



Futuring 'Blue Urbanisms':

Pluralising the Littoral in Urban Southeast Asia

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Contemporary coastal cities have long been theorised through a distinctly terrestrial lens, in which the sea seemingly exists as a shadowy backdrop against everyday life in the city. Thinking with / from the sea invites us to trace the many ways that coastal waters work in co-shaping and remaking diverse urbanities, and ways of being urban(e). Drawing on recent planning approaches structured loosely around the concept of 'Blue Urbanism', our project considers how discourses around this notion offer a reference point for city planners, investors, and policymakers to connect previous risk-driven discourses of disaster preparedness to futuring practices. Such practices often embrace optimistic imaginaries that enliven visual,

spatial, and cultural connections between cities and oceans, and further call upon strengthening integrated management approaches. Drawing on past work across three metropolises in Southeast Asia - Jakarta, Metro Manila, and Singapore - we plan to unpack some of the more vision-driven, utopic and dystopic assumptions around 'blue urbanism(s)' that are being witnessed across diverse high-density urban seacoasts, particularly in times of relative sea level change, salinisation, and land subsidence.

Keywords: Coastal transformation; urban ecofutures; sea level change adaptation; Southeast Asia



<https://youtu.be/Sa77uHgRs7Y>



Walling off the coast, Navotas City, Metro Manila.

Intermittent breaks interrupting the wall were put in place after protests from fishers whose livelihoods depended on daily accessing the coastal waters of the Bay of Manila. The sensory disconnect between land and sea was further evinced in the mistrust over having to moor *bankas* and other fishing vessels beyond the wall, particularly as the boats could not be protected nor seen during typhoons and other extreme weather events. Photo: R. Siriwardane, 2017©

In the so-called Global South, densely populated urban shorelines are often depicted as veritable riskscape, re-chiselled through cyclical narratives of exposure, ecological disaster, social marginality, and deepening precarity (Brown and Michael, 2003; Bakker et al., 2017; Octavianti and Charles, 2018). At the same time, coastal zones are being increasingly remade as interventionist spaces for hydro-engineering experimentation and as new profit frontiers, in which hybrid sciences and political acumen come together in responding to creeping sea level change compounded by extreme weather events, coastal erosion, salinization, liquefaction, and land subsidence (Boomgaard, 2007; Firman et al., 2011). These solutions suggest particular forms of adaptation envisioned, at times colonially embedded, through purely technical means (see Buleri and Chapman, 2010; Malm, 2013; Battacharyya, 2018). On the other hand, the avid fervour with which coastal land acquisition and privatisation projects are being rolled out across diverse neoliberal cities, from Mexico City to Lagos, Mumbai to Jakarta, present contradictory world-making visions of waterfront living through grand futuristic projects (Colven, 2017; Herbeck and

Flitner, 2018). We might rather imagine these contemporary transformations as a “coast rush” (Siriwardane-de Zoysa, 2020) in ways that parallel any historic gold rush as a frontier practice, foreshadowing land privatisation, shoreline real estate development and gentrification, amid disconcerting socio-environmental uncertainty.

Intriguingly, against this paradox, what is also witnessed are the rationalities and enactments of architectural utopias and neo-libertarian political projects anticipating ‘amphibious’ and terra-aqueous forms of dwelling, for example, taking the form of floating micro-nation sovereignties and seasteads (Steinberg et al., 2012). Such visions advance particular sensibilities around idealised ways of urban living with incursive marine waters (Simpson, 2018), often pointing toward nascent desires in the *offshoring* of everyday life. What can then be said of these antipodal littoral place-making practices that rupture singular and conventional ways in which urban seacoasts are normatively imagined, materially remade, and socio-politically contested? Fluid, mutable urban shorelines also prompt us to reconsider manifold relations and socio-materialities of the metropolitan



Fencing the sea? Sole passenger waiting for embarkation at Marina South Pier, Singapore. The coast around Marina South is protected by revetments and is mainly uninhabited – just like large parts of Singapore's coastline. Photo: J. Herbeck, 2017©

littoral, and the conventionalised notions that are believed to both connect and to separate what is often understood to be 'land', from 'sea.'

Introduction: Blue-Grey Entanglements – From Coastal Cities to Oceanic Urbanities?

