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Blue Humanities

Serpil Oppermann

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BLUE HUMANITIES

*Storied Waterscapes
in the Anthropocene*

Serpil Oppermann
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Elements in Environmental Humanities

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Abstract: By drawing on oceanography (marine sciences) and limnology (freshwater sciences), social sciences, and the environmental humanities, the field of the blue humanities critically examines the planet's troubled seas and distressed freshwaters from various sociocultural, literary, historical, aesthetic, ethical, and theoretical perspectives. Since all waterscapes in the Anthropocene are overexploited and endangered sites, the field calls for transdisciplinary cooperation and encourages thinking with water and thinking together beyond the conventions of tentacular anthropocentric thought. Working across many disciplines, the blue humanities, then, challenges the cultural primacy of standard sea and freshwater narratives and promotes disanthropocentric discourses about water ecologies.

Engaging with the most pressing water problems, this Element contributes to those new discursive practices from a material ecocritical perspective. The author's hypothesis is that fluid-storied matter and the new stories we tell can change the game by changing our mindset.

Keywords: thinking with water, oceanography, limnology, wet matter, Anthropocene seas, Anthropocene blues, fluid-storied matter, aquatic agencies, freshwaters

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Introduction

The true eye of the earth is water

Gaston Bachelard, *Water, and Dreams*

(1942/2006, 31)

We speak of geological time as if rock were the epitome of durability. It isn't. Where rock meets water, it is water that wins in time, every time . . .

Amy-Jane Beer, *The Flow*

(2022, 59)

As a truly transdisciplinary field, the blue humanities studies planetary waters from sociocultural, literary, historical, aesthetic, ethical, and multiple other perspectives, and lays bare the broader social implications of hydrologic sciences.¹ The scholars in the field methodologically engage with the multivalent meanings of salt and freshwaters and the compounded changes all waterscapes are undergoing. The world's oceans, seas, lakes, ponds, rivers, streams, creeks, glaciers, and wetlands (i.e., marshes, swamps, fens, bogs, peatlands, estuaries, and bogs) are all in crisis today, brought about by capitalist regimes of power inhabiting the material-discursive spaces now traversed by the blue humanities. Blue humanities scholars entertain the propositions that the main problems and insecurities in aquatic ecosystems are ineluctably social and cultural; that the political systems mired within the capitalist logic are responsible for the damage inflicted on the planet's major waterways; and that the possibilities for any hopeful change are socially and culturally situated. Since our perceptions and ideas of water bodies are culturally shaped, as many scholars affirm, the best way to change the way people behave is to change the way they think. Thus, the field provides in-depth analyses of human relations with fluid sites from both material-discursive and sociocultural perspectives and offers analytical frameworks and critical pathways for studying these relations.

Accordingly, the task of this Element is to discuss human–aquatic interactions, including conceptual and metaphorical analogies of wet and dry worlds, as well as about water itself, on the one hand, and related scientific epistemologies of hydrosystems, on the other, as interactively explored in the field. I also deliberate on the discourses of narrative representations of waterscapes to signal the ideological nature of representation in narrative models. My discussion is modeled on the confluence of what came to be known as “thinking with water”² and the theoretical perspective of material ecocriticism.

¹ Hydrologic sciences are the fields of study concerned with Earth's waters (see [footnotes 4, 10, 11](#)).

² The inspiration comes from *Thinking with Water* (2013) edited by Cecilia Chen, Janine MacLeod, and Astrida Neimanis

The emergence of the term “blue humanities” is attributed to Steve Mentz who, in his 2009 article “Toward a Blue Cultural Studies,” suggested that “some new developments in maritime studies” must be called “blue cultural studies” (2009a, 997). Four years later, ocean historian John R. Gillis published a feature article in *Humanities* titled “Blue Humanities” (2013), outlining the field’s temporal development. In Gillis’s preliminary outline, “[t]he emergence of the blue humanities is a belated recognition of the close relationship between modern western culture and the sea.” However, the name of the field and the use of the term is not so new. Although not known among blue humanities scholars at the time, the term was first used in the 1940s by a famed Turkish author, Cevat Şakir Kabaağaçlı, who called himself the Fisherman of Halicarnassus and coined the term Blue Anatolian Humanism. British journalist Roger Williams explains in *The Fisherman of Halicarnassus* (2013) that the term refers to “the philosophy that developed during days and nights of discussion among the Fisherman and his Blue-ist (*Maviciler*) friends on their voyages along the Carian and Lycian shores” (2013, 92). Combining “classical literature with nature” (2013, 14), Blue Anatolian Humanism emerged from the conversations between the Fisherman and his famous intellectual friends during their Blue Voyages, which they initiated in Bodrum. Bodrum is the modern name for the ancient town of Halicarnassus, located at the junction of the Aegean and the Mediterranean seas, and where the author was exiled in 1925. Dating back to Ionians and Aeolians, the cultural heritage and the flora and fauna of Bodrum fascinated the Fisherman, inspiring him to write eleven story collections, five novels, eleven books of essays, and several memoirs, in many of which he claimed that this is where European civilization emerged. This “was the essential tenet of Blue Anatolian Humanism” (Williams 2013, 92), as evidenced in his prologue to his essay collection *A Flower Left to the Aegean Sea* (1972): “*This deep blue sky of southern Anatolia, its violet sea, light, and land, has nourished various trees, fruits, flowers, human beings, and civilizations*” (italics in the original).³

