increasing reliance on snowmaking intensifies water demand and disrupts local hydrosocial systems, placing additional stress on already fragile watersheds and socioecological structures.¹¹

⁹ In 1964, the Granada City Council launched the Municipal Plan for the Promotion of Sierra Nevada, leading to the development of the "Sol y Nieve" urbanization and the formation of Centros Turísticos S.A. (now CETURSA Sierra Nevada S.A.), which manages the ski resort. In 1985, the Regional Government of Andalusia became the major shareholder, driving significant investment in the ski station's expansion.

¹⁰ Presented to the European Parliament in 2023, this dossier was created by the collectives in collaboration with Ecologistas en Acción Granada, fifteen environmental organizations, irrigation communities, research clusters from the Universities of Granada, Córdoba, and Wageningen, and 36,000 signatures in a change.org campaign.

¹¹ We thank an anonymous reviewer for this observation.



Figure 2: Snow, the first streams of the Dílar river, and the ski lifts in the Sierra Nevada. All photographs by Arcadio Martínez-Lanz.

Downstream, the traditionally agrarian *vega* has also undergone accelerated transformations, largely due to urbanization since the 1960s. Across Andalusia, rural areas have changed drastically, especially near population centers like Granada, where demographic growth and poorly regulated urban expansion have created 'competition' between agricultural land/water uses and residential, recreational, and industrial uses. The decline of the agricultural sector, a growing service economy, and the depopulation of rural areas are not unique to Granada. Nor are the degradation of rivers and their subjection to the urban water/energy supply and drainage. Still, residents perceive a threat to the 'palimpsestic' ecological and historical value of the region. As an agroecosystem, the *vega* is shaped by a model of irrigated agriculture brought to the Iberian Peninsula in the 8th century, combining crops and techniques from the Middle East and North African Arabian world. Fundamentally anthropogenic, the *vega* appears sturdy and stable, but it is as fragile as Middle Eastern oases, requiring a constant flow of water through rivers and *acequias*, distributing seeds, minerals, and sediments across its vast agricultural territory, as well as recharging the aquifer beneath the plain. It is for this reason that an old Granadino inhabitant described the *vega* as "nothing more than water moving." This water supply is under tremendous pressure. Intensive monocultures accompany the commercialization of traditional subsistence agriculture, and the 'modernization' of peasant livelihoods. This is guided by the logics of efficiency and high-productivity, and urbanization has radically transformed people's relationships with land, rivers, and waterways. It has also led to a more 'individualistic' relationship with the territory and, consequently, to the gradual disappearance of the commons.

In response to these transformations, local residents have mobilized to form collectives. In April 2023, neighbors from Monachil formed *La nieve no es de naide*, a group denouncing the expansion of the ski resort. A few months later, *Que corra el agua* formed in the neighboring municipality of Dílar to organize against the expansion, supporting traditional irrigation systems, the 're-naturalization' of the Yeguas Lagoon and the defense of common waters. The activist phrase "water for life" refers to using flows once again to irrigate the rich agroecosystem of the fertile plain of the *vega* and its orchards. Activist groups claim the water is 'mistreated' to support the ski resort's profit motivation as a capitalist business. An activist expressed this as a concern that authorities

actively plan the desertification of their land: "They need the water that reproduces our lives to produce their capital. But we ask ourselves over and over: What will we do?"

4. Reclaiming a tethered life

There is a black-and-white photo of the Yeguas Lagoon taken just before 1986, when it was turned into a reservoir to supply the ski resort. The tentacle-shaped lines extending from the lagoon towards the *vega* are, imprecisely, the source of the Dílar river. We display this and other photos above the tables set up for a mapping event at the Dílar Plaza. Of all the images, the participants linger on this one the longest. When the trucks and machinery arrived to pave the lagoon's bottom, the streams that drained from the highly sensitive *borreguiles* to feed into the river were severed. The asphalt and concrete layers, once poured and solidified, function by hardening into a dense, impervious surface that alters the flows of matter, energy, and nutrients across the mountain. "This is no longer a lagoon, it's a reservoir, an ex-lagoon, if you like.", Blas from *Que corra el agua*, remarked as he gazed at the photo. The rupture here is very palpable: the lagoon, some decades ago vibrant with movement and lively connections, now beneath a layered wall of cement.¹² A few meters further on, the Monachil River is piped underground for the first few kilometers: "We can't even find a photo of where the river is born," Cristina from *La Nieve no es de Naide* tells us, linking these disruptions in the lifecycle of rivers to the ski resort.

These fractures, visible in the hydrogeological materiality of the source of the rivers, operate as a hardening infrastructure, a barrier that partly prevents burgeoning water from flowing down. But beyond the rivers' courses, these hardening fractures find their mirroring in people's everyday life downstream, in the many disruptions they describe not as elements 'in conflict' but as relations – social, material, affective, symbolic – that have been ongoingly broken apart. These include the communitarian bond in post-industrial Spain; the bond between the mountain, city, and *vega*; the bond between the river and the *acequias*; the bond between the upper and lower basins of the rivers, the intergenerational handover in the rural world, the bond among non-irrigators and members of the irrigators' communities, the bond between *forasteros* and *los del pueblo* (locals), and the bond between people and the waters that sustain their life. Fractures become hardenings through the 'scandalous' sociopolitical and economic forces that reinforce and sharpen divides: fences, highways, and gated communities are substituting communal infrastructures such as fountains, *acequias*, mills, and 'agricultural roads' in the *vega*, while sociopolitical divides run deeper and deeper. Olive trees – traditionally a *secano* (non-irrigated drylands) crop – offer a bleaker illustration of such socioecological ruptures: centuries-old trees are uprooted to plant them closer together in large-scale mono-crops, facilitating mechanization, and intensifying production with 'modernizing' drip-irrigation.