At first glance, contemporary imaginings of the city and the ocean sit antithetically to one another, particularly within certain modernist imaginaries. In contemporary sociological scholarship, land-sea interactions have often been relegated to the littoralism(s) of everyday life, particularly the rural-peripheral. Yet, as transcultural and decolonial writing on marine lifeworlds aptly illustrate, the conceptual elemental divide between dry(er) fixities and the cultural politics of *land*, against the seemingly apolitical, ahistoric liquidities of the sea (and the fluvial) in-motion hold little resonance in indigenous ways of knowing and being, and remains historically contingent (Sharp, 2002; Hau'ofa, 2008). With the exigencies of climate change, thematically, the urban and the marine barely exist as distant spaces, calling into question conven-

tional representations of the 'urban' through its built form and multiple socio-material, symbolic, and digital assemblages (the 'grey'), opposed to saltwater ('deep blue').

At the same time, littoral qualities of urban spaces have been in many ways *naturalised*. Historically, urban settlements flourished across deltaic and fluvial spaces, as centres of political power mediating access to the world and its insular hinterlands (Sutherland, 2007; Land, 2017). Island cities themselves were 'islanded' as hubs while at the same time being fortified militarily by altering waterscapes and metabolic flows. They often were politically insularised and territorialised as imperial colonies and overseas territories, as spaces of quarantine, political exile, retreat, and in the contemporary neoliberal context, as tax havens, tourist and real estate utopias (see Baldacchino, 2005; Kothari and Wilkinson, 2010; Salazar, 2010; McMahon, 2016). The often-cited "maritime city" might stand as a tautology at times, making way for multiple brandings, ushering in diverse identities of the port city and 'sailor towns' now refashioned through glitzy waterfront redevelopment projects and megaprojects in land reclamation that have panned out for over a



Dyking boundaries along the Bay of Manila, San Jose.
Photo: R. Siriwardane, 2017©

century (see Cooper, 1987; Nas, 2005; Graf and Chua, 2009; Morita, 2016; Silver, 2018).

This unparalleled expansion of metropolitan waterfronts is now one of the most discernible encounters between city and the ocean, transforming coastal spaces into iconographies of world capitals and giving way to a very different sensory aesthetics of the built shoreline, in which water and skyline visually meld into a very distinct form of city identity-making, 'fore-shored' in the littoral. Images of floating cities, evinced by the turn towards amphibious architecture, still remain futuristic. Yet arguably, coastal cities have been making way for the reinvention of 'oceanic cities', much like the Singaporean artist Sean Lee's dystopic images of a technologically hypermodern 'blue' Singapore (Lee, 2019) that is invariably underwater.

This "blueing" of cities (rather like their planned greening) is gaining increasing scholarly attention, invoking for example the notion of "conscious coastal cities" (Mega, 2016) and forays into blue-green urbanities (Assmuth et al., 2017). Timothy Beatley's work *Blue Urbanism* (2014) and 'blue biophilic cities' (2018) are among the visible of these urban planning philosophies. Advancing on his formative work on "green urbanism" and how cities have a socio-ethical imperative to reduce their ecological footprint, Beatley (2014) argues that many of the world's metropolises that have historically developed in deltaic and other coastal spaces have lost their social connection to the sea and the oceanic realm in their entirety.

What Beatley terms as "ocean blindness" is then offered a corrective in how 'feelings of connectedness' could be fostered by coastal cities, not just in the way of mitigating and adapting to changing sea levels and

extreme weather events, but in reimagining the very paradigms of urban development and everyday life, together with their concomitant practices of production and consumption. These sensibilities appear as being unflinchingly utilitarian and resource-centric, drawing on the manifold socio-economic promises that the urban maritime offers, from advancing new recreational practices, tapping potential of renewable energy (i.e. tidal power, gas extraction), exploring alternatives to terrestrial surface in easing traffic congestion, to exploiting medicinal compounds, aquaphonics, and "community-supported" fisheries. Beatley also calls for novel ways of being urban(e), a profound transformation of its citizenry into what he terms as the *homo aqua urbanis* – crosscutting most aspects of lived life from consumerism to political activism.

While we take little issue with the idealism behind this rallying call, we find the planning-oriented perspective and the flattening of transcultural differences in land-ocean imaginaries rather limiting. Yet, as a planning mantra, blue urbanism arguably remains a primarily Euro-American discourse on enculturing new sensibilities, mirroring the terrestrial quest for 'green' urbanisms (see Mega, 2016; Long and Rice, 2019). The planning visions barely address questions of unequal (spatial) access, particularly with regard to how socio-environmental change and strategic responses to the multiple crises of global urbanism is profoundly precipitating and reshaping privileged urban enclaves (Hodson and Marvin, 2010), further splintering cities into distinct binaries that distinguish the safe / secure from the toxic and hazardous, the overdeveloped from the underserved, elite



The Seawall. An object of political contestation - a subject contesting politics. Photo: Anna-Katharina Hornidge, 2017 ©

cosmopolitanisms from the historically marginalised.

