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Water Flourishing in the Anthropocene

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Abstract

What does it entail to foreground water flourishing as a stance toward the Anthropocene? During an exercise at the Anthropocene Campus Melbourne, about twenty participants individually drew images of 'water flourishing' leading, with only one or two exceptions of Edenic representations, to a wall of images depicting no humans. That small experience reproduced a larger cultural and environmental management configuration: people-less water flourishing. If we face such constraints in imagining, representing, and enacting hydro-flourishing, we remain stuck in familiar loops either of: 1) elemental thinking that excludes the human; or 2) anthropocenic thinking that too often addresses the human primarily as destroyer. How do we imagine our being with water in different ways? How do we move away from pervasive narratives of water crisis without, at the same time, romancing water? Feminist, decolonial, and Indigenous approaches to water and its cultural politics ask us to consider the elemental not only in substance, but also in rights regimes and in the project of flourishing. In this paper, we present examples of water flourishing projects and impasses from three sites: Kathmandu, Nepal; Perth, Australia; and the Florida Everglades, United States. All show both the problems and the promise of co-centering the human and nonhuman in their interdependent relations when it comes to water flourishing.

Keywords:

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The Anthropocene, it would appear, is a dark era of natural and human history, and water is one of its key substances. The changes being wrought by our species exact a profound ecology-altering impact around the globe, marked by water 'scarcity' alongside floods. On any range of subjects—from species extinction to land desertification to global warming—we are in for a rough ride. It seems that many scholars and (other) political actors have backed themselves into a conceptual corner of doomsday eventualities. Specifically, anthropocenic discourse more often addresses water as crisis than as flourishing.[1] An aperture in offsetting the more crisis-laden among the Anthropocene-inspired speculations is to advance the work of thinking imaginatively with other-than-crisis possibilities. We explore flourishing in the Anthropocene, and we do so through a focus on human relationships with water.

What does it mean to consider together the Anthropocene and human flourishing with water? We find this a useful provocation for thinking speculatively with possible ways of being with, and managing, water. The query knowingly juxtaposes itself with a wealth of scholarship on water resource management, which asserts that we confront serious challenges when it comes to safeguarding human and non-human access to this vital resource (and which addresses water as, first and foremost, resource). In many parts of the world, groundwater sources are dwindling and increasingly contaminated, while rivers are over-exploited and precipitation patterns change rapidly, with wild vacillations between droughts and flooding. As the glaciers melt and sea levels rise, water's alternating scarcity and abundance appears destined to be a hallmark of our changing époque. The United Nations, for example, publishes 'water facts', including that two-thirds of the global population lives with water scarcity at least one month a year.[2] For the humanists among us, the threat to livelihoods and justice are great. To imagine otherwise could seem ignorant at best—a foolhardy enterprise that ignores the urgent task of preparing for the transformations at hand. To consider, describe, and theorize water and other environmental flourishing, however, does not require bracketing off struggle. In what follows, we offer three examples as cases in point. Each, without ignoring challenges and injustices, describes an 'R' of water—retention, recycling, and restoration—as a site for the everyday imagining and enactment of flourishing. Each emphasizes the immediacy of scale at which water flourishing takes hold and its irreducible relationality. Human-water flourishing is harder to imagine, at least from our vantage points, than crisis. That makes it all the more important to try.

Water Flourishing

The inspiration to think with water flourishing came in part from the September 2018 three-day pop-up 'Anthropocene Campus Melbourne' at Deakin University. The event explored, played with, and analyzed key Anthropocene elements: water, earth, fire, and air/flesh. As the theme leaders for the water element, we were tasked with convening four hours of programming to spark critical thinking about water resource challenges and human-water relationships. We compiled a solid arsenal of readings to back up this program and used the face-to-face time with participants to workshop some of the key issues and concepts. Activities included analysis of maps from Guerilla Cartography's *Water: An Atlas*; Soufy's hip-hop song 'Pay to Be Poisoned', which was 'Inspired By The Flint Water Crisis & The Constant Fight To Protect Our Water & Indigenous Lands'; a guest appearance via Skype with Melanie Yazzie, Assistant Professor of American Studies at the University of New Mexico and co-editor of a special issue of *Decolonization* on 'Indigenous Peoples and the Politics of Water'; and a group of readings.[3]

The tone of the first day was measured, with focus on problems of sovereignty and governance, but also attuned to embodied experience and story-telling as we considered surfing and the cultural politics of water. The second day explored pathways alongside 'crisis' and 'scarcity,' including struggle and solidarity and, then, flourishing. Near the workshop's conclusion, we asked participants to sketch out what they thought that water flourishing might look like. This prompt emerged partly from our shared concern that it seemed easier to imagine the end of the world than the kinds of changes in human behaviour it would take to reverse the course of climate change and other forms of environmental destruction. Truth be told, it was also inspired by the stacks of colourful markers and poster paper provided by the conference organizers; it seemed a pity to let the materials go to waste. With orange poster paper in hand, then, participants took five minutes to sketch out their visions of flourishing with water.