According to activists, urbanization has introduced an "alien" neoliberal logic that has fragmented the *vega*, fostering an affective atmosphere of isolation, and promoting the privatization and commoditization of many aspects of life. This logic undermines the communal practices and infrastructures they are defending: everyday water infrastructures and *oficios* (trades) have formed a living memory that 'has forced' people to be materially and symbolically close to the waters, but also to care for them collectively, with all the conflicts and tensions that this entails. Older people describe life in Dílar and Monachil as shaped by close social relationships and *vecinazgo* (neighborliness). The latter have gradually eroded as 'the countryside' progressively moves to 'the city', but also as 'the city'

¹² The glacial lagoon was 'destroyed' in 1976, and then again in 1992, when the entire bottom and walls were cemented preventing any water from leaking out. Therefore, the activists demand to 're-naturalize' the lagoon, removing the material from the two large walls and the cemented bottom.

lands heavily on the countryside. Older neighbours recall when *acequias* (Figure 3) were vital communal resources. With the introduction of piped and bottled drinking water, the relationship broke, as people no longer needed to take care of them to drink water, relegating their maintenance and caretaking to irrigators, and progressively conceiving them as drains.

Cristina feels these ruptures as an everyday, embodied presence. When she goes to a restaurant and is offered bottled water, she is startled by the normalized "embodied logic that took hold of people in Spain, now thinking that water is something you buy, when before we all took care of water." These fractures have solidified into sociomaterial hardenings, barriers that impede the flows connecting the lifecycles of rivers and people. Just like the water in our bodies, she tells us, we must think what is obstructing the flow. This bodily awareness has propelled her and other activists to cultivate a politics of care with the following unwritten principles:

1. Life is interdependent. If you ask what sustains life in this region, you'll find yourself turning to rivers, *acequias*, and food, and to those who provide and care for them.
2. Rivers, like the human and non-human bodies that depend on them, are vulnerable and finite; they require care to maintain a healthy metabolism.
3. None of this can happen in isolation. Only as a collective. Social fractures and polarization are thwarting communal care to thrive.

Both collectives draw inspiration from ecofeminist and degrowth scholarship, and anarchist praxis. Notions like mutual aid are part of their political imaginary, from their experiences as educators, dancers, and community organizers. We also noticed that their understanding of a politics of care emerges from the riverine territory itself: from walking around the *acequias* and mountains, tending to crops, and learning with plants, even if only by stealing a few hours from their salaried jobs. We observed that their politics are embedded in their fragmented lives, and the embodied knowledge that emerges between their activities informs their strategies to counter the ski resort, agro-industry and urban sprawl in the *vega*. They want human and more-than-human inhabitants of the watersheds to have the possibility of, in their words, "*una vida vinculada*" (a tethered life). As Cristina puts it,

The snow that becomes water that becomes the fertility of the *vega* returns in the shape of food. We used to care for these bonds altogether. But now everything is cemented, everything is broken.

Cristina suggests that cement functions as a literal barrier to the circulation of life-sustaining flows, and as a metaphor for the severing of ecological interconnectedness and the hardening of sociopolitical divides. Activists acknowledge the challenges of halting the logic that commoditizes water. Yet, denouncing and criticizing the socioeconomic forces materialized in the ski resort is not enough. Thus, the collectives' actions are mostly aimed at restoring the ruptured bonds of these river-worlds guided by a politics of care, fostering spaces where the ever-complex and multiple 'realities of water' can meet, and, as will be seen, permeate each other. In this sense, making rivers a "matter of care" requires attention and hydrosolidarities (Loopmans & Hoogesteger, 2024; Arbeláez-Trujillo & Cuevas Parra, 2025), not just as an ethical stance, but as an ongoing relational practice.



Figure 3: Dilar river *acequias* running down to the *vega* of Granada.

Who are the caretakers?

When we meet Pedro, a middle-aged traditional irrigator, near the mouth of the Dilar river, he tells us he is part of a centuries-long legacy of people observing, planting, and listening to the rivers of the *vega*: "It is quite simple, the people of Granada owe everything to the rivers and the farmers that learned how to live with them. Life – not only human – has been supported by the cultivation of food." Yet, he continues, his voice turning grim while describing people from the city that now go cycling or running with their families in the place where he keeps his orchard: "They don't greet me because they don't *see* me. They don't see any of *this*."

Rivers and *acequias* constitute the lifelines of the historical irrigation systems of these rural communities. In Spain, irrigator communities are often portrayed as homogeneous, underdeveloped, selfish, ignorant, conservative, and overly masculine. These accusations hinder the appreciation of the communal traditional irrigation systems rooted in centuries-old *repartos de agua* (water allocations) – a river-world where water is not a commodity but a relational entity entangled with people in a web of histories, food, obligations, gifts, labors, knowledge, and dependencies. This situation has led irrigators like Pedro to feel that their concerns, their understanding of waters, and they themselves are invisible to people who now walk along the river, who value the water flow as a recreational space or as background for personal enjoyment.

Rendering invisible is deepened by the dominant model of environmentalism based on modern imaginaries that assign fixed meanings to the past, the present, and their unfolding towards progress-oriented futures without questioning social hierarchies and injustices (Bresnihan & Millner, 2023; Hoogesteger *et al.*, 2023; Ferdinand, 2022). This form of modern environmentalism proceeds from and reinforces an apolitical understanding of ecology and 'nature' (Ferdinand, 2022). Pedro recounts how local farmers, once considered caretakers of the land, *acequias*, and rivers, now seem to inhabit a fracture that is at odds with urban inhabitants and conservationist groups that prioritize the minimum ecological flow of the river, even if it means cutting off water for the *acequias*. Some irrigators contest the meaning of "environmentalism" by stressing the ecological knowledge embedded in their farming practices. They say: "Environmentalists were those who maintained the river, the paths, the *acequias* for centuries with a hoe always on their backs." Their manifesto, "Yes to the Vega!" was written during the severe drought in Southern Spain in the summer 2023, when a representative of the Guadalquivir Hydrographic Confederation reportedly sealed the gate of the *acequia alta*, attributing

the decision to the abstract figure of "the environmentalists," and citing the need to maintain the presumably neutral notion of "minimum ecological flow" under the 2022-2027 Hydrological Plan.¹³ The almost mythical incident encapsulates the ongoing tensions of top-down water policies in the rural world, where the truth-claim that "there is less water" reinforces the long-standing conflict between environmentalism and agriculture. It also shows how the expert-driven and urban-centered water management paradigm mobilizes an abstracted understanding of rivers as 'only' water flows, sidelining alternative understandings, practices, and knowledge (Boelens *et al.*, 2016). The restriction of water for agriculture that summer enlarged "the wound that hurts them the most" as one activist described it. It hardened the boundaries of a sociomaterial and subjective fracture: the *acequias* as irrigation infrastructures rather than as constitutive elements of the rivers; and the irrigators as 'enemies' of environmentalists and rivers instead of their caretakers.