Written partially as a photographic essay, we question some of the more vision-driven, utopic assumptions around blue urbanism(s) as a rallying cry for urban planners, architects, policy technocrats and investors alike, especially putting into question their strong focus on the agency of city governments and their relative neglect of spaces of informality and everyday experimentation in the un/remaking of diverse urbanities. To further problematise antithetical sensibilities around 'blue urbanity', we focus on three distinct and interrelated tropes that undergird this notion, blue urbanism(s) as: *taskscape*s of socio-ecological change and consumption; b) *speculative futuring* in the making of city identities and by extension urban/citizens; c) producing a *littoral-multiple* across increasingly socially uneven and splintering cities. In doing so, we draw from diverse and at times antipodal spaces across three socio-culturally and historically distinct archipelagic metropolises – Metro Manila, Jakarta and Singapore.

Blue Urbanisms as Taskscapes: Reconfiguring Risk and Opportunity of Sea Level Change Adaptation

Images of relative sea level change compounded by the effects of land subsidence are invariably dystopic and more often hackneyed in their representations – flooded streetscapes, submerged islands, sinking cities, and the like. Yet, these imaginaries barely reveal the antipodal trends and contradictions between risk-centred protective (and reactive) paradigms and solutions for SLR adaptation on the one hand, and opportunity-driven dynamics for capitalising and incentivising particular solutions over others.

At the same time, the binary logic of framing dynamics of change as either articulations of risk or opportunism in their entirety bears the risk of negating less visible and complex webs of vested socio-economic and political interests (crosscutting local, regional, and global scales), that are profoundly shaping why particular adaptive solutions are ultimately prioritised, reconfigured, and implemented over others.

In megacities such as Jakarta and Manila, hotspots of socio-environmental risk have often been identified in spaces cohabited by its urban poor, so that



A perfect curve? A drone image of an 'artificial' beach constructed from imported sand(s) from across the archipelago, which now also makes up Lazarus Island off the southern shores of Singapore. Photo: R. Siriwardane and J. Salleh, 2018©

respective riskscape remain sites of intervention for techno-scientific solutions (see Simarmata, 2018). Considering risky hotspots as merely 'sites of intervention' masks the fluid dynamism of how these sites are cyclically reproduced, first as riskscape that are progressively de-civilianised, often in the name of fortifying coastal margins and edges through protective infrastructure and buffer-zonal regulations. Dyking and other forms of sea wall building create lively and conflict-ridden *taskscape* of nature, place, and dwelling, to invoke Ingold's (1993) notion. Land behind these bulwarks continue to be remade as new forms of grounded space, amendable to land speculation and real estate development (see Siriwardane-de Zoysa, 2020). Incursive waters are enlivened in reshaping the coastline and by extension, the refashioning of 'new' spaces of dwelling and consumption in the 'Waterfront City.' Jakarta's *Waduk Pluit* and Metro Manila's southern reaches of its Bay bear echoes of these aspirational futurities.

While *taskscape* cyclically transform marginalised

riskscape into speculative real estate opportunities, overtime, they offer ways of collectively forgetting (Lee and Yeoh, 2004). Like Manila and Jakarta's urban aquaculture expansion in the 70s and 80s, older histories of informal settlements, the 'soft' marshy historicity of living with daily tidal fluxes, monsoonal flooding, and plebeian sea-related livelihoods such as small-scale fishing, net repairing, ice manufacturing, and ferrying are now deemed irrelevant (at times illicit), to the workings of the dredged, fortified gentrified metropolitan waterfront. Moreover, they may fashion new aesthetics of seeing and being in the hypermodern metropolis in which the "magic of water" (see Corbin, 1988) folds over starchitect-designed grey and glassed skylines. It is almost as if urban salt-water offers itself as a reflective surface to the aspirational dreamscape of the oceanic city, as it gazes both landwards and outwards towards a neon-specked sea.