Other names have also been coined for the blue humanities, such as “new thalassology”⁴ (Horden and Purcell 2006), “terraqueous ecocriticism” (Brayton 2012), “critical ocean studies” (DeLoughrey 2017), “humanist oceanic studies” (Price 2017), “hydro-criticism” (Winkiel 2019), and “blue ecocriticism” (Dobrin 2021). Since the oceans and their changing conditions were the prime targets of research in the field’s developmental phase, they were extensively studied as sites of symbolic crossings and material connections among cultures, histories, and ecologies. That is why the field is commonly characterized by the

³ For a more detailed account of the Fisherman of Halicarnassus, see my article “Enchanted by Akdeniz: The Fisherman of Halicarnassus’s Narratives of the Mediterranean” (Opperman 2013).

⁴ In ancient Greek Thalassa means “sea.”

“oceanic turn” (Mentz 2009b, 2020; DeLoughrey 2017; Mentz and Rojas 2017; Winkiel 2019; Dobrin 2021), whereby scholars combine data provided by marine sciences with cultural and literary theories to modify our anthropocentrically oriented conceptions and discourses of planetary oceans. What is of utmost importance here is subverting the dominant assumptions about the seas as exploitable resources separate from the human sphere, thus emphasizing the coextensivity of human realms and the seas. Although “it cannot be our home,” as Steve Mentz points out, the sea has always been part of human cultural reality “because of its metaphorical vastness,” especially for “literary culture on a global scale” (Mentz 2022, 4). This coextensivity of aquatic naturecultures is not only metaphorical, however. As the Fisherman of Halicarnassus emphatically reminded his readers, it is also essential to life as we are all mostly made of water: “The bodies of land creatures are mainly composed of water. Human blood is salty like sea water” (Kabağaçlı 1961, 246). Water in human bodies, as cultural anthropologist Veronica Strang explains, is mostly “‘intra-cellular’ – inside our cells. The other third is comprised of ‘extra-cellular’ fluids such as blood plasma, and ‘transcellular’ fluids, which surround the cells, carry nutrition and oxygen to them and remove metabolic wastes” (2015, 31). Mentz, too, draws attention to the interrelations of bodies, water, histories, and narratives: “multiple forms of water shape human bodies, and human histories. Different narratives become legible through our depictions of liquid salt and freshwater, gaseous vapor, and solid ice” (2022, 7).

In the blue humanities, the sea is envisioned both as a geopolitical agency and as a symbolic domain marked by the intersecting stories of the Anthropocene seas, social practices, and cultural forces. Initially, the sea narratives were mostly drawn from customary western discursive maps that usually harbor a colonialist mindset (especially the nineteenth century Anglophone maritime stories), but over the years the blue humanities has become more attentive to knowledges and narratives of non-western water cultures, thus enabling the configuration of a more capacious understanding of the role of global capitalism behind the decline of oceanic and/or hydrological systems.⁵ Expanding its knowledge practices about what geographers Philip Steinberg and Kimberley Peters (2015) have termed “wet matter,” blue humanities scholarship aims to raise critical awareness about the ongoing biophysical transformations in both salt and freshwaters, even if the field still maintains “a distinctly saline focus to date” (Campbell and Paye 2020, 1).

⁵ Hydrology is the scientific study of the chemical and physical properties of Earth’s waters and the interrelationship between water and the land surface. It is mainly concerned with the hydrologic cycle, such as groundwater, runoff, and precipitation. Hydrologic sciences are comprised of oceanography and limnology (see footnotes 10, 11).

In this Element, I attempt to balance this saline focus with a conceptual plunge into the overlapping salt and freshwater ecologies and discourses, and to read water as a fluid site of narrativity where diverse aqueous life-forms call for our attentiveness to their stories that run alongside human narratives, transmitting frustrating messages of ecological despoilation. There is no doubt that the life rhythms, biopsychical linkages, recursive cycles, and intricate interactions of aquatic multispecies are relentlessly disrupted, and that life in water can no longer exceed systems of domination that are primarily western in origin. What propels this massive disruption are the mastering visions that shape the collective social memory and cultural imaginaries of the world's waterscapes. Therefore, the extensive damage from human activities to the chemistry of the Earth's hydrosphere entails alternative modes of thinking about life that "extends far deeper into the Earth's subsurface," which "comprises a large proportion of the biomass on Earth" (Reith 2011, 287). Recent oceanic studies, for instance, indicate that the number of "described marine species vary from 150,000 to 274,000, and of those that may exist from 300,000 to over 10 million" (Appeltans et al., 2012, 2191). In addition, marine scientists have discovered that "the deep sub-seafloor harbors phylogenetically highly diverse communities of Bacteria and Archaea" (Reith 2011, 288). Once thrown off balance, the metabolic diversity in the deep seafloor might diminish with yet unknown consequences to life in general. Similarly, freshwater ecosystems, which constitute only 1 percent of the Earth's surface, are alarmingly destabilized, and the number of different species that cannot adapt to quickly changing conditions decreases, eliminating biodiversity.

The blue humanities has, therefore, induced new ways of interacting and thinking with water, and different narrative strategies to represent the contemporary urgencies about human–water relations. These relations comprise the story of intersecting biological, geological, chemical, climatic, economic, and sociopolitical forces, all irremediably enmeshed in the complexities of the Anthropocene,⁶ which is "graphically evident in the case of the global ocean" (Chaturvedi 2022, 164).