Activists contest the unfair blame placed on small-scale irrigators for the mistreatment and waste of water. They argue that it is possible to respect both the minimum ecological flows of rivers *and* the traditional rights of farmers to irrigate. They assert that snow, rivers, *acequias*, and the plants they irrigate constitute an inseparable living cycle; an interconnected web of life that bridges nature-human modern dichotomies. And they remained critical of how all forms of irrigation, regardless of scope or scale, were often conflated. As María put it: "*Acequias* are not just for agriculture. They also keep the mountain and everything around them supplied with water. We want to keep planting our orchards *and* we want the mountains to be well and alive. You *can* be an environmentalist *and* sow." This counter-narrative challenges dominant environmental paradigms and re-orders hydrosocial boundaries and values. Through such re-orientation, the collectives reframe river-*acequias* as sites not only of ecological importance but of collective politics, where relational understandings of water, land, and socioecological life converge. In doing so, they enact an understanding of river-*acequias* that have no pre-given onto-epistemic boundaries, but that "are affected by collective politics and positionalities that constantly have to confront and put into question the boundaries and cuts given in existing worlds" (Puig de la Bellacasa, 2017, p. 72).

Among water managers and mainstream environmentalists, these frameworks have systematically ignored the manifold types, scopes, and scales of agricultural practices, as well as the languages of valuation, emotions, and lifeworlds – such as Pedro's agroecological systems, with small plots, rotating patterns, flood irrigation, and manure-fertilization. Pedro suggests that within neoliberal logics and efficiency narratives, such practices are difficult to perceive, let alone value. Yet, traditional irrigation systems are active participants in the socioecological assemblage of the *vega's* agroecosystem. The *acequias*, for instance, do much more than channel water: they recharge the aquifer, hold soils together, generate habitat for biodiversity, and knit together communities, techniques and communal governance (Martin Civantos *et al.*, 2022). Pedro and other small-scale farmers are allying with academics to proclaim their agricultural heritage as "Asset of Cultural Interest" to underpin their lived understanding of agriculture as an ecological activity, whose intangible dimensions – socio-historical, emotional, cultural – are just as relevant as its techno-hydraulic aspects (Burón, 2024; Castillo, 2014). He talks about threatened *acequeros* (traditional irrigators), *riego a manta* (flood irrigation), *bancales* (terraces), and mills – all sociomaterial infrastructure that is rendered 'more than matter,' in his way of explaining, and defending traditional irrigation systems can be a way of caring for the territory. His reflection illuminates how these things

¹³ Critical perspectives on minimum ecological flow policies argue that these rely too much on anthropocentric rational-calculative parameters. They are also insufficient for engaging with complex socioecological systems because they ignore river-specific ecological needs, and factors essential for river health beyond hydrology (see García & González, 2019).

'come to matter' in highly uneven and political ways. In other words, Pedro's perspective on the situation underscores how notions such as 'environmental' and 'care' are shaped not by neutral good-hearted intentions, but by relations of power (Puig de la Bellacasa, 2017). Drawing speculative connections, Pedro wondered: What if growing food were the first gesture of river care? How might rural livelihoods reach and affect those – city-dwellers, planners, politicians – who do not realize their dependence on them? Could people, he seemed to ask, learn to become permeable to the grief, the cultivation techniques, the tomato seeds, and the childhood memories he carries?

5. Learning to become permeable

A river is also an entanglement of *acequias*,
 a living archive of collective memories,
 a former lagoon, a wound, a plant world,
 a mass of underground water,
 a tapestry of feelings, a fish, a zucchini,
 an artichoke *huerta*, so much knowledge, so many stories.
Que corra el agua Event Report

Towards permeable rivers

After a long walk along the humid and rugged path of the *acequia alta* of Dilar, we stop in front of what seems to us an orderly pile of soil, rocks, roots, and shrubs. The continual flow of water along the *acequia* has guided the way. It was here where Pablo offered us the idea of permeability to think with, to care for these rivers. He often struggles between categories that seem insufficient, as if imprisoned in a dichotomous world where he is forced to choose a side.

This soil, these *bancales* (terraces), these *acequias* are all artificial, you could say, 'anthropogenic' and, as environmentalists, many struggle to grant ecological value to that which was made and maintained by humans.

he says, while trying to strike a balance with his hands, a fragile equilibrium between two worlds that seem to be at odds.

Yet, I stand with small-scale agriculture that has historically cared for the rivers because I wonder: does nature exist if no one prays to her? If no one cares for her, does a forest live? Does a language live if no one speaks it? Does a river live if no one cares for her?

Still sitting, Pablo raises our attention to all the acute observation, listening, and studying that is embedded in this apparently abandoned *acequia*. Water continues to flow while also subtly permeating underground. "There is no structure that supports the passage of water unaffected," Pablo tells us while we reach with our hands to the fractured bottom. He has a way of enclosing little truths in sentences that seem like aphorisms. We reach the gate of the *acequia* just before water flows into an orchard of orange trees, pomegranates, and *membrillos* (quinces). He asks us to:

Consider the collective intelligence that enabled water to reach every inch of this *vega* for centuries. It may look flat, but it has a slight slope, so water reaches everywhere. The river descending from the mountains, fruit trees on orchard edges, microorganisms in the *acequias*, farmers working the land, aquifers recharging. A cyclical system that has been broken because the people of the *vega* were made to feel ashamed. Ashamed of *adobe* and *tapial* (rammed earth). Changing it for steel because of shame. To become modern, going from cobblestone to cement. Escaping from the dependence on agriculture; that is modernity here.

Stressing how shame is interwoven with the sociomaterial relations of rivers, Pablo's words and gestures attempt to grasp the 'invisible' interplay of emotions, labor, water, materiality, and memory at stake in the so-called modernization of the rural world. Through his words, the emotional ties and value systems embedded in the river-*acequias* network – grief, awe, loss – appear inseparable from the material waterflows.