The results were striking. Out of more than twenty images, only two included people. Both of those drawings had a single Edenic couple. In one, the couple appeared to be catching rainwater with large handheld cups, while in the other the Adam and Eve-like figures were accompanied by a small child. In each, the couples were dwarfed by the natural elements that surrounded them; people were perhaps-grateful spectators in the ecologically vibrant landscapes.

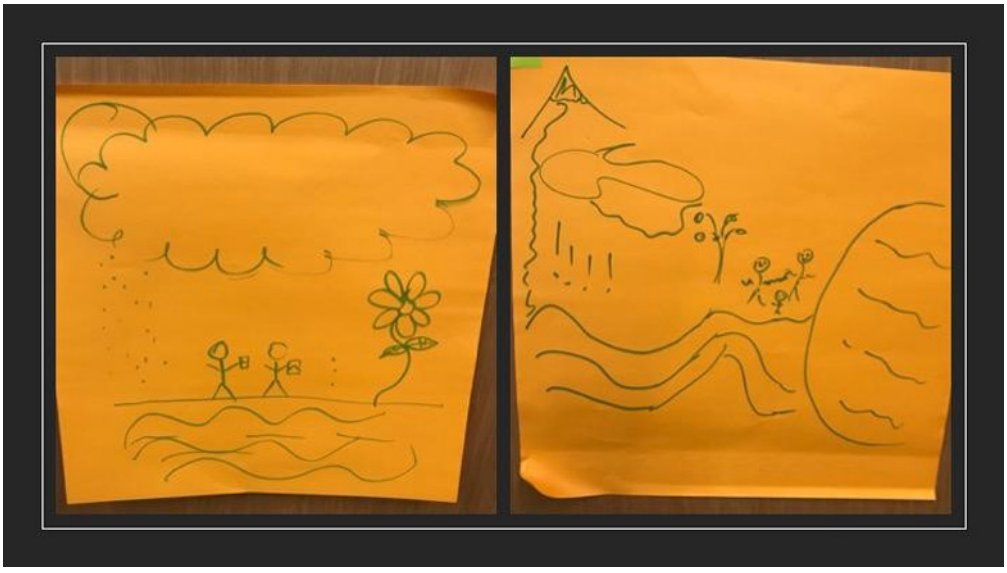

Figure 1 Images of Humans in Water Flourishing

The remaining images of 'water flourishing' were devoid of humans. The sketches included scenes of lakes filling up with rain, waterfalls flowing from hillsides, animals drinking from winding rivers, and—in a more conceptual vein—two images in which water was captured in a never-ending cycle of replenishment through the use of repeating concentric circles.

When a participant stood to discuss her sketch, she first emphasised the winding riverscape that she drew before highlighting the plants growing alongside the river and the two mammals drinking from its waters. Above them, mountains loomed in the distance while two clouds rained down. After noting that nature was dominant in her sketch, she commented poignantly that there were 'no humans to mess things up'. As we discussed the implications of this statement, the other participants chuckled upon realizing that most everyone had kept

humans out of the picture. For them, the illustration of water flourishing meant prioritising the primary role, and the inherent rights, of human-less nature. In water flourishing, humans were no longer dominant or, perhaps, our reign of unrestricted carbon emissions had come to an end; either way, humans had somehow ceased to 'mess things up'. Such a people-less view of environmental flourishing is common, as scholars have observed at least since the 1996 publication of William Cronon's famous essay 'The Trouble with Wilderness; or, Getting Back to the Wrong Nature'.[4]

Figure 2 Images of Water Flourishing Without Humans

As mentioned, our interest in directing the group to think of, and with, flourishing emerged from our desire to think beyond the doomsday scenarios with which we are confronted when the topic of water stress arises. We were reading about Cape Town's near exhaustion of groundwater and its residents' reorientation to water as the city approached (but then never reached) 'Day Zero', and we knew the dire statistics, global water deficits, water stress, and the predicted wars and other conflicts that likely will result.[5] In a moment of inspiration, the idea of the activity came spontaneously to Cattelino, who had been writing about problems of flourishing, just moments before the second session began. If a weak memory serves, that brainstorm may have also arisen from a comment by Drew about the way that two of her mentors, Mary Evelyn Tucker and John Grim, have begun to speak in public and private about the need to envision and embrace flourishing as a means of being in the world. A similar prompt is found at the start of *Journey of the Universe*, by eco-religious scholars Brian Swimme and Mary Evelyn Tucker, who write:

> *Imagine experiencing the Earth's beauty for the first time—its birds, fish, mountains, and waterfalls. Imagine, too, the vastness of Earth's home, the universe, with its numerous galaxies, stars, and planets. Surrounded by such magnificence, we can ask ourselves a simple question: can we find a way to sink deeply into these immensities? And if we can, will this enable humans to participate in the flourishing of life?*[6]

Note that even this framing leaves humans out in the first instance. We nonetheless take from it that flourishing is aspirational. As an indicator for taking direction on the path, it needs no fixed definition.[7] Tucker makes this point repeatedly in her conversations while equating our

quest for communion with the earth to our quest for enjoyable communion and co-habitation with other humans. 'Do we want sustainability in our relationships and our marriages,' she has asked many audiences, 'or do we want to flourish in our relationships?' Whereas sustainability in this context implies stable continuity, above all else, *flourishing* implies a positive affective resonance within the maintenance of that continuity. Emphasizing relationships flags the continued compassion and creativity of the work at hand. Swimme and Tucker pick up this theme in their book's conclusion, in the section *Creativity and Flourishing*:

> *We are in the midst of vast destruction, but it is simultaneously a moment of profound creativity. We are involved with building a new era of Earth's life. Our human role is to deepen our consciousness in resonance with the dynamics of the fourteen-billion-year creative event in which we find ourselves. Our challenge now is to construct livable cities… Our destiny is to bring forth a planetary civilization that is both culturally diverse and locally vibrant, a multiform civilization that will enable life and humanity to flourish.*[8]

Such a vision of flourishing epitomizes 'blue-sky' and forward-facing thought—and the authors do so unabashedly. They also embrace planetary, even cosmological, scale.

As historians and anthropologists, however, we are more circumspect about how much our work allows us to follow utopian lines of thinking, focused as we are on the role of people(s) and communities in past and present environmental transformations. Our perspectives are further tempered by conversations circulating in our respective disciplines about the juggernaut of human-wrought devastation of which we are all a part, and which is alternately labeled the Anthropocene, the capitalocene, the plantationocene, and even the Chthulucene.[9] These terms evoke a sort of an impasse, 'a time of dithering' which makes moving qualitatively forward in a 'stretched-out' present difficult to achieve.[10] Lauren Berlant describes the 'cruel optimism' of our contemporary moment where, across diverse geopolitical and biopolitical locations, 'the present moment increasingly imposes itself on consciousness as a moment in extended crisis, with one happening piling on another'.[11] This leads to a 'crisis-ordinariness' that perpetuates impasse even as people attempt to pursue 'the good life'.[12] The problem of anthropocenic focus on crisis is not that it is somehow depressing by comparison to a more optimistic embrace of flourishing. Rather, the concern is that it limits both the imagination and the possible course of action. As anthropologist Janet Roitman wrote in her essay 'Crisis':

> *the aim is not to invalidate 'crisis' or to critique the term as inaccurate or merely symbolic. There is no reason to claim that there are no 'real' crises. Rather, the point is to observe crisis as a blind spot, and hence to consider the ways in which it regulates narrative constructions, the ways in which it allows certain questions to be asked while others are foreclosed.*[13]

Berlant's 2011 book *Cruel Optimism* uses the word *flourishing* seventeen times. With it, she highlights the potential to move beyond impasse that would be possible if it were not for the cruel optimisms in which humans engage: 'A relation of cruel optimism exists when something you desire is actually an obstacle to your flourishing'.[14] The result is 'slow death'. When applied to the human body, this might be the caloric food that one eats despite the desire to be thin. Or, when applied to the environment, this might be the desire to fight climate change while flying frequently around the world (an activity in which all three co-authors engage). It might mean working toward a view of water flourishing—as people-less—and thereby hampering hydro-flourishing. Berlant works across scales, from corporeal bodies to bodies politic. In tone and their similarly tuned arts of noticing[15], Berlant's work resonates with that of Rob Nixon, who the same year published *Slow Violence and the Environmentalism of the Poor*.[16]

Nixon, too, turns away from explosive crisis narratives—the go-to narratives of global water governance—to attune readers to the slow but no less violent processes by which the victims of environmental harm and injustice—namely, the poor—die. From Berlant and Nixon we learn not only to question the temporality and narrative conventions of water crisis but also to ask how water grabs us, and at what scale.

We are ethnographers and historians, and so we work in the domain of the possible, past and present, the possible not in the sense of what is expected but in a more capacious sense: the possible as underway otherwise in real time, that once was, and that makes futures through struggle. In what follows, we treat flourishing as the aspiration for more just and sustainable human-nature and human-water relationships while also acknowledging it as difficult to achieve due to our everyday (destructive) habits of thought and practice (as poignantly described by Elizabeth Shove, and due to the injustices that maintain the status quo through, for example, capitalism, settler colonialism, and patriarchy).[17] Flourishing is not necessarily grandiose, planetary, or playful. It is, we submit, about the hard and good work of relating well with others. Indigenous feminist scholars Yazzie and Cutcha Risling Baldy call attention to the role of making good relatives—including and especially through struggle—in decolonization; further, they point to water not only as the material locus of contemporary (and longstanding) struggles for Indigenous self-determination but also as the material force that teaches about relationality.[18] Similarly, historian Nick Estes, when writing about the resistance to the Dakota Access Pipeline near the Standing Rock Sioux Reservation, linked the movement's affirmation of 'water is life' to the broader philosophical and moral imperative of 'being a good relative'.[19] Water flourishing is not about imagining eco-utopia in our minds so much as about engaging in, and accounting for, struggle and shared obligation.

Thus, we briefly introduce three case studies in which the promise for flourishing with and around water is possible, even if it is difficult to upscale or to implement unilaterally. These case studies include rainwater retention in Nepal, wastewater recycling in Australia, and the restoration of the Florida Everglades wetlands in the United States. The examples and their insights vary due to geographic and socio-cultural distinctions as well as the diversity of solutions that are possible when it comes to harmonising our use and management of water. That variation is not something to be swept away by 'best practices' or domesticated by techniques of commensuration.[20] After all, as anthropologists of the world's water problems have pointed out, there is no one technological, economic, bureaucratic, or political solution to the world's water problems. Instead, variation is the very substance of flourishing, and pathways must be taken 'depending on the particular materialities and connectivities in specific contexts'.[21] It is in the spirit of demonstrating the diversity of approaches to flourishing with water that we move to the case studies.