⁶ Proposed by Paul Crutzen and Eugene Stoermer in 2000, the Anthropocene defines a "new geological epoch on the grounds that, for numerous environmental parameters, our planet has already far exceeded the natural variability of the Holocene Epoch" (Head, et al. 2022, 1). In 2016, the Anthropocene Working Group (AWG) of the International Union of Geologic Sciences (IUGS) voted to recommend the Anthropocene as a formal geologic epoch at the 35th International Geological Congress. On May 21, 2019, the AWG voted again, this time to designate the Anthropocene as a new geologic epoch. See the results of the binding vote by AWG, released on May 21, 2019, at <http://quaternary.stratigraphy.org/working-groups/anthropocene/>

1 The Blue Humanities: Crisscrossing Boundaries

Water reworks boundaries as much as it bounds; it territorializes as it deterritorializes.

Lowell Duckert (2017, 55)

Since the Anthropocene marks a seismic rupture in the Earth's hydrosphere as much as in its atmosphere, biosphere, geosphere, and/or lithosphere,⁷ aqueous life is severely affected on many levels, and often irreparably so. The distressing stories of the bluefin tuna disappearing from the waters of the Bosphorus⁸ along with marlins, lobsters, and mackerel, and, more recently, the massive mucilage outbreak in the Sea of Marmara, which lasted from fall 2020 until the summer of 2021, are some selected examples from Turkey to evince this rupture in the seas.

In the maritime Anthropocene, the “destructive exploitation of ocean resources” (Hau'ofa 2008, 49) creates such enormous tides of devastation that their story takes a more central position than similar stories besieging fresh-water ecosystems. That is why the blue humanities still prioritizes the imperiled seascapes, calling attention to Anthropocene-related issues in all oceanic systems, collectively called the World Ocean. Ocean warming, acidification, deoxygenation, deep-sea mining,⁹ oil spills, overfishing, surface runoff, disposal of toxic waste, and thus the presence of pharmaceuticals, plasticizers, pesticides, and detergents in waters that cause endocrine disruptions in fish, all threaten marine ecosystems and aqueous life, from plankton and coral reefs to whales. These issues require a transdisciplinary engagement with the oceans and a “method of thinking with, engaging, and submerging into the ontological, material, political, and cultural body of the largest part of our biosphere” (DeLoughrey 2023, 146). Such a method necessitates crisscrossing the boundaries between marine and social sciences and the humanities with cultural and literary theories and water-themed artistic projects. Social sciences, and the humanities in particular, “provide us with a diverse range of tools, approaches, and methodologies through which we can come to better understand the multiple dimensions of human relationships with the watery part of our world”

⁷ The lithosphere is the outermost layer of the Earth, which is the crust of the Earth. Geosphere is a layer made of rocky material.

⁸ The Bosphorus is Istanbul's strait that connects the Black Sea with the Marmara Sea, separating Europe from the Anatolian peninsula.

⁹ Deep-sea mining is the extraction of mineral deposits from the deep sea (below 200 meters), such as manganese, silver, lithium, nickel, cobalt, zinc, and copper, which harms deep marine life, and damages hydrothermal vents that contain sulfide deposits. Since seabed mining is recognized to be harmful to vulnerable marine ecosystems, the International Seabed Authority (ISA) has developed rules for commercial mining and has issued twenty-seven contracts for mineral exploration, encompassing a combined area of more than 1.4 million km² (see Miller, et al. 2018). But despite the rules for commercial mining, extractive economies for mineral resources, such as manganese, are still in demand.

(McKinley 2023, xxii). The blue humanities has specifically enhanced our understanding of these dimensions by bringing attention to new art practices that highlight the fragility of oceanic habitats. As art curator Stephanie Hessler has also pointed out, taking an aquatic turn, contemporary art provides “methodologies that are hybrid, transdisciplinary, generative, fluid, uncertain and transformative” and involves “various forms of knowledge, both human and nonhuman” (2020, 250). In this approach, art, culture, and literature not only propound new cognitive modes of connecting with the seas but also help bridge the biocultural separation between the land and the sea, situating our thinking within the crises-ridden and traumatized Anthropocene seas. Since the Anthropocene “affects conceptual frameworks as much as material realities” (Hessler 2020, 256) of the seascapes, it necessarily instigates transdisciplinary studies of the world’s expansive salt waters.

Enabling a shift “away from dominant narratives of state conquest and technological mastery” (Anderson et al., 4), transdisciplinary scholarship in the blue humanities problematizes the traditional conceptualizations of the seas as spaces for aesthetic and spiritual contemplation, or as unpredictable, formidable enemies that need to be subjugated. To subvert this binary thought, and to “balance the oppositional forces of lure and dependence, alterity and need” (Mentz 2021, 186), the field espouses a transformation of anthropocentric discursive practices regrettably entangled in what Serenella Iovino calls “bioschizophrenic modernity” (2021, 4) through recourse to the scientific knowledge of the World Ocean’s biogeochemical cycles and biosystems in naturalcultural practices. Another important characteristic of the field is that, although “it has unfolded predominantly within the scholarly communities of the Anglophone West,” as emphasized by Søren Frank, “recently, there is increasing interest in the maritime global south, including the Indian and Pacific Oceans and their roles in the societal history of the East” (2022, 12). With this interest, there has been significant resistance to the previously unquestioned ideology of western discourses by which the seas are represented in arts and literature. Based on Eurocentric modes of representation, the traditional narrative models (historical and fictional) were shown to be rather inadequate for the task of narrating the World Ocean as they are – sometimes inadvertently, sometimes purposely – complicit in capitalist notions of property and ownership (Gilroy 1993; Steinberg 2001; Bélanger 2014; Bystrom and Hofmeyr 2017; DeLoughrey 2019a; Perez 2020). There is, in fact, a long and rather anthropocentrically oriented tradition of the interaction of literature (both western and global) and seascapes with innumerable canonical texts, and that “Western literary history (as well as global literatures) is awash with representations of ocean” (Dobrin 2021, 15). As Margaret Cohen famously wrote: “At