Such modernization of the rural world emerges as an affective regime of fixity that disciplines the boundaries of infrastructures, labor, ideologies, and emotions. In this framing, the world of environmentalism shaped by modern environmental imaginaries that inherited the devaluation of rural lifeways seems increasingly less concerned about the world of land, agriculture, and food (Bresnihan & Millner, 2023). One can see this divide manifest in this region at the boundary where the river's edge transitions into the *acequia's* course. Paradoxically, water becomes strained between these alleged binary rigidities, dividing rather than uniting. Rooted in technocratic imaginaries, the care for river water by modern environmentalism as an abstract measurable entity is privileged over the agro-ecological knowledge and emotional-labor ecologies that have long sustained this riverine agroecosystem, replicating the modern dictates of purity, separation, and enclosure. The *vega* tells a different story. If one observes the workings of river-*acequias* – hereafter understood as a singular hydrosocial assemblage (Reyes-Escate *et al.*, 2022) – they reveal permeable membranes. Just like living cells, they facilitate the flow and seeping through of water, nutrients, emotions, and labor, signaling a relational ontology of permeability. Refusing the fantasy of impervious borders, another activist explained how "acequias *are* the river," insisting on the affective and co-constituted watery entanglements of the *vega* "from the snow *through* the orchards to the table." For Pablo, understanding the river as a living organism with *acequias* as arms or veins that stretch throughout the *vega* leads him to think not from a logic of 'modern' enclosure but from one of permeability that recognizes the interdependence of humans and non-humans and the potential for mutual affectation, sustenance, and care.

Permeability allows for ethico-political imaginaries to seep between binaries, even if not dissolving them entirely. Bodies and doings activate as 'passages' (Neimanis, 2017) where multiple lifeways and livelihoods learn to live together – or, if denied the possibility of 'a tethered life', reclaiming the possibility. In learning to perceive the "previously neglected worlds" (Puig de la Bellacasa, 2017) of river-*acequias*, members of the collectives are shaping their activism through an embodied re-orientation of what matters, and therefore what constitutes 'good care.' For some activists, getting closer to the river-*acequias* involves attending to the "agential and affective participation of nonhumans" (Puig de la Bellacasa, 2017) in the shaping and reshaping of this rural riverine territory. They often noted how the material force of water flowing through the river-*acequias*, and the collective sharing of their 'generosity,' had affected and shaped 'everything': orchards, *molinos* (mills), people, animals, plants, seeds, and sediments. These activists call for a broader, more permeable, understanding of these rivers that recognizes that the elements that constitute these river-worlds are separated by a membrane that "is not a divisive barrier, but an

interval of passage: solid enough to differentiate, but permeable enough to facilitate exchange" (Neimanis, 2017, p. 98).

Learning to relate with these rivers through their permeability with the *acequias* has meant re-valuing them as "arteries of common life." It acknowledges how traditional irrigation systems have been managed communally for centuries, and this recognizes the solidarity and affective attachments mediated and afforded through these sociomaterial infrastructures (Hommes *et al.*, 2022; Martín Civantos *et al.*, 2022). This re-evaluation illuminates the cultural heritage and living memory embedded in the *acequias* and their caretakers: the non-material values that activists seek to express through an 'otherwise' language of valuation (Martínez-Alier, 2002). This is a language that includes shared memories, emotions, symbols, and practices that have sustained both the land and the rural communities for centuries. "Andalusia has no value, they are *empty* lands for the powerful," Blas said while explaining what happens when disregarding such 'intangible' realms. "That is how it is handled in discourse, and then, in the material realities, they fill these *emptied* lands with projects, massive wind and solar parks, the ski resort, and bottling up water. This happens because it is assumed to be an empty land." As Antonio, another activist from Dílar, pointed out after reviewing an early draft of this article: "Disconnecting the *acequias* from the river is to break the permeability of the river-world in order to appropriate its exchange value in the market."

Unfolding permeable understandings of care

Permeability reimagines boundaries as shifting, partially open, and even as sites for transforming dominant paradigms. What can this figuration enable us to see about the strategies of activists who operate amidst fractures and hardenings? Just as the *acequias* afford the thin channel of water flowing towards the orchards while simultaneously allowing it to permeate into the aquifer of the *vega*, the activists attempt to navigate the fractures between entrenched, binary modern imaginaries and rigid categories that define their relationships to rivers either as irrigators *or* environmentalists, as if they were mutually exclusive or irreconcilable. "We are still learning, there are so many things we don't know", was a refrain we heard constantly during our fieldwork. This humility in their knowledge of the river-worlds underpins how activists contest dominant environmental assumptions, allowing them to permeate their ecological predicaments with broader ethico-political concerns. These include addressing urban-rural historical inequalities, as well as the consequent dismissal, 'emptying', and delegitimization of the rural world.

Thus, the meetings and events organized by the collectives aim to bring together the many realities of water based on the premise that listening to the "unseen and muted" world of irrigators and people who have lived with rivers is essential. Like Pablo, members of the collectives reject the rigid categories that attempt to place their concern for the rivers within an either/or ontological-epistemic organization. Instead, the notion of permeability better embraces the complexity of the 'fractured' riverine lifecycle that these activities are attempting to re-tether. This lifecycle is a dynamic web of interconnected elements – snow, lagoons, waterflows, *acequias*, sediments, rocks, aquifers, mills, plants, fields, animals, microorganisms, irrigators, activists, neighbors – that "modulate each other." These elements cannot be understood 'on their own' but in their mutual co-constitution, and, just like water, as they seep through each other. "It is not that we are all in complete agreement," said a hopeful activist, "it is that little by little we have to reach and affect each other." We came to understand permeability in the context of these rivers as the relational capacity of bodies and categories to allow not only the physical seeping of water, but also the flow of affective experiences, stories, and concerns across seemingly hardened boundaries – overflowing the 'material' notion of permeability.

Learning to become permeable is daunting. This is why the activists generate tactical alliances with irrigators, academia, artists, and everyday concerned citizens to stop the expansion of the ski resort. But their actions are mostly directed at regaining or newly building a common horizon of interdependence that, without resolving or erasing differences, allows them to permeate each other, and recover "a tethered life." For this, they employ a wide array of strategies that range from everyday practices to concerted legal action (Arbeláez-Trujillo *et al.*, 2025). These include: historical research and interviewing elders to unearth the region's long agroecological legacy; denouncing the ski resort's operations on social media; engaging in solidarity economy networks and community gardens; and producing counter-knowledge to build their legal case. They also reach out to other environmental activists and researchers on regional, national, and international scales to build alliances (e.g. advocating in the European Parliament); hold weekly open assemblies; distribute leaflets; showcase public protest banners and film screenings; and organize mapping events and riverwalks.