I. Catching the Rain in Kathmandu

According to Kathmandu lore, the valley in which the city is located once hosted a giant lake. Surrounded by mountains, this lake was likely drained over several thousands of years—either through geological forces or, purportedly, through the actions of Tibetan saints—leaving a dry high-altitude landscape that is home to over one and a half million people. What remains of the lake is now tucked underground in an aquifer that sits beneath the lower-lying parts of the city. The aquifer is drained to meet the demands of a population that has nearly doubled in the last two decades. The problem of aquifer depletion overlaps with a falling water table in the high-lying parts of the city where the groundwater levels are relatively shallow. Previously, these areas were surrounded by significant amounts of green cover in the form of paddy fields

and other agriculture lands. Under the pressures of urbanisation and rising land values, the valley's green fields are being replaced by grey roads and concrete buildings. As a result, the groundwater recharge that used to occur naturally through the percolation of flooded paddy fields is greatly reduced. To make up for current and future shortfalls in water supply, the Kathmandu municipality has embarked upon multimillion-dollar projects to channel water into the city from distant Himalayan rivers.

For those living in the periphery of the Kathmandu valley, water stress is a daily reality to the extent that, '(virtually) nobody in the city has access to an uninterrupted and safe water supply'.[22] One of the reasons is that the city has grown so quickly that many houses have been built in areas where there is no municipal water supply. Residents without piped municipal water rely upon weekly purchases of expensive 'tanker' water. This water is ferried around the city in trucks carrying 3,000 to 5,000 litre tanks filled with groundwater or river water from nearby hillsides. Due to urban densification, the water demands on the municipal supply are also stretched to the extent that even residents who formerly relied upon the city's piped water supply often turn to tanker water to supplement their resource needs. And while there is hope that a new water transfer project from the Melamchi River will help to meet current resource demands from roughly 2020 to 2030, the population projections combine with concerns for the impacts of climate change to throw a shadow over the optimism.[23] Anticipating future shortfalls, the Government of Nepal is embarking upon additional schemes to transfer distant Himalayan river water into Kathmandu. This model is based upon an inequitable pattern of extracting rural water to feed urban metabolisms, as is prominent in many of South Asia's cities.[24]

The prospects for water flourishing in the Kathmandu valley seem grim when the city's hydraulic challenges are viewed in aggregate. At the micro-scalar level, however, some households and neighbourhoods are taking matters into their own hands to address water access problems. One key is through urban rainwater retention or harvesting. This practice involves retrofitting rooftops and courtyards to catch and store rainwater where it falls, rather than allowing it to run off into drains and roads. Amazingly, if the entire Kathmandu Valley harnessed every drop of water that fell from the skies, it would yield a supply 12 times the city's demand.[25] Even at the household level, a family with a plot of 100 square metres could potentially collect up to 200,000 litres a year, exceeding the 170,000 litre demand of a typical family of five.[26]

Many households across the Kathmandu valley already rely upon rainwater harvesting to a large degree. While they are by no means in the majority of water users or managers, these households offer quiet, unassuming examples of water self-reliance that are slowly convincing neighbours of the efficiency and cost-savings of harnessing the rain. An exemplary household is located in Kathmandu's northwest corner, close to the famous Swayambhunath temple. Designed and built by a former construction manager, the four-floor facility includes space for both a family of seven and a daytime Montessori school that the owner runs with his wife and extended family members. On the rooftop, the building hosts rainwater harvesting infrastructure and biosand filters to process the rainwater for consumption. On the ground, the building features more water-saving technologies: a recharge well and a series of greywater filtration tanks. Both of these systems replenish the groundwater that the household additionally relies upon. None of this infrastructure is readily apparent to the untrained eye; it blends in with the landscape and with the neighbouring houses, which are of a similar height.

The structure in question was built to exacting water efficiency standards out of necessity. While it is connected to the municipal water supply, the pipes flow only three to four times a

month for a few hours each time. The neighbourhood-wide dearth of municipal supplies forces the surrounding households to purchase water from tankers who charge varying rates based on the frequency of purchase as well as the fluctuations of market rates. The expense of tanker water adds up quickly, costing a typical household anywhere between 10 to 20 percent of their monthly income. For nearly five years, however, these costs were largely avoided by the owner of the Montessori school through the installation of rainwater harvesting and groundwater recharge systems. While the initial investment was roughly US$3,000 in 2010, it wasn't until 2015 that the owner had to first purchase tanker water due to high groundwater iron levels, and by that time the overhead costs had been recovered through the savings on tanker water. The financial benefits continue since tanker water only needs to be purchased in three to four months of the year when rainwater is in short supply. The system even provides insurance in times of crisis. During the 2015 earthquake that brought the Kathmandu Valley to a standstill for several months, the owner was able to provide drinking water from his rainwater harvesting system to both his family and his neighbours. This was a vital safeguard at a time when drinking water, like food and petrol, was scarce.