the dawn of Western narrative, Homer's Odysseus sets sail" (2010a, 1), and storytellers since the time of Homer have been immersed in a shared mode of figurative representation. Those representations, however, were either disconcertingly colonialist or resolutely romantic, but at the same time they presented a liberating challenge to review the major indexes of conventional sea discourse: literary, historical, cultural, and political. Joseph Conrad's narrative of the Indian Ocean in *The Nigger of the "Narcissus,"* Herman Melville's descriptions of whale hunting in *Moby Dick*, Samuel Taylor Coleridge's romantic discourse in *Rime of the Ancient Mariner*, and Ernest Hemingway's narrative of the epic struggle between a marlin and an old fisherman and later between sharks and the fisherman in *The Old Man and the Sea* are only four exemplary canonical British and American maritime narratives that depict the ocean as awe-inspiring and uncontrollable. This so-called binary view of the ocean, Elizabeth DeLoughrey concurs, is "a long western tradition," as these narratives represent the ocean in terms of "the sublime that is simultaneously 'mystery' as well as a site for conquest" (2023, 151). This is evident, for example, in Joseph Conrad's reckoning of the sea. In his 1898 essay "Tales of the Sea," Conrad writes that for him the sea was "a stage, where was displayed an exhibition of valour, and of achievement the world had never seen before" (qtd. in Carabine 1998, ix). For Conrad, "[e]verything can be found at sea . . . strife, peace, romance . . . ideals, boredom, disgust, inspiration" (Carabine 1998, ix).

Inspired by the new discoveries at the time and seafarers' adventures, the themes of such narratives were bravery and heroism that trumpeted in the language and mentality of conquest; therefore, they are "often cataloged as nautical fiction, naval fiction, or maritime fiction, categories that intimate connections to military valor, colonial exploration and conquest, and nationalism" (Dobrin 2021, 21). This is first examined by Margaret Cohen in her seminal book *The Novel and the Sea* (2010), which is a comprehensive literary exploration of the western maritime world in the novel genre from the early modern period to the early 1900s. Cohen correlates the emergence of the novel with transatlantic history and interprets early British, American, and French novels in terms of maritime adventures and overseas explorations. Cohen's book is thus a detailed analysis of the sea as history and materiality. She also argues, in her article "Literary Studies on the Terraqueous Globe," that the "maritime world" emerges both as "a frontier of science and technology" and as "a great reservoir of books, narratives, and fantasy" (2010b, 657). But since those narratives were entirely masculinist, Sid Dobrin's description of them as "masculine conquest narratives" (Dobrin 2021, 16) is more realistic as they generated a literary tradition steeped in colonialist ideology and imperialist politics deemed to be necessary for western economic progress. To unsettle

those narratives, the blue humanities has persistently encouraged new stories that would immerse us in speculative attention to aquatic life to cultivate better imaginative relations to the seas and to revise our ways of thinking and acting in the face of the devastating changes occurring in salt waters. What consequently dissolves in this revision are our anthropocentric shells that are the inevitable byproducts of globalized liberal-humanist cultures that regulate collective structures, minds, and social practices of world citizens.

My argument in this Element is that the blue humanities contests the assumptions of this kind of cultural inclination through new representational and discursive practices by promoting hybrid forms and strategies to confront the complex contemporary realities of seascapes. One of the best examples of such alternative art forms is the “Crochet Coral Reef” project: an artwork responding to the dying coral reefs, defined as “a nexus of art, science, mathematics, environmentalism, and community practice.”¹⁰ Another concrete example of hybrid strategies is a project called “Territorial Agency: Oceans in Transformation” (2020), commissioned by TBA21–Academy,¹¹ which brings together science, art, and culture to demonstrate that concerns about the oceans are simultaneously scientific, ethical, social, cultural, and artistic:

Assessing the latest scientific knowledge about the effects of a wide array of human-induced interferences on marine and coastal ecosystems, the project reiterates the critical role of the oceans in respect to planetary survival. TBA21–Academy and Territorial Agency have collaborated with a network of researchers and institutions to give exposure to new forms of visibility and understanding the ocean brought by science, culture and art. (2020)

Overall, emerging from the overlap of theory and marine sciences with aesthetic expressions, these refigurations foreground our world’s changing ontology and the ways in which human–sea relations unfold in these transformative times. In such projects, the scientific data provided by oceanography, marine biology, and deep-sea ecology¹² become integral to understanding the biophysical properties of seascapes and their terraqueous connectedness. Often, scientific particulars are

¹⁰ See <https://crochetcoralreef.org/about/theproject/>.