Taken together, these actions reflect a kind of activism that seeks to foster a re-tethering and a sense of collective response-ability assumed by a wider, intergenerational community beyond individual, expert or technocratic stewardship. An everyday environmental politics grounded in permeability: the refusal of rigid separations between urban and rural, local and foreigner, human and nonhuman, traditional and modern, science and narrative. In this river-world, rivers and *acequias* emerge as biophysical, socio-political, affective, narrative-epistemic, and cultural assemblages with no pre-fixed boundaries. What might appear as small-scale, local or even "non-environmental" practices – like leafleting, or learning to interpret hydrological maps – are "tinkering" acts of care (Mol & Hardon, 2021) that reimagine environmentalism amid a 'scandalous' landscape because they enact and embody an otherwise river-world altogether.

Throughout our fieldwork, we listened to activists recount this journey, oscillating between confrontation and commoning, as a 'learning' one, retelling how they 'approached' the irrigators and gradually absorbed the historical realities behind traditional irrigation systems and rural Andalusia. What perhaps began as a technical or historical inquiry, has revealed itself to be an unexpected 'closeness' to rural lifeways imbued with lessons, especially for the participants that were urban dwellers. In turn, some irrigators appreciated that the collectives stepped beyond agricultural agendas aimed to 'modernize' their water use, bridging what, once again, often felt like impermeable divides between 'outsider' activists and local lifeworlds. Although awkward, scattered, and potentially tense, these activities and interactions have slowly created a permeable infrastructure where knowledge, values, and emotions flow across boundaries. By being willing to 'approach' other(ed) social actors through their activities, activists create and move towards an 'in between' zone not to dominate the irrigators, but to listen and learn, enabling temporal alliances, allowing themselves to be transformed, and showing that care for the rivers is inseparable from care for agricultural communities and the defense of irrigation systems. In contrast, we spoke with a group of conservation environmentalists who are not part of the collectives with whom we cooperated and whose work focuses on the lower basin of the Dílar river. In our interactions, they expressed unequivocal propositions of what 'the irrigators' think or value, yet admitted to never reaching out to speak with them.

Recognizing the permeable boundaries among the selves, bodies, and environment composing these river-worlds (Puig de la Bellacasa, 2017) has led these activists to acknowledge and defend the 'invisible' threads threatened by the actions in the summer of 2023 to close the gate of the *acequia alta* to protect river flow. As María stated: "By closing off the *acequias* they interrupted the lifecycle of the river: The food, the animals, the river, the forest. The connections must be drawn over and over. The irrigators know all of this is part of a whole." We saw this more clearly during a river walk in Dílar with 70 local people – guided by a hydrologist, a historian, a botanist, the president of the irrigator communities, an older agrarian activist, and young researchers – where participants walked

along river-*acequias*, ruins of mills and orchards, to learn not only about waterways, but about how waters also journey through infrastructures, memories, food, recipes, and daily lives (Figure 4). Through these activities the collectives are not only generating alternative forms of environmental knowledge production and exchange that emerge from convening diverse lived experiences. Bringing together a constellation of elements, beings, affective relations, and memories that matter to farmers, the local people, activists and *forasteros* are configuring a collective 'tethering force.' Amid the few stones left of ancient mills, we could feel how the walk – the sensing together, the smells, the recognition of plants, the drinking water from the spring – opened a permeable zone, where people could slip into each other's worlds across rich and messy differences. Care, as a "distributive force between a multiplicity of agencies and matters" (Puig de la Bellacasa, 2017), was expressed in these activities not as the construction of a single unified framework or river understanding, shared and agreed upon by all, but as a permeable infrastructure through which the realities of water might meet each other, circulate, seep, leak, and slowly become affected.



Figure 4: Snippets from the river-walk "From the snow to the table, let the water run!"

Staying with the trouble: Allowing for permeable (dis)encounters

Despite limited temporal, technical, and financial resources, members of these collectives engage often in these actions from an improvised, yet intentional search for creating instances for becoming permeable without much clarity. Hence, the challenges they face are numerous and difficult to grasp. Yet, we observed how, after each activity, the challenges catalyzed thoughtful discussions on their roles within the hydrosocial dynamics of the territory. Some of the conversations around care included a critique of patriarchal forms not only of predatory exploitation of a 'feminized nature', but also of the ways in which gender inequalities and unshared burdens cut across the dynamics of their collectives and their "masculine understanding of militant activism." Some women recounted the challenges of establishing relationships with older male members of irrigation communities to better understand water allocation practices. The permeability of boundaries – be they social, cultural, or ecological – does not dissolve or deactivate these power relations or the possibility of encountering conflicted and contradictory understandings. In fact, some founding members of the collectives decided to suspend their participation when they felt they had reached an unbridgeable disagreement around the aforementioned points. As other researchers working in contexts of high social polarization have shown, these activities are shaped by intense emotions, inchoate questions,

historical ruptures, and high stakes; yet, the main task remains to be alert to the unrealized possibilities of what is latent and not yet fully determined (Lyons, 2023; Tsing, 2015).

As entrenched power asymmetries in the region also determine who and what gets to permeate what, and to what extent, the deep-seated mistrust towards outsiders from local inhabitants, partially rooted in the collective memory of Franco's repression, also presents a significant challenge for activists' politics. Cristina noted this mistrust stems from a "deeply hurt and fearful social psyche" of a massacred Andalusia, but also from the affective layers of shame and silence imposed upon rural areas during and after the dictatorship. Because of this, the mere mention of the word 'environmentalist' can ignite a sensitive situation among the irrigators and older generations, and the activists deliberately refrain from identifying with that label. For activists, ecological considerations are also permeated by these broader historical and political considerations, leading them to reimagine political engagement as a solidarity gesture of "reaching out to the other." However, in an effort to avoid idealizing a static, traditional rural world, many activists recognize that the 'recovery' of this ecological memory must also account for the blurring boundary between what are considered traditional or small-scale agricultural practices, and rapidly-growing 'modernizing' ones. This boundary is increasingly difficult to define, not only because of the onslaught of 'Green Revolution' modernization and agro-industrialization in the region, but also because the livelihoods of farmers, like those people who own orchards, are increasingly dependent on urban dynamics and market pressures, and no longer sustain themselves solely through agriculture.