While rainwater harvesting is difficult to upscale, and while it takes significant financial investments as well as substantial amounts of maintenance, it is a surprisingly viable means of water self-reliance. If more rain were to be caught where it falls, the need to transfer large amounts of drinking water from faraway places would diminish. This would help to fix water transmission waste and system loopholes while amending the scope and extent of the structural violence that is inherent in many urban water regimes. In addition to fostering water management practices that are more just, an embrace of rainwater harvesting would allow for a model of water flourishing that is premised upon human flourishing with the rains.

A key challenge to enable this water flourishing, and this flourishing with water, is to get people to think differently about the value of rainwater. As the owner of the Montessori school said in an interview, it can be an uphill struggle to convince residents that filtered rainwater is drinkable. One hurdle, he suggested, is that people perceive that 'the water you pay for is good water but the water you get for free is "bad water"'. Since he serves this rainwater to the children at his school, and since he also consults part-time at a company that designs and installs rainwater harvesting units, he confessed that in both his professions he was 'struggling' because people have 'still not understood' the value of catching the rain. This statement indicates how rainwater is presently a form of 'shadow water,' as its value is predominantly invisible and marginalised in mainstream water management practices and planning processes.[27] The preference for purchased water itself reflects an emerging cultural orientation to institutionally managed waters as superior.

Despite the challenges, there are existing infrastructures whose example could prove influential to promoting the uptake of urban rainwater retention in ways that harness existing cultural commitments and resource relationalities. These are the centuries-old stone spouts that service many of Kathmandu's low-income residents in times of water scarcity. Residents, and women in particular, turn to these infrastructures as a valued source of 'pure' water that supplements the resources acquired from pipes and tankers. The spouts are also sites of ritual propitiation to the regional gods and goddesses associated with hydrological bounty. As such, they are annually maintained through neighbourhood coordinated acts of cleaning and repair that align with cosmologically and astrologically significant times of the year. What few residents themselves realise, however, is that the spouts were engineered centuries ago to channel rain-fed streams and ponds into the city via underground networks. This channeling of rainfed waters enabled the flourishing of urban settlements with a consistent supply of

water whose use was embedded in social networks guided by religious taboos and mandates. It is for this reason that scholars argue that the stone spouts demonstrate how water security is a 'cultural process' informed by the 'more-than-utilitarian' dynamics and tensions of water supply.[28] As these stone spouts dry up due to dizzying rates of development, which disrupts underground hydrological networks, there is scope to translate the cultural process of stone spout maintenance to socially sanctioned and government-promoted acts of rooftop and courtyard rainwater retention. Once expanded, such efforts would help to offset the infrequent piped municipal water supplies while fostering the sense of shared obligation for the provision and protection of resources that is key to our conceptualisation of water flourishing.

II. Groundwater Replenishment in Perth, Western Australia

Beneath the sandy soils of the Swan Coastal Plain lie ancient aquifers that have become increasingly important sources of urban water supplies for Perth, Australia's fourth largest city. During the middle decades of the twentieth-century, the people of Perth relied on a network of dams on the city's outskirts for their potable water supplies. From the 1970s, however, a winter rainfall decline diminished the usefulness of these sources, and the public water utility turned to groundwater reserves to meet the shortfall. Within two decades, groundwater was supplying almost half of the city's water. As the region's drying trend intensified in the early 2000s, the state government invested in seawater desalination plants to slake the suburbs.

Increasingly expensive and energy-intensive, new dams, new bores, and later, new desalination plants were all schemes to develop new water sources for a growing city experiencing a drying climate. Although successive campaigns for water conservation since the 1970s have gone some way to alleviating the strain on Perth's limited water resources, the city's water history reflects the wider preoccupation among water managers to engineer techno-fixes to urban water problems, with plans mooted to use Antarctic icebergs and pipe water over vast distances.[29] What these schemes could not address was the combined toll of increasing groundwater extraction and declining runoff, thanks to the drier conditions. The resultant decline in the water table was not only a worrying sign for the future of Perth's most accessible potable water source, but also for the health of wetlands and other ecosystems that depend on it.

This case study is typical of the exponential trends associated with the Great Acceleration, and declensionist narratives of human exploitation of scarce resources. Human activity, in these narratives, is antithetical to flourishing - a trope that had traction among our workshop participants. Yet in Western Australia, there are indications that this arc of despoilment could take an alternative route. There, the government has invested in an approach that offers the city an opportunity for water flourishing: recycling wastewater. Since the 1970s, Perth's wastewater disposal system has gradually shifted from septic tanks to ocean outfall from centralized treatment plants. The recently adopted recycling strategy in Perth is called 'indirect potable reuse', which is also used in the United States, Europe, Israel and Singapore. In Perth's case, this system involves treating municipal wastewater, storing that treated wastewater in the groundwater aquifer where it mixes with other water, and then extracting that water for conventional water treatment and distribution.[30] Elsewhere, the treated wastewater is stored in other kinds of 'environmental buffers', such as rivers, lakes or reservoirs.