¹¹ Established in 2011, TBA21–Academy’s research center promotes “a deeper relationship to the Ocean through the lens of art to inspire care and action. The Academy has been an incubator for collaborative research, artistic production, and new forms of knowledge by combining art and science for more than a decade” (www.tba21.org/#item%2Cacademy%2C1819). The quotation is from the 2020 Exhibition *Territorial Agency: Oceans in Transformation*: www.ocean-space.org/exhibitions/territorial-agency-oceans-in-transformation.

¹² Oceanography is the study of the ocean and its physical and chemical properties, as well as the geology of ocean systems. Marine biology is the study of marine organisms in the oceans, from the microscopic picoplankton to sharks and whales. Deep-sea ecology studies seafloor ecosystems and deep-sea geosphere–biosphere interactions, which are important in engendering biodiversity in the oceans.

crucial in framing urgent issues and questions about water ecologies and human interactions with the aquatic world. But interpreting scientific data is not an isolable process; it raises a host of questions related to economic, cultural, social, political, and ethical, as well as literary and aesthetic, domains, which help provide a more integrated approach to oceanic ontologies. When theory and science overlap to produce a counterforce against the dominant ideological formations of these domains, we can expect a discursive transformation and, ultimately, a paradigm shift. It seems to me that a world-engaging theoretical practice mediating scientific information would be particularly relevant for more ecologically oriented modes of understanding waterscapes. In other words, if the contested ideas about wet matter (i.e., ideas immersed within power structures that produce material effects) change, then their long-running legacy can dissolve in the waters along with their implicit blueprints in human minds. And this is possible. Let me emphasize the point that blue humanities scholars challenge the old paradigms of water ecologies in a way similar to how feminist and postcolonial scholars and ecocritics who have subverted hegemonic discourses that foregrounded (overtly or covertly) sexism, racism, speciesism, militarism, extractivism, and, above all, anthropocentrism, all rooted in a defunct geopolitical order perpetuating our “chronically exploitative relationships” (Estok 2021, 438) with the more-than-human environments. To develop effective critiques of this order and the Anthropocene oceans, the blue humanities rests its arguments on such questions as: In what ways can new literary texts, cultural works, and artistic projects enable us to comprehend the oceanic tragedies in the face of the Anthropocene? How do these tragedies intersect with issues of environmental and social justice and ethics of relations? How can artistic figurations and new narratives of the seas help deconstruct the capitalist, neo-colonialist, and imperialistic practices?

1.1 Expanding the Field's Horizon

The questions posed here are also valid for freshwater ecosystems. As Steve Mentz notes with good reason, “[d]espite the overwhelming presence of oceanic literature and oceanic scholarship, not all the water that matters to humans floats in the World Ocean” (2021, 193). In another recent article, Mentz further claims that “[i]n moving beyond oceans, blue humanities scholarship follows an impulse that has long been present in oceanic writing” (2022, 3). This means that the field of the blue humanities is not merely critical ocean studies but a comprehensive field with a widening scope that includes the study of freshwater ecosystems and biomes, such as lakes, rivers, streams, glaciers, and other freshwater systems. With this expanded horizon, the blue humanities invites

a relational aqueous ontology in which salt waters and freshwaters are seen as integral parts of all planetary water ecologies with their co-constitutive and dynamic relationalities. In other words, oceanography and limnology¹³ are not categorically different; rather, they are confluent in their figural notions and fates about their commodification, inviting a closer investigation of their “naturalized aesthetic/cultural/fictional/historical appropriations” (Oppermann 2019, 446). This categorical similarity was suggested by John A. Downing, the most recent past president of the Association for the Sciences of Limnology and Oceanography (ASLO) in his 2014 plenary address to limnologists, titled “Limnology and Oceanography: Two Estranged Twins Reuniting by Global Change.” Comparing marine systems and inland waters suffering from similar human-induced threats, Downing notes that inland water is a “strategic resource” and “is essential to life,” and that “inland waters contain more species disproportionately with their spatial extent (i.e., ~15–25% those found in marine systems)” (2014, 216, 217). What is of interest here for the blue humanities is Downing’s valid claim about limnology and oceanography being two estranged twins that are reunited by global climate change. According to Downing, “[a]lthough frequently thought of separately, these disciplines share much history, many converging research paradigms, and, I believe, a common future” (2014, 217). Downing emphasizes especially “the urgency of the joint mission of limnology and oceanography toward sustaining a healthy interface between marine and freshwater” (2014, 215). This joint mission is highly significant for the blue humanities. Since both salt and freshwater habitats are imperiled sites equally exposed to human “fantasies of conquest and consumption” (Bennett 2010, ix), thus encountering similar hazards and issuing similar distress signals, the blue humanities can be both oceanic and limnological with its transdisciplinary focus on all aquatic systems, while studying them from literary, aesthetic, social, and cultural perspectives.