People in Dílar and Monachil – such as those whose livelihoods depend on the ski resort economy – often occupy more precarious socioeconomic positions. This precarity, combined with overburdened livelihoods, limits their capacity or willingness to 'open themselves' to the river-worlds enacted by the activists. In some cases, the aforementioned violence of the Franco dictatorship may also explain a reluctance to expose or share their worlds to 'be permeated' as a protective gesture rooted in historical wounds. Still, what we observed in the practices of these collectives were instances of 'permeable' care – a relational, affective, and political re-tethering force – between activists, irrigators, and some older residents. This permeability did not extend to the hydrocracies that are managing water infrastructures, and even less so to CETURSA. The latter have remained largely closed to activists' demands for transparency and accountability. In this context, permeability as an environmental caring politics emerges as a deeply political, yet uneven, practice, shaped by historical inequalities and deeply entrenched institutional power.

6. Conclusion: towards permeable river-worlds

Thinking with these rivers through their permeable membranes illuminates the multiple dimensions in which matter, energy, lifeworlds, emotions, and meanings expand and seep into one another. These dimensions include those between the river and the *acequias*, between the territory and the intangible memory of the rural world, between divergent social actors, and between the rivers and the human and more-than-human bodies that inhabit them. By dis-orienting the binary coordinates and logics of valuation embedded in modernity's hydraulic paradigm, activists along the Dílar and Monachil rivers enact a form of permeability that intertwines ecological concerns with the living memory of agrarian life in Granada's *vega* agroecosystems. Their everyday activism unfolds through small, iterative gestures of mutual care – a thinking-doing-feeling together practice – that navigates, disrupts, and refigures dominant environmental and water management imaginaries.

In these practices, boundaries become sites of encounter, exchange, and potential transformation. As activists learn and render visible the material and affective interdependencies that sustain life in these river basins, they attempt to hold together long-fractured, and at times, conflicting, lifeways. Through riverwalks, protests, mapping, assemblies, and daily chores and conversations, they cultivate forms of relationality to build what might be described as a caring infrastructure grounded in the seemingly simple acts of "talking with the neighbor," "getting closer," "finding an in between," across hardened lines of difference. This infrastructure, we argue, enacts a permeable river-world in the context of social polarization, impervious borders, and contested water scarcity, where activists see as a "life-sustaining necessity" to learn to live together amidst disagreements, inequities, and 'scandalous things.' This does not imply striving for a unified vision of rivers or a singular definition of what constitutes their 'good care,' nor to fully eliminate disagreements. It is precisely because of the dispute over what might constitute care – either from a narrow perspective that privileges the river as a measurable waterflow where irrigators are excluded from caretaking, or from a relational permeable approach – that activists embrace the idea that within diverse and sometimes irreconcilable river-worlds lie the conditions for mutual affectation. The activists aim to acknowledge that within diverse lived experiences and lifeworlds lies the possibility of taking seriously and affecting each other through seemingly irreconcilable fractures. They hold an ethical willingness to be changed by one another and, therefore, to engage in a collective response-ability for shared river-worlds. This approach challenges dominant paradigms of environmental governance by refusing to sidestep the political dilemmas of engaging with power imbalances and hierarchies inherent in socioecological systems, by embracing the politics of difference, and by engaging with them through ongoing, situated, and unfinished acts of care. This reconfigures the coordinates of their ethico-political imaginaries (emotions, value systems, ideas, practices) while becoming increasingly entangled in the rivers' complexities.

The ethico-political lens of care foregrounds the interdependent and contingent nature of river-worlds. It is attentive to how boundaries – social, political, material, and onto-epistemic – are hardened through modern/colonial histories of dispossession and depoliticized technocratic abstraction. It is also attentive to how cement, fences, and bottled water, for example, are everyday 'things' fraught with sociopolitical visions of hardened separations and impermeability that shape people's understanding of waters, boundaries, and themselves. The collectives resisting the expansion of the ski resort and the river grabbing infrastructures are not responding to these hardenings by 'cementing' their 'corresponding' positions, but by reclaiming the inseparability between the river and the *acequias* – and consequentially between their concerns for the rivers and the rural world. These ties are rooted in centuries-long socio-ecological relationships of mutual transformation, interdependence, knowledge production, and affective-material labor. Attention to these relationships forms the basis for a permeable politics of care that is grounded in shared vulnerability, difference, and response-ability. What is at stake in this re-arranged 'attention' to "the unseen and muted" lifeworlds and the forces tethering people to their rivers, and how a constellation of interdependent activities and vital processes are re-oriented, is always already unfinished (Navarro & Gutiérrez, 2018). Asserting this process as an open-ended ethics-politics means that 'meeting each other' does not emerge from or results in a premeditated, agreed upon, or universalized political horizon. The activists' efforts to foster space to care for the rivers involve walking slowly towards a 'situated horizon' where a tethered life is rendered possible amidst so many ruptures. A permeable caring horizon, so to speak, that expands, shifts, and affords slightly better possible futures with the Dílar and Monachil river-worlds as inquiries, things, emotions, and stories seep through them. This environmentalism beyond binaries is hesitant, messy and affectively entangled.

The Dílar and Monachil river struggles show that thinking care through permeability allows us to reframe environmental activism as an open-ended practice of relation-making across fractured and unequal sociopolitical terrains, particularly in contexts of increasing water scarcity and polarized, conflicting water users. It enables us to see and live with rivers not as bounded water resources to be managed, but as relational living assemblages in which the boundaries between human and more-than-human, nature and human-made infrastructures, tradition and modernity, are continually reshaped and redefined. The activists' attention to what seeps through socioecological fractures – be it snowmelt, memory, food, or stories – suggests that water governance might begin with the leaks that refuse the capture of modern binaries, polarizations, and hardened divides, enacting permeable river-worlds and opening otherwise ethico-political possibilities.