For Perth, the groundwater buffer provides at least two key benefits for both humans and other-than-humans. Firstly, pumping the treated wastewater into the aquifer could improve the condition of urban wetlands, while ameliorating salt water intrusion from both estuaries

and the ocean.[31] Second, the groundwater 'phase' helps to enhance the popular acceptance of the program, which has so far avoided the 'yuck factor' associated with other efforts to establish water recycling schemes in Australia and elsewhere.[32] The very nature of the aquifer as a form of 'shadow water' works to benefit this approach to water management. In Perth at least, lay understandings of the aquifer as an underground 'tank' could co-exist with its more opaque and 'sponge-like' material constitution.[33] Through the replenishment of the groundwater system, this approach to wastewater recycling offers opportunities for human and other-than-human water flourishing.

Beyond the particular form of this wastewater recycling program is the significance of re-valuing wastewater as a desirable resource, rather than as undesirable waste. Western cultural mores and Chadwickian sanitation combined to foster socio-technical systems for the rapid, permanent, and sterile expulsion of human effluent from urban life.[34] By spatially and metaphorically displacing this waste, these processes historically detached human consumption from the visceral materiality of its resulting excrement.[35] The infrastructures of wastewater reuse and groundwater replenishment, however, facilitate the physical reconnection of these components of the urban metabolism in productive and palatable ways. Where these components intersect with vulnerable ecologies, as in Perth, such a circular economy can facilitate flourishing for both humans and other-than-humans.

With the region's drying trend forecast to continue in a warming world, the economic and environmental value of wastewater will likely increase as alternatives become relatively more expensive and inaccessible. As local hydrologist Don McFarlane observes, 'Treated wastewater is a water resource that reliably grows with population'.[36] Culturally too, the re-evaluation of wastewater as a means to sustain particular lifestyles and livelihoods is especially attractive. Waste in this case may return, but it does so in such a way that retains what Gay Hawkins describes as the 'literal and moral distance from bodily waste' that city dwellers prefer.[37] The waste component of the metabolism remains invisible, while potable water flows unabated. This mode of water flourishing offers a hopeful counter-narrative to an otherwise gloomy trajectory for Perth's drier water future, as predicted by global climate models.

Yet wastewater recycling is not without its problems. Chief among these is the perpetuation of existing large-scale modernist approaches to water management, what Zoë Sofoulis calls 'big water'.[38] These sociotechnical systems of municipal water supply involve the centralized provision of potable water and disposal of sewage that rely on large-scale engineering projects and help to facilitate inconspicuous consumption.[39] Since the infrastructure of water supply and sewerage are not disrupted, cultures and practices of water consumption that have historically encouraged profligacy remain unchallenged.[40] The hidden nature of the wastewater recycling process continues to insulate water users from the environmental toll of their behavior. This form of flourishing might also have implications for the climate. Although this form of water resource development might ameliorate some impacts of urban development and water use on local aquifers, groundwater replenishment produces a sizable carbon footprint. At present, the Perth scheme exceeds the carbon footprint of the city's desalination plants, which are powered by renewable energy .[41] At time of writing, the state government is building a renewable energy generator to supply the needs of an expanded wastewater recycling scheme.[42] Perth's water flourishing, therefore, is dependent on reconciling the tensions between energy, ecology, and consumption.

III. Everglades Restoration, From Sheet Flow to Compact

Nearly hidden behind snooze-inducing water management discourse in Florida—which is saturated with terms like adaptive management and stakeholders and interests—is an audacious goal: restoring the Everglades, a vast and iconic subtropical wetland that was reduced in size by half over the course of a century. Beginning in the late 1800s, mostly-white settlers sought to drain the swamp for the purposes of flood control, agriculture, and real estate development. The 'sheet flow' of water that had flowed seasonally from north to south dried up, Florida's coastal cities formed and boomed, suburbs sprawled, agriculture expanded, and then, by the late 1900s, the very same state and federal agencies that had led Everglades drainage were tasked with restoring the ecosystem. Restoration, of course, could never be complete: no one is going to move seven million people or convince farmers and coastal homeowners to walk away from high-value land. Still, Everglades restoration polls well, is guided by a federally-and-state-funded comprehensive plan (it is the costliest wetlands restoration project in the world), and generates new science.

In Everglades restoration, the dominant image of water flourishing is that of 'sheet flow', of fresh water slowly traveling south along a limestone shelf, over more than a hundred miles, before nearly-imperceptibly comingling with salt water as it flows out to sea. Sheet flow is an emotional term, popularized by an influential local environmentalist in the early 1980s and capable of gathering hopes and nostalgia. The Comprehensive Everglades Restoration Plan (CERP) aims to remove hundreds of miles of canals and levees crisscrossing the region, in order to restore sheet flow. This, in turn, relies on 'decompartmentalization', which is the geographical and hydrological reconnecting of the region that reverses its previous compartmentalization into distinct zones for agriculture, residential settlement, and the environment (the latter including water conservation areas and a national park).