What emerges from this confluence of oceanography, limnology, and literary and cultural studies is a navigable “fluid poetics” (Jue and Ruiz 2021, 2), which makes the field undeniably “characterized by disciplinary fluidity” (Bakker 2019). Since all water environments are ontologically fluid sites, fluid poetics is the right mode of reflecting on and representing the conceptual, sociocultural, and ecological

¹³ Limnology is the scientific study of freshwaters and is a subsystem of hydrology, which is the science that studies the distribution, movement, and properties of all waters and their relationship with the environment (see Wetzel 2001). Traditionally, limnology studies inland bodies of water, including lakes, ponds, rivers, springs, streams, and wetlands. One important aspect of limnology “is the synthetic integration of geological, chemical, physical, and biological interactions that define aquatic systems” (Dodds and Whiles 2010, 2).

challenges salt and freshwaters are facing today. Ultimately, aquatic problems are not only ecological; they also carry ethical and sociocultural imperatives, all of which are significantly shaped by discursive formations imbued with anthropocentric ideologies. Focusing on the physical complexities of water and its “imaginative polyphony” (Mentz 2021, 93), the blue humanities challenges those discourses that have infused our thinking and acting and thus valorized all strategies of domination. Hence, what flows beneath the lithic stories of the Anthropocene in the liquid habitats is exceedingly dark and demoralizing, with the ongoing exploitation of all waterscapes. If the world’s hydrocommons are seriously disenchanting today – like rivers that suffer a worse fate than T. S. Eliot’s “river” in *The Wasteland* that “sweat[ed] oil and tar” exactly 100 years ago (1930/1958, 39) – we need a more cohesive ecological approach to freshwaters as well, which constitute about 3 percent of all waters on Earth, compared to the oceans and seas that cover 71 percent of the Earth’s surface. In this regard, the field’s expanded focus on the sources of our exploitative relationships with both salt and freshwater ecologies reveal what Diana Coole and Samantha Frost would have said if we just replace “nature” with “waters” in their memorable line: “the ways we understand and interact with *waters* are in need of commensurate updating” (2010, 5). This updating is in progress today with the conjunction of sociocultural, literary, historical, ethical, political, and aesthetic discourses of the world’s oceans and freshwater bodies with those of marine and freshwater sciences, all of which provide a viable onto-epistemological framework for rethinking the relations between waterscapes and landscapes, and between terrestrial humans and aquatic nonhumans. Reckoned with new theories and narratives from the arts and the humanities, the field constructively uses scientific data provided by marine sciences and now by the “recent hydrocultural research” (Campbell and Paye 2020, 1) on freshwaters.

Such a comprehensive horizon constitutes the field’s identity in a relationship of constant slippage between the geophysical properties and discursive constructions of waterscapes. Having this “twofold condition,” as I have previously underlined, the sea, in particular, is both “a physical geographical site and a vast domain of imagination that can never be conclusively charted” (2019, 446). Or, as Donna Haraway would say, like land and everything else in this world, the sea is “simultaneously literal and figurative” (1997, 11), and freshwaters are not exempt from this characterization. Thus, with complementary use of stories from cultural, literary, anthropological, and scientific accounts, the field forges a new conceptual map for the composite reality of the changing waterscapes to “sensitise humanity as a whole to the implications of this knowledge,” as British physicist Alan Cottey argues about such ecological emergencies (2022, 819).

Therefore, relevant critical theories and modes of analysis from cultural and literary studies, visual arts, and sciences have become indispensable tools in the quest for sustainable solutions to heavily traumatized oceans and freshwaters. To find less anthropocentric ways of thinking about the planet's waterscapes, the blue humanities raises "potent questions about scale, temporality, ontological interconnection, materiality, and mediation within the aquatic Anthropocene" (Alaimo 2019, 431). As such, aquatic scholarship has prompted a radical shift in the conceptual models of waterscapes by dispensing with the human-centered figurations of water bodies and reconfiguring "water as that which both connects us and differentiates us, as that which we both are and which facilitates our becoming" (Neimanis 2017, 111). If water *both* connects and differentiates us, then we need to move beyond either/or interpretive categories and toward more comprehensive and inclusive methods of scholarship. This is already significantly underway in the field, with new, multiperspectival conceptual frameworks. These frameworks help modify anthropocentric epistemologies, instrumentalist ideologies, and the dominant ontologies grounded in a fragmentary view of life, which create the habit of seeing reality in terms of separate fragments – hence the field's embracement of revisionary forms of knowledge that enable *thinking with* water and the construction of a new cognitive wet paradigm.

On the whole, the blue humanities undermines historically conditioned and ideologically determined notions of its represented subjects – troubled seas and distressed freshwaters – suggesting instead *thinking with* oceans, lakes, and rivers, which can mutually refashion our relationships with wet matter. Thinking with water means practicing "relational thinking, as theories based on notions of fluidity, viscosity, and porosity reveal" (Chen, MacLeod, and Neimanis 2013, 12), as well as recognizing seas, rivers, lakes, and all water bodies as living beings with innate rights. After all, water in every form has a right to flow unimpeded, and glaciers have a right to remain intact. The imperiled liveliness of waterscapes thus urges us to reimagine the collective story of conflicting and intimate terraqueous relationalities and to think through and across our contemporary situation against the present knowledge systems. Hence, as Andrew Biro maintains, "thinking with water today must not only maintain a sense of the real materiality of watery flows but also attend to the ways in which the structures imposed by thinking on those flows – 'basins,' 'watersheds,' 'aquifers,' 'oceans,' and so on – are abstractions, grounded in particular cultural understandings" (2013, 166–167). Such an outlook facilitates thinking beyond the disorienting framing of the Anthropocene, which "has come to signify a discourse embedded in the global scale vision of the sedimentary traces of the anthropos . . . instituting the human in the catastrophic knots of immutability" (Oppermann 2018, 2).