References

- AEMET (2024). State of the Climate Report certifies 2023 as the second warmest year since 1961. Last modified May 22, 2024.
- Arbeláez-Trujillo, A. M., & Forigua-Sandoval, J. (2023). Azudes along the Serpis river: Cultural heritage, obstacles, and contested authority. *Blue Papers*, 2(2). <https://doi.org/10.58981/bluepapers.2023.2.11>
- Arbeláez-Trujillo, A. M., Cuevas Parra, C., & Aguilar-Soto, M. (2025). Artificial snow and dry river-Acequias: Contesting the legal geography of river grabbing in the Dílar and Monachil Rivers, Spain. (Unpublished manuscript)
- Arbeláez-Trujillo, A. M. & Cuevas Parra, C. (2025). Weaving across rivers: activist-research and hydrosolidarities for river defense and care (Unpublished manuscript)
- Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.
- Boelens, R., Hoogesteger, J., Swyngedouw, E., Vos, J., & Wester, P. (2016). Hydrosocial territories: a political ecology perspective. *Water International*, 41(1), 1–14. <https://doi.org/10.1080/02508060.2016.1134898>
- Boelens, R., Escobar, A., Bakker, K., Hommes, L., Swyngedouw, E., Hogenboom, B., & Wantzen, K. M. (2022). Riverhood: political ecologies of socionature commoning and translocal struggles for water justice. *The Journal of Peasant Studies*, 50(3), 1125–1156. <https://doi.org/10.1080/03066150.2022.2120810>
- Bosworth, K. (2017). Thinking permeable matter through feminist geophilosophy: Environmental knowledge controversy and the materiality of hydrogeologic processes. *Environment and Planning: Society and Space*, 35(1), 21–37. <https://doi.org/10.1177/02637758166660353>
- Bresnihan, P., & Millner, N. (2023). *All we want is the earth: Land, labour and movements beyond environmentalism*. Bristol University Press.
- Burón Villafañe, B. (2024) Informe para puesta en valor y justificación de incoación de expediente para la declaración BIC de las acequias alta, baja, del Candil y de la isla de Dílar, Granada. Bachelor's Thesis. University of Granada.
- Castillo Ruiz, J. (2014). Cultivando el agua: Valoración y protección de los sistemas históricos de riego: el caso de la Vega de Granada. In M. M. Lozano Bartolozzi & V. Méndez Hernán (Eds.), *Patrimonio cultural vinculado al agua*. (pp. 301-320). Editorial Regional de Extremadura.
- Cuevas Parra, C. & German, J. (2025) *Film: Toda agua abriga un mundo / No water comes without a world*. Engagement. <https://aesengagement.wordpress.com/2025/09/27/film-toda-agua>

- Dave, N. N. (2011). Activism as ethical practice: Queer politics in contemporary India. *Cultural Dynamics*, 23(1), 3–20. <https://doi.org/10.1177/0921374011403351>
- de Jong, C., Lawler, D., & Essery, R. (2009). Mountain hydroclimatology and snow seasonality: Perspectives on climate impacts, snow seasonality and hydrological change in mountain environments. *Hydrological Processes*, 23(7), 955–961. <https://onlinelibrary.wiley.com/doi/pdf/10.1002/hyp.7193>
- de la Cadena, M. (2015). *Earth beings: Ecologies of practice across Andean worlds*. Duke University Press.
- de Souza, D. T., Hommes, L., Wals, A., Hoogesteger, J., Boelens, R., Duarte-Abadía, B., ... & Joy, K. J. (2024). River co-learning arenas: Principles and practices for transdisciplinary knowledge co-creation and multi-scalar (inter)action. *Local Environment*, 30(1), 58–80. <https://doi.org/10.1080/13549839.2024.2428215>
- del Moral Ituarte, L., Cabello, V., Hernandez-Mora, N., Corominas, J. & La Calle, A. (2024). Agua, agricultura, mundo rural: Desigualdad y transición justa. *Pensamiento al margen. Revista Digital de Ideas Políticas*, 20, 41–66. <https://dialnet.unirioja.es/servlet/articulo?codigo=9998159>
- Di Giminiani, P. (2022). The limits of care: Vitality, enchantment, and emergent environmental ethics among the Mapuche people. *Environmental Humanities*, 14(2), 419–437. <https://doi.org/10.1215/22011919-9712489>
- Domínguez-Guzmán, C., Verzijl, A., Zwarteveen, M., & Mol, A. (2022). Caring for water in northern Peru: On fragile infrastructures and the diverse work involved in irrigation. *Environment and Planning E: Nature and Space*, 5(4), 2153–2171. <https://doi.org/10.1177/25148486211052216>
- Duarte-Abadía, B., & Boelens, R. (2019). Colonizing rural waters: The politics of hydro-territorial transformation in the Guadalhorce Valley, Málaga, Spain. *Water International*, 44(2), 148–168. <https://doi.org/10.1080/02508060.2019.1578080>
- Escobar, A. (2016). Thinking-feeling with the Earth: Territorial struggles and the ontological dimension of the epistemologies of the South. *AIBR, Revista de Antropología Iberoamericana*, 11, 11–32. <https://www.redalyc.org/articulo.oa?id=62345164002>
- Ferdinand, M. (2022). *Decolonial ecology: Thinking from the Caribbean world*. Polity Press.
- Fisher, B., & Tronto, J. (1990). Toward a feminist theory of caring. In E. K. Abel & M. K. Nelson (Eds.), *Circles of care: Work and identity in women's lives* (pp. 36–54). SUNY Albany Press.
- García, D. & González, M. (2019). Los caudales ecológicos en España: ¿Restricción de usos o medida de restauración? Conference Presentation. III Congreso Ibérico de Restauración Fluvial Murcia.
- García-del-Amo, D., Mortyn, P.G. & Reyes-García, V. (2023). Local reports of climate change impacts in Sierra Nevada, Spain: Sociodemographic and geographical patterns. *Regional Environmental Change*, 23, 14. <https://doi.org/10.1007/s10113-022-01981-5>
- Liboiron, M., Tironi, M., & Calvillo, N. (2018). Toxic politics: Acting in a permanently polluted world. *Social Studies of Science*, 48(3), 331–349. <https://doi.org/10.1177/0306312718783087>
- Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies*, 14(3), 575–599. <https://doi.org/10.2307/3178066>
- Haraway, D. (2003). *The companion species manifesto*. Prickly Paradigm Press.
- Haraway, D. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.
- Harris, L. M. (2015). Hegemonic water and rethinking natures otherwise. In W. Harcourt, & I. Nelson, (Eds.), *Practicing feminist political ecologies* (pp. 157–181). Zed Books.