While for some Floridians sheet flow is an aspiration, or a technical challenge, others recall living in its midst. Joe Frank (Panther clan) grew up on and near the Seminole Big Cypress Reservation, the most remote and swampiest of the six discontinuous reservations governed by the Seminole Tribe of Florida. He recalls summer sheet flow that turned the land into islands, and he and other children would play in the clean, flowing water. Daisi Jumper (Panther) recalls that when the water sheet flowed through the elevated and open-sided chickee homes where she grew up, 'You could fish from your own bed!'.

Though Frank, Jumper, and others remember the embodied experience of living with sheet flow, it is much more common for Floridians to conceptualize sheet flow as undifferentiated slow-flowing water, with no people in its path. In the nearby diverse farm town of Clewiston, which includes the headquarters of the United States Sugar Corporation (the largest sugarcane-based sugar producer in the US), the absence of people in invocations of sheet flow did not escape the attention and criticism of residents. They suspected that environmentalists who advocated for Everglades restoration, and who criticized agriculture for damaging Everglades water quality, sought to remove the region's residents. When in 2008-09 it appeared that the state was going to buy out US Sugar in order to restore vast acres of farmland to wetlands and create the 'missing link' of floodable land that would restore sheet flow, then-Clewiston mayor Mali Gardner viewed the environmentalists' and water managers' goal of sheet flow as a form of disregard for rural communities: 'A lot of people who are involved in policies and environmental issues, they have been saying for years that their main focus is to take the land and flood all of it, and to heck with the communities. [They] want a sheet flow from Lake Okeechobee all the way down to Miami'. For various reasons

(for example, subsidence), restoring sheet flow is unlikely, even impossible, and in any case the buyout plan fizzled. Nevertheless, the powerful image of sheet flow is one example of the broader modality of removing people—sometimes physically, sometimes symbolically—that often characterizes wetlands restoration projects in the United States and elsewhere.

Restoration harkens to the past, to a time before the degradation of an ecosystem. Water flourishing is written into restoration models and environmental law as the time before people messed it all up. But that is not quite right: more specifically, the potentially-restored Everglades reaches back to the time before white settlers arrived. Seminoles, as an Indigenous people, discursively occupy the time and space of 'nature', while white people bring 'history'. Thus, the problem with prevalent images of water flourishing in settler states like the United States is not only that they exclude people: it is also that they thereby maintain a racial line between people understood (not entirely inaccurately) as destroyers of nature—that is., settlers—and those who are (or are one with) nature, that is, Indigenous peoples. Indigenous peoples therefore become further associated with the past, not the future.

Upon announcement of the subsequently-scuttled U.S. Sugar buyout in 2008, David Guest, a lawyer with Earthjustice Legal Defense, praised the planned restoration of a flow way by telling *The New York Times*: 'This is putting it back the way it was in 1890…. When you come back in 20 years, it will look indistinguishable from the way it looked before the white man'.[43] Before the white man came. That is the dream, the restorative dream, dreamt for and by the white man, who longs to see that which he destroyed.

Is it possible to transform waterscapes to a state of flourishing more 'natural' than ever? Why is it so hard for settler discourses to envision Indigenous communities becoming more indigenous than ever?

Consider as one materialization of water flourishing something less romantic than sheet flow: the 1987 water compact between the Seminole Tribe of Florida and the State of Florida.[44] It was negotiated after Big Cypress residents and other Seminoles noticed the destruction of their waterscapes wrought not only by the mid-century drainage of the region but also by the seasonal actions of their neighbors to the north. Recall that Everglades water flows from north to south. In the relatively dry winter, which is the height of the growing season, non-Seminole farmers to the north of the reservation would pump water from the canals onto their own fields, reducing the reservation's supply. The reservation turned into a flood zone in the wet summer, as landowners to the north pumped water off their fields and sent it south, inundating portions of the reservation. The compact was signed in 1987; it guaranteed water rights and access to Seminoles, created tribal water law, rendered the Seminole Tribe 'like a state' for the purposes of regulating water under the US Clean Water Act, and otherwise established water policies and practices that, to this day, shape the waterscape. Some Big Cypress residents see trade-offs—more on-reservation regulations—and express concerns that the compact's protections are weaker than possible litigated outcomes.

The significance of the compact for water flourishing includes water rights and also, perhaps less obviously, relations of obligation that are shaped by water. Water respects neither private property lines nor political borders. It brings people into relation with one another who may not otherwise understand themselves as such. This, along with the more just distribution of water, is the substance of water flourishing: the relations of obligation across difference that come into being through the materiality and the adjudication of water. Sometimes it is hard to see flourishing in the water compact's impact: parties disagree and sometimes threaten to sue, endless meetings address how to measure water as it moves from one jurisdiction to another,

bureaucracies harden, and all the while the Everglades ecosystem continues to degrade. And yet, water quality improves, hydrological justice gains a toehold, and the ecological and social wellbeing of the Big Cypress Reservation moves in the right direction. Compromised and possible modes of water flourishing emerge relationally, through hard work and relations of obligation and interdependency.[45]