In a different register, then, this Element invites its readers to rise above this framing in a deeper understanding of aqueous life in the Anthropocene, which gathers us all, human and nonhuman, in planetary hydrocommons that are deeply interlaced with human mindscapes, reflexivity, and imagination. Significantly, these interlaced domains of waterscapes and mindscapes necessitate using what Astrida Neimanis calls an “onto-logic” to encourage us to think and act in a “logic of connection or communication” (2017, 94–95). Such an onto-logic not only entails thinking with water, but also helps us critically reflect on the symbolic meanings of the world’s hydrosphere – meanings generated by traditional narratives that have played an influential role in determining our biocultural relations to water. To reform these relations, we need to let go of the old stories that cannot move us beyond the all-too-human frames. Because old stories, as Rebecca Solnit convincingly argues, “prevent us from seeing, or believing in, or acting on the possibilities for change . . . Sometimes, the situation has changed but the stories haven’t, and people follow the old versions, like outdated maps, into dead ends” (2023). To avoid being “hemmed in by stories” that lead us down blind alleys, Solnit suggests new stories. Australian novelist James Bradley (2017), too, offers a similar suggestion, advising us to find “new imaginative and lexical vocabularies capable of naming and describing concepts and experiences that exceed the human.” The ecological constraints waterscapes face today have become so serious that it is clear how important new stories will be in the cultural imaginary if we want to have any positive change in our relations with the water worlds. I suggest that the new stories should reflect the cognitive vibrancy of the nonhuman in the storied waters, no matter how digressive or incoherent these narrative potentials may appear at first sight. Mainly, such stories can foreground the idea that, like solid matter, wet matter can be quite expressive, telling cautionary tales about the deteriorating water conditions and the slow demise of many species all caught up in the Anthropocene’s rising waves.

If we accept the view that wet matter has an expressive agentic capacity with a signifying power ingrained in its aquatic entities whose meanings are deeply interlaced with human imagination via our literary traditions, then we come to realize that narrative, to borrow Roland Barthes’s words, “is simply there, like life itself” (1977, 79). Storied water, in this regard, becomes the fluid ground on which the imaginary and the actual intersect in real and symbolic contexts. Reading storied waters “requires arts of imagination” (Swanson, Tsing, and Bubandt 2017, M8), as well as arts of attentiveness to recognize the expressive potentials of water itself and its narrative agencies. I offer this material ecocritical “poetics of water” (Mentz 2022) as a better alternative to the anthropocentric paradigm, which views eloquence only in human terms. This new interpretive horizon, which encourages us to be more perceptive of the stories

and meanings of fluid matter, transforms our objectifying attitude to waterscapes and thus generates disanthropocentric modes of thinking.

This is a whole new approach by which we can, for example, read the oceans as if they continually transmit poignant stories of deoxygenation due to the flow of chemicals in the waters such as nitrogen and phosphorus, which produce harmful algal blooms with dangerous toxins. Ocean stories can also be read as an instance of what Rob Nixon calls “slow violence” (2011). The distressing stories of sea turtles that unwittingly eat plastic garbage thrown into the oceans and the stories of dying coral reefs are also instances of slow violence in the oceanic environments. Coral reefs¹⁴ tell the saddest stories of being the most vulnerable victims of anthropogenic pressures; among them, ocean acidification and warming waters take center stage. Add to these flows of agricultural sediments, marine pollution, and overfishing to envision the darkening waves of the Anthropocene seas. In the specific case of corals, let us recall that they are made of calcium carbonate (CaCO_3) derived from seawater, and, when subjected to acidification in the water, their pH level is inevitably reduced. To raise the pH of the calcifying fluid, corals continue to produce calcium carbonate, but in acidic seawater they cannot bring carbonate ions to the level required for their skeletal growth. Moreover, the existence of coral reefs depends upon coral animals, such as polyps, which are anemone-like creatures that produce calcium carbonate crystals. By being stacked on top of one another, these animals form a skeleton to protect themselves. This enables coral reefs to survive in colonies in which skeletons of numerous polyps form domed structures, providing nesting grounds and food sources for many marine species, such as marine flatworms. Coral reefs also prevent beach erosion along tropical coastlines.¹⁵

The Status of Coral Reefs of the World 2020 Report plaintively reveals that although coral reefs occupy less than 1 percent of the ocean floor, they are home to more than 25 percent of marine life. The report also underlines the fact that coral reefs can recover when they are not disturbed by anthropogenic threats, and their story conveys a dynamic life under the ocean’s surface where 800 different species of hard coral help marine life thrive. Because coral reefs harbor the highest biodiversity of any ecosystem, they are the most vibrant ecosystems now facing an existential crisis due to climate change and other human-induced stressors.¹⁶ In “Scientists’ Warning of an Imperiled Ocean,” scientists reveal

¹⁴ See the “Status of Coral Reefs of the World: 2020” report, produced by the Global Coral Reef Monitoring Network (GCRMN). www.unep.org/resources/status-coral-reefs-world-2020.

¹⁵ This is my summary of the scientific information provided by Anne L. Cohen and Michael Holcomb (2009).