- Hernández-Mora, N., Cabello, V., De Stefano, L., & Del Moral, L. (2015). Networked water citizen organizations in Spain: Potential for transformation of existing power structures in water management. *Water Alternatives*, 8(2), 99-124. <https://www.water-alternatives.org/index.php/alldoc/articles/vol8/v8issue2/283-a8-2-6>
- Hombres, L. (2022). The ageing of infrastructure and ideologies: Contestations around dam removal in Spain. *Water Alternatives*, 15(3), 592-613. <https://www.water-alternatives.org/index.php/alldoc/articles/vol15/v15issue3/674-a15-3-3>
- Hombres, L., Hoogesteger, J., Boelens, R. (2022). (Re)making hydrosocial territories: Materializing and contesting imaginaries and subjectivities through hydraulic infrastructure. *Political Geography*, 97, 102698. <https://doi.org/10.1016/j.polgeo.2022.102698>
- Hoogesteger, J., Konijnenberg, V., Brackel, L., Kemink, S., Kusters, M., Meester, B., ... & Sanchis-Ibor, C. (2023). Imaginaries and the commons: Insights from irrigation modernization in Valencia, Spain. *International Journal of the Commons*, 17(1). <https://doi.org/10.5334/ijc.1216>
- Dossier (2023). "Sierra Nevada: A unique ecosystem" Unpublished.
- Loopmans, M., & Hoogesteger, J. (2024). Hydrosolidarity: A Socio-political reading of a moral concept. *Water Alternatives*, 17(3), 688-711. <https://www.water-alternatives.org/index.php/alldoc/articles/vol17/v17issue3/764-a17-3-6>
- Lopez-Gunn, E. (2009). Agua para todos: A new regionalist hydraulic paradigm in Spain. *Water Alternatives*, 2(3), 370–394. <https://www.water-alternatives.org/index.php/all-abs/66-a2-3-5>
- Lyons, K. (2023). Rivers and reconciliation: Elaborating the socioecological memory of war through Science and Arts-based practices. *Environmental Humanities*, 5(1), 141–163. <https://doi.org/10.1215/22011919-10216206>
- Martin Civantos, J. M., Toscano, M., Bonet García, M.T. y Correa Jiménez, E. (2022). Un mapa colaborativo para documentar y difundir los sistemas de regadíos históricos de Granada y Almería. *Revista PH*, 105, 12–14. <https://doi.org/10.33349/2022.105.5060>
- Martínez-Alier, J. (2002). *The environmentalism of the poor: A study of ecological conflicts and valuation*. Edward Elgar.
- Mol, A. (2002). *The body multiple: Ontology in medical practice*. Duke University Press.
- Mol, A. & Hardon, A. (2021). Caring. In J. R. Bowen *et al.* (Eds.), *Pragmatic inquiry: Critical concepts for the social sciences* (pp. 185-204). Routledge.
- Martínez-Fernández, J., Neto, S., Hernández-Mora, N., Del Moral, L. & La Roca, F. (2020). The role of the Water Framework Directive in the controversial transition of water policy paradigms in Spain and Portugal. *Water Alternatives*, 3(3), 556–581. <https://www.water-alternatives.org/index.php/alldoc/articles/vol13/v13issue3/596-a13-3-14>
- Murillo, J. (2023). *Comunalidad: Una política afectiva multiespecie*. Masters dissertation. Benemérita Universidad Autónoma de Puebla. BUAP Institutional Repository. <https://hdl.handle.net/20.500.12371/18639>
- Navarro, M. & Gutierrez, R. (2018). Claves para pensar la interdependencia desde la ecología y los feminismos. *Bajo el Volcán*, 18(28), 45–57. <https://www.redalyc.org/journal/286/28659183004/html/>
- Neimanis, A. (2017). *Bodies of water: Posthuman feminist phenomenology*. Bloomsbury Publishing.
- Pérez, A. (2019). *Subversión feminista de la economía. Aportes para un debate sobre el conflicto capital-vida*. Traficantes de Sueños.
- Puig de la Bellacasa, M. (2017). *Matters of care: Speculative ethics in more than human worlds*. University of Minnesota Press.

- Reyes-Escate, L., Hoogesteger, J., & Boelens, R. (2022). Water assemblages in hydrosocial territories: Connecting place, space, and time through the cultural-material signification of water in coastal Peru. *Geoforum*, 135, 61–70. <https://doi.org/10.1016/j.geoforum.2022.07.005>
- Roca-Servat, D., Arias-Henao, J. D. & Botero-Mesa, M. (2021). Decolonizing hegemonic approaches of water: Exploring Latin American proposals for communality and community. *Revista Ambiente Sociedade*, 24. <https://doi.org/10.1590/1809-4422asoc20200096r1vu2021L4TD>
- Singh, N. M. (2013). The affective labor of growing forests and the becoming of environmental subjects: Rethinking environmentality in Odisha, India. *Geoforum*, 47, 189–198. <https://doi.org/10.1016/j.geoforum.2013.01.010>
- Sultana, F. (2015). Emotional political ecology. In Bryant, R. (Ed). *The international handbook of political ecology*. Edward Elgar.
- Strang, V. (2014) Fluid consistencies: Material relationality in human engagements with water. *Archaeological Dialogues*. 21(2), 133-150. <https://doi.org/10.1017/S1380203814000130>
- 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. <https://doi.org/10.1111/0004-5608.00157>
- Tsing, A. (2015). *The mushroom at the end of the world: On the possibility of life in capitalist ruins*. Princeton University Press.
- Ungureanu, C., & Popartan, L.A. (2024). The green, green grass of the nation: A new far-right ecology in Spain. *Political Geography*, 108. 102953. <https://doi.org/10.1016/j.polgeo.2023.102953>
- Vos, J. (2024). River defence and restoration movements: A literature review. *Water Alternatives*, 17(2): 239–265. <https://www.water-alternatives.org/index.php/alldoc/articles/vol17/v17issue2/752-a17-2-10>
- Vogt, L. & Walsh, C. (2021). Parsing the politics of singular and multiple waters. *Water Alternatives*, 14(1): 1-11. <https://www.water-alternatives.org/index.php/alldoc/articles/vol14/v14issue1/614-a14-1-9>
- Walsh, C. (2015). Life, nature, and gender otherwise: Feminist reflections and provocations from the Andes. In W. Harcourt & I. Nelson (Eds.), *Practising feminist political ecologies* (pp. 34-47). Zed Books.
- Zwarteveen, M., & Boelens, R. (2014). Defining, researching and struggling for water justice: Some conceptual building blocks for research and action. *Water International*, 39(2), 143–158. <https://doi.org/10.1080/02508060.2014.891168>