Conclusion

To imagine (water, or any) flourishing with people is to face politics, and it is to recognize the irreducibility of relationality. Indeed, we wonder if the evacuation of politics is one effect, and possibly also a condition, of environmental flourishing imaginaries that do not, at least in the first instance, include people. Or, politics come into view narrowly, often as water 'governance' focused on participation, stakeholders, and other related procedural foci that pervade what philosopher Jeremy Schmidt calls 'normal water'.[46] Always, there have been, and will be, other ways of thinking, and sometimes those generate change at the highest levels. For example, the 2015 UN Sustainable Development Goals include one, #6, on 'clean water and sanitation', and like all of the SDG goals, but unlike so many water governance initiatives, it does not conjure 'stakeholders' as the presumed water subjects: instead, the SDG goals seek the participation of 'communities'. Although 'community' is a much-debated term, it has the virtue of expanding beyond the liberal economic logic of stakes and interests.[47] Water activists around the globe, note Schmidt and Matthews', call for "water justice and for forums in which substantive values are not evacuated from structural considerations in the name of procedural efficiency'.[48] Those substantive values and their articulations vary, regionally and otherwise. They are differently embodied and experienced, as ethnography and history clearly show. As such, to abstract flourishing from ethnographically and historically observable variability, in water practices and imaginaries alike, inevitably and unduly constrains it.

We have aimed, in the Anthropocene Campus Melbourne workshops and in this article, for something neither elemental nor planetary, because both the elemental and the planetary, which share the characteristic of singularity, risk evacuating politics and peoplehoods. Insofar as water connects people(s) and polities, water flourishing is more than a mode of being. It is a commitment in *relation* to other people and communities, it is inherently substantive in its politics, and it is part and parcel of sovereignty and citizenship. Without such a commitment to flourishing's politics, water retention, recycling, and restoration remain narrowly technical projects, and flourishing recedes from the possible toward a people-less horizon. Water is a key substance of the Anthropocene, and, as such, its ethnography and history direct us not only toward crisis but also to the relational dimensions of flourishing

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Endnotes

1. For analysis of discourses of scarcity and security, see Jeremy Schmidt's *Water: Abundance, Scarcity, and Security in the Age of Humanity*, New York University Press, New York, 2017.

2. UN materials on water scarcity emphasize not only the challenges but also the opportunities in terms of scarce resources. For example, UN 'water facts' describe opportunities to face challenges at the national level this way: 'Water has to be treated as a scarce resource, with a far stronger focus on managing demand. Integrated water resources management provides a broad framework for governments to align water use patterns with the needs and demands of different users, including the environment'. See 'Water Scarcity', *UN Water* nd. (http://www.unwater.org/water-facts/scarcity/, accessed 3/2/19).

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6. Brian Swimme and Mary Evelyn Tucker, *Journey of the Universe*, Yale University Press, New Haven, 2011, p. 1.

7. This is not meant to be a dodge, a quick escape from the problem of defining or describing *real* flourishing. First of all, it is hard to define and defend ways of being that cannot be fully envisioned. But second, and somewhat contradicting this, it is also the case that modes of flourishing proliferate in the nooks and crannies of our shared world, but their very multiplicity resists definitive description. See below for how we grapple with this ethnographically.

8. Swimme and Tucker, p. 117.

9. Paul Crutzen and Eugene Stoermer, 'The Anthropocene', *Global Change Newsletter*, vol. 41 2000, pp. 17-18; Jason W. Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*, Verso, London, 2015; Andreas Malm, *Fossil Capital: The rise of steam power and the roots of global warming*, Verso, London, 2016; Donna Haraway, 'Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin', *Environmental Humanities*, vol. 6, 2015, pp. 159-165; Donna Haraway et al., 'Anthropologists Are Talking – About the Anthropocene', *Ethnos*, 2015, DOI: 10.1080/00141844.2015.1105838.

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11. Berlant, p. 7.

12. Berlant, pp. 10-11.

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15. On the arts of noticing, see Anna Lowenhaupt Tsing, The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins, Princeton University Press, Princeton, NJ, 2015.

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18. Yazzie and Baldy, 2018.

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23. Rest, p. 4.

24. Nikhil Anand, *Hydraulic City: Water and the Infrastructures of Citizenship in Mumbai*, Duke University Press, Durham, NC, 2017.

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26. Shrestha, pp. 27-30.

27. McLean et al., pp. 615-20.

28. Olivia Molden, Nicholas Griffin, and Katie Meehan, 'The cultural dimensions of household water security: the case of Kathmandu's stone spout system', *Water International*, vol. 41, no. 7, 2016, pp. 994.

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33. This experience contrasts with the findings of Andrea Ballestero, 'Spongy Aquifers', *Limn* 7 (2016): limn.it/articles/spongy-aquifers-messy-publics/

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36. McFarlane, p. 210.

37. Hawkins, p. 350.

38. Zoe Sofoulis, 'Big water, everyday water: a sociotechnical perspective', *Continuum*, vol. 19, no. 4, 2005, pp. 445-63.

39. Shove, *Comfort, Cleanliness, and Convenience in the Social Organization of Normality*.

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45. Elsewhere (Cattelino, 2008) I have theorised sovereignty as a relationship of interdependency, not (only) autonomy.

46. Schmidt, *Water*, p. 6.

47. Jessica Cattelino, 'Of climate and chilling effects', *Public Culture*, vol. 31, no. 2, 2019, 215-234.

48. Schmidt and Matthews, p. 83.