¹⁶ See “Life Below Water,” from the Global Coral Reef Monitoring Network of the International Coral Reef Initiative: www.unep.org/interactive/status-world-coral-reefs/.

how these stressors have accelerated damage to marine habitats, “with 76% of marine and estuarine species affected . . . including notable losses of 50% of coral-reef cover . . . and 40% of kelp forests” (Georgian, et al. 2022, 2). Being thus constrained by continuing stress, coral reefs project their stories through their dwindling colors as meaningful signs to convey their dying cries. Color is their primary tool of expression, used with mastery to stay alive and for conveying their sad stories. The decimation of the Great Barrier Reef in Queensland, Australia, is a striking example of such stories as it is the largest coral reef system in the world, with “400 types of coral, 1,500 species of fish and 4,000 types of mollusc.” It is also the “habitat of species such as the dugong (sea cow) and the large green turtle, which are threatened with extinction.”¹⁷

The stories of many species here make the Great Barrier Reef a major site of narrativity, whereby the reefs and their inhabitants “prompt us to rethink the scope of our deeds and attitudes” (van Dooren 2017, 63). Among the 1,625 species living in the Reef, the story of the iconic clownfish (seen in orange, white, and black), has become quite well known due to Disney Pixar’s computer-animated film *Finding Nemo* (2003). Other species that live in the Great Barrier Reef include giant clams with psychedelic colors (the largest mollusc on Earth), manta rays, the colorful giant fish, the Māori wrasse, codfish that resembles a potato, dwarf minke whales, sharks, and turtles. Paying attention to the stories of these creatures, seeing them as expressive beings that communicate cautionary tales, is a material ecocritical vision that can expand our sense of awareness about their entangled fate with the overwhelming presence of human beings. These aquatic agencies, as Michel Serres would also affirm, can “speak just as much and perhaps better than us, they also say, write, sing, communicate among themselves, through a kind of reciprocal encoding, a kind of common language, a kind of music, harmonic, disharmonic – I don’t know yet – but whose voices I am sure to hear” (2010, 131). Acknowledging their creative expressions is a good way to embrace more sea-friendly modes of thinking and acting.

Such an acknowledgment is well embodied in an artwork I mentioned earlier, the *Crochet Coral Reef* project, exemplifying the mingling of creative expressions in nature and culture in performative forms of creativity indicated by their interlacing threads. This innovative way of “crocheting a reef as a crafty response” to the plight of the Great Barrier Reef was inspired by the “unfolding of living ecologies where chance and circumstance are central drivers of innovation.”¹⁸ As is stated on the project’s website, the artwork is “an artificial

¹⁷ See UNESCO World Heritage Convention, “Great Barrier Reef” page: <https://whc.unesco.org/en/list/154/>.

¹⁸ “The *Crochet Coral Reef* – a project by Australian twin sisters Christine Wertheim and Margaret Wertheim – is an artwork responding to climate change, an exercise in applied mathematics, and

ecology emerging from an exploration of *matter, form, and code*.” It is indeed what Donna Haraway calls a “wooly experimental life-form.” The other materials used, Haraway notes, are “[p]lastic bottle anemone trees with trash tendrils and anemones made from *New York Times* blue plastic wrappers” (2016, 78). In this fabulous habitat, we witness the unfolding of a “craft-based ‘chemistry’ grounded in a language of the hands.” This crochet artwork aims to produce “lively looking seascapes, invocations of reefs . . . which act on a psychological level to elicit in viewers a feeling of being ‘down there’ under the sea.” What makes this project so special is, first, how it shows the connectivity of human–nonhuman creative expressions, and second, that it makes us aware of how a “one-stitch-at-a-time meditation on the Anthropocene” can generate a message of hope amidst the plight of the troubled seas.

2 Troubled Seas: Oceanic Imagination

We have seen that thinking *with* the troubled seascapes has given rise to an oceanic turn in the humanities (DeLoughrey 2023), highlighting the crucial role oceans play in shaping world cultures, literary narratives, aesthetic sensibilities, artworks, economies, politics, moral codes, sciences, and even languages. Many blue humanities scholars – including Elizabeth DeLoughrey, Steve Mentz, Astrida Neimanis, Hester Blum, Laura Winkiel, Margaret Cohen, Teresa Shewry, Rachel Price, Craig Santos Perez, Melody Jue, and Sidney I. Dobrin, among others – have emphasized the material-discursive significance of the oceans. Their work has moved the field “beyond the boundaries and methodologies of land and nation-state-based environmental perspectives, while also foregrounding the colonization, territorialization, and militarization of the oceans” (Perez 2020, 2). To a large extent, then, the blue humanities has come to be known as “Critical Ocean Studies” which, as Craig Santos Perez rightly claims, “flows across disciplines; dives into submarine depths and submersions; swims into multispecies entanglements; intersects with feminist, indigenous, and diasporic epistemologies; recognizes the agency of a warming, rising ocean; and transforms our critical inquiries and reading practices” (2020, 2).

Flowing across disciplines, and referred to as the “oceanic turn” in academic circles, critical ocean studies has indubitably enriched cultural and literary studies as the sea is no longer considered to be an empty space to be claimed by capitalism, a “passive setting for a dramatic narrative” (Slovic 2008, 6), or “a

a wooly experiment in evolutionary theory”; <https://crochetcoralreef.org/artscience/overview/>. See also Margaret Wertheim (2015), Science+Art Project: Crochet Coral Reef: www.margaretwertheim.com/crochet-coral-reef.