Picnic area, Pulau Kusu (Singapore). The pilgrimage island has been continuously developed into a tourist site over the past years. Breakwaters protect it from the strong currents and waves of the Singapore Strait. Photo: Johannes Herbeck, 2017©

Blue Urbanism as Speculative Futuring: Between the Utopic and the Dystopic

One of the most revealing rationalities of Blue Urbanism, as a planning rationale, is in capacity for refashioning the identities of coastal cities and in changing the ways the cities are 'futured', at times as adaptive utopias of social experimentation and change, taking for example Singapore (Schneider-Mayerson, 2017), or as socio-spatial frontiers of impending submergence and loss, to invoke northern Jakarta for example (Wade, 2019).

We propose to understand those trends as a new mode of 'speculative futuring.' In doing so, the term 'speculation' is used in two interrelated ways:

i. **The Imaginative-Speculative** – as encompassing the experimental and fantastical when considering urban built form, drawing on how city spaces have been nationally and regionally iconised – from skyline to wa-

terfront. In this context, topical research in sensory urbanism, moral and cultural geographies of place making, emotion and affect (see Low, 2015; Low, 2017) investigates how multimodal representations of our protective / terra-aqueous practices come to be diversely imagined, designed, and materialised in ways that they appear as 'universal' catch-alls for meeting diverse urban needs;

ii. **The Capitalised-Speculative** – this second conceptualisation captures ideas within contexts of investment and venture capital in which the dynamics of risk and profit meld. It is witnessed in is/land prospecting deals for costly dredged and reclaimed spaces against more 'cautionary' practices such as coastal divestment, or in relocating communities, and the de-urbanising of shores and off-shored infrastructural capital.

In face of this binary logic of speculation, the attraction of urban policy makers to terms like Blue



Aspirational gated community development in Parañaque, Metro Manila. Photo: R. Siriwardane, 2017 ©

Urbanism is not surprising. They offer ways of opening up discursive spaces within and beyond city governments confronted with massive projected changes of the connections between urbanised spaces on the coastal fringes and (coastal) waters that they face. At the same time, the term remains easily connectable to the large-scale coastal development many of those cities in Southeast Asia are currently debating and implementing. Such projects are often deeply entrenched in local path dependencies and (post)colonial histories of evaluating and transforming the coast (see D'Souza, 2006; Silver, 2007).

Singapore's Greater Southern Waterfront offers a case in point, in which the materialities of its urban port were rebuilt over, in some ways created 'anew' as a leisured site of public access, a neoliberal and tourist spectacle. This goes hand in hand with endorsing a particular way of being / becoming a littoral citizen, patterned by consumption-led presence and appeal. With the exception of a few privately-owned spaces

on a 99-year lease, for example its ultra-luxury housing estate Sentosa Cove (Wong, 2006; Pow, 2011), much of Singapore's coastal land is state-owned. As a financial powerhouse and techno-scientific knowledge hub that in turn 'exports' its high-density urban living and political-administrative experiments as models for emulation across the Southeast Asian region and beyond, the example of the island nation-state shows how distinct geo-engineering rationalities continue to remake vulnerable urban seacoasts in distinct ways, while visually aestheticizing littoral space as a parallel project.

The Southeast Asian *coastal* condominium building boom, from Penang to Metro Manila, bear witness to high-rise architectural and landscaping sensibilities that allude to those in Singapore, which in turn appear markedly diverse given the neoliberal interplay of developers, architects, and ever-changing design innovations. Yet, the extent to which these "Little Singapores" have been further hybridised



Edging space. What makes a margin, land or sea – as evidenced in this condo development project in northern Jakarta. Photo: R. Siriwardane ©

within local cultural contexts remains an intriguing question, particularly when considering for whom such spaces were erased and remade, however precarious these projects may seem in the long-run due to environmental uncertainty.

Blue Urbanism(s) as Littoral-Multiple

One of the more telling blindspots inherent in a planning mantra such as Blue Urbanism is the fact that it widely neglects that urban shorelines around the world exist as polarised spaces. As a third analytical category, we turn to the notion of the *littoral-multiple*, in order to evoke manifold ways which coastal spaces are imaginatively framed, materialised, and dwelt in. Urban coasts may act as nodal spaces facilitating flows and connections, but also as sites of precarity and uncertainty or conversely, as places of entrenched power, enchantment, and of excess consumption.

