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Underwaterⁱ

Stephanie R Januchowski-Hartleyⁱⁱ, Christopher Bearⁱⁱⁱ, Emily O’Gorman^{iv} and Fraser A Januchowski-Hartley^v



Figure 1. Underwater: the view across a coral reef.

Humans attach diverse meanings, values, and practices to water and associated environments. Yet, as with the underground,¹ human encounters with aquatic environments tend to be at the surface or gazing upwards: a river spring’s resurgence, shadows cast by a fringing coral reef, or the beauty of river water falling over a vertical drop. Hidden below the surface, water percolates through soils, fills voids in bedrock, moves debris along riverbeds, and supports diverse species uniquely adapted to live under pressure (fig.1). Through this essay, we bring attention to underwater “shadow places” (physical sites forgotten, repressed, unseen, and often damaged or harmed²). These have, for example been used to sustain

¹ *sensu* Hawkins, “Underground imaginations”; Melo Zurita “Holes, subterranean exploration and affect.”

² Plumwood, “Shadow Places.”

human lives and livelihoods and to dispose of human waste but have not been given sustained scholarly attention beyond focuses on ecology and biology, and extractive industries such as mining and fishing. Expanding on earlier work about human imaginings of oceans³ as well as vertical and volumetric spaces,⁴ we focus this essay on scales and experiential differences of being underwater, both human and non-human. Our goal is to inspire others to develop different ways of looking at, as well as witnessing and learning about, underwater places.

We begin with what it means to be underwater. While most might think of underwater as beneath the surface of rivers, lakes, oceans, or swimming pools, this is a limited perspective of underwater, both spatially and temporally. Being underwater can happen in diverse ways, with varying effects, shaped by the size and location of the water as well as who or what is submerged. From a more-than-human perspective, insects such as ants or beetles might experience underwater within drops from a rainstorm. Similarly, void spaces in bedrock can become submerged underwater and rocks (such as limestone) can dissolve and form voids, filled as water infiltrates from above. These processes often occur at spatial and temporal scales outside common day-to-day experiences. Consequently, groundwaters have been shadowed in water use planning around the globe because of their invisibility and complexity.⁵ We wonder what it would mean for more humans to experience and interact with underwater and underground processes.

In thinking further about the temporalities of underwater, we see a need and an opportunity for creative approaches that engage with different ways of *being* underwater and their multiple spatialities. There is a need and opportunity for creative approaches to engage with being underwater at different spatial and temporal scales. Despite some discussion of human perspectives about the temporality of flooding, and what it means to be underwater in this situation,⁶ the temporalities of being underwater both from human and more-than-human perspectives remain underappreciated. For instance, research might further explore how relative hydrological permanence or ephemerality affects engagement and experience of being underwater. Transdisciplinary research and engagement are creating new possibilities through technology like Photafish,⁷ which is often used by scientists to photograph underwater species, but such tools could be used to create new ways of encountering underwater worlds that are otherwise inaccessible.

We also see the need for broader recognition and consideration of experiential differences of being underwater. While scholars have written about experiences and encounters of the underwater, both in⁸ and out⁹ of water, there remains a need to broaden our understanding of what 'being underwater' is or could be in relation to different people and environments. Humans can be underwater both in a bathtub or swimming pool - confined and structured spaces – compared to underwater in a lake, river, or ocean with more chances for unexpected encounters with other organisms and features (e.g., currents, thermoclines etc.). Equally, people from various cultures could experience being underwater differently. Further, we might question whether 'being underwater' require us to be physically submerged. For

³ For examples DeLoughry, "Submarine futures"; Probyn, *Eating the Ocean*.

⁴ Melo Zurita, "Holes, subterranean exploration and affect"; Steinberg and Peters, "Wet ontologies, fluid spaces"; Straughan, "Touched by water"; Eden and Bear, "Reading the river."

⁵ Linke et al., "3D conservation planning"; McLean et al., "Shadow waters."

⁶ Walker et al., "Assembling the flood."

⁷ García-Melo et al., "Photafish system."

⁸ For example, Straughan, "Touched by water."

⁹ For example, Eden and Bear, "Reading the river."

instance, Eden and Bear noted that fishers' 'encounters' with fish were often from outside the water, on land, based on their observations of fish behavior through the waters' surface, and their sensing and imagining of underwater environments through a combination of feeling, touch, and technologies.¹⁰ In this way, fishers sensed and constructed underwater environments, as both a challenge and pleasure. But how do these fishers' out-of-water experiences of 'being underwater' compare with experiences of fishers underwater? In many tropical and sub-tropical aquatic environments, fishing occurs underwater,¹¹ with fishers spending extended periods below the water's surface observing, following, and catching fish and other species.¹²

Being underwater affords varied experiences and perspectives that could extend our understanding of human-animal relations from within the water. We ask: what is different between in and out-of-water human-nonhuman relations and experiences? Do people experience a different relationship with species from underwater than they do from above or alongside? What effect could these varied experiences have on more-than-human interactions, if any? Such comparative questions remain un-investigated, and we see a need for these to be extended to methodologies beyond use-based lenses (such as fishing) to expand our experiences underwater.

Finally, we recognize that humans cannot persist underwater for prolonged periods, at least not without technologies. Access and comfort with the concept of being physically underwater is mediated by culture,¹³ and can be influenced by disease transmission, and dangerous animals.¹⁴ Being submerged also requires specific skills such as swimming, which can limit access, but also provide an opportunity for learning and exploring experiences and engagement through discomfort and being 'other'. Similar can be said for experiences and engagement with technologies like SCUBA or underwater autonomous robots that both provide access to underwater environments. There are different ways 'to be underwater' and opportunities remain to engage, listen, and learn within these environments. We believe that, while there is considerable scope for further research on embodied human experiences of underwater spaces, it is important that these do not overshadow nonhuman ways of being. Research on underwater places should build on emerging more-than-human research methods,¹⁵ experiencing and interacting with heterogeneous forms of underwater life and view these all-to-often shadowed places from new perspectives.

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¹⁰ Eden and Bear, "Reading the river."

¹¹ Johannes, *Words of the Lagoon*.

¹² Wagner and Jacka, *Island Rivers*.

¹³ See Torgersen. *Waters of Destruction*, 174.

¹⁴ see Hviding, "The River, the Water, and the Crocodile," 43.

¹⁵ For example, Bastian et al., *Participatory research in more-than-human worlds*.

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ⁱⁱ Stephanie R Januchowski-Hartley is a Sêr Cymru Fellow in the Department of Biosciences, Swansea University, Swansea, Wales <s.r.januchowski@swansea.ac.uk>

ⁱⁱⁱ Christopher Bear is a Senior Lecturer in the School of Geography and Planning, Cardiff University, Cardiff, Wales <bearck@cardiff.ac.uk>

^{iv} Emily O’Gorman is a Senior Lecturer in the Department of Geography and Planning, Macquarie University, Sydney, New South Wales, Australia <emily.ogorman@mq.edu.au>

^v Fraser A Januchowski-Hartley is a Lecturer in the Department of Biosciences, Swansea University, Swansea, Wales <f.a.hartley@swansea.ac.uk>