What then remains discursively enduring about the sub/urban seacoasts are its antipodal materialities

and symbolic representations of the desired and the reviled, the utopic and the dystopic. At first glance, built urban coasts – in whatever form – reveal the workings of the “dual city,” taking for example Jakarta’s disjuncture between older and newer harbour spaces (Nas, 2005: 32). The politics of spatial utilisation, zoning, and consumption have often been emphasised in recent scholarship, as the rejuvenation of waterfronts require considerable public and / or private investment. Once transformed through private capital or public-private partnership projects (PPPs), coastal spaces assume an exclusionary identity, often frequented by a small elite.

The enduring presence of what could be called the unequal coast / shore reveals striking forms of fragmentation (see Gidel, 2011) and of juxtaposition, in which sites have either been marked as spaces of exclusionary presence on the one hand, and as sites of squalor, danger, and uncertainty on the other. In this context, Setha Low’s framing of body / space / culture



Dwelling along littoral margins. The phenomenon of “sea slumming” was occasionally referred to by urban development agencies in Metro Manila. Meanings of squatting and illicit access and ownership were perceivably transferred to coastal space, particularly where informal housing was cleared to build dikes and embankments. Residents continued to build beyond the wall. Photo: R. Siriwardane ©

(2017: 95) calls to consider a more expansive emotional and relational geography of intermixed imaginaries and practices that recirculate. The urban littoral exists relationally, materially, and symbolically as space that is beyond fixed locations (e.g. beaches, harbours), and continues to forge connections to places such as tidal flats, mangrove swamps, and seagrass beds, as much as its built form comprising coastal construction sites, ‘floating slums’, gated resorts, and condominiums.

In a similar vein, it can be argued that the dualism between the land and the sea does not always hold to closer scrutiny. Mutable definitions of a “coast,” through whose disciplinary and tacit knowledges, and in which historic and contemporary moments, remain a circuitous debate. The shifting interfacial boundaries between sea and land render the littoral

an air of neutrality for it is “neither properly terrestrial nor yet thoroughly maritime, awaiting a metaphoric role” (Mack, 2011: 165). Antithetical elemental imaginaries of *what separates* land from water and how have diversely been perceived across cultures (see Sharp, 2002; Bhattacharyya, 2018). The “urban amphibious” (Land, 2017) offers to be taken as a useful yet knotting starting point in delineating a number of oppositional urban planning, geo-engineering, and other terra-forming practices in keeping incursive waters out, or living with water.

Seemingly antithetical to protective solutions such as diking (in order to keep water out), interrelated rationales of extending land outwards or in creating grounded sites from surrounding sea space are historically located (Charlier et al., 2005), but are not as contradictory to protective solutions as they may



The Wall of Tyranny? With the completion of an elevated sea wall in Kampung Aquarium, North Jakarta, former residents of this demolished kampung have challenged its protective function by referring to it as *temok tyranny* in Javanese. For them, the wall is a daily impediment that disconnects them from the sites of their fishing and ferry livelihoods. Residents claimed the wall was deemed “useless” because much of the flooding was not from the seashore but due to land subsidence. Photo: J. Herbeck, 2018©

appear. Practices such as dredging and land reclamation are just as (paradigmatically) terrestrially-derived (Jenson, 2017), but their form, function, and rationalities for change adaptation seem far more appealing for some than protective infrastructure, and are often purported as being more ‘innovative’ and futuristic. While the interest in amphibious lifeworlds and building practices (Morita, 2016; Land, 2017) has been increasing, we intentionally use “terra-aqueous” in order to illustrate the hybridity between the marine and the terrestrial, the fluid and the grounded, land that is lost and space that is (re-)claimed or built anew.

The politics of near and foreshore reclamation have often privileged formal projects, with lesser attention being paid to what we refer to as “small acts” of adaptationism, at household and community levels. For example, *uruk*, as a form of *nimbun* or self-recla-

mation (in *Bahasa Indonesia*) has long stood as a means with which to “ground” intertidal coastal spaces with flat material including shards of wood, sand, shells, plastic, and other construction debris on which low-impact buildings are erected.

We understand such strategies as parts of a “vernacularizations” of coastal (re)development and adaptation, i.e. the contradiction between the fixity and efficacy of centralised technology-driven coastal development projects, and their actual effects on the everyday life of ‘ordinary’ people (see Perkins and Rumford, 2013). This contradiction also comprises grassroots strategies of transforming and extending coastal lands, partly to also deal with adverse changes of coastal environments (for example, tidal flooding and subsidence) that are taken on individual or collective levels (see Batubara et al., 2018). Could we



Uruk – a different relationship with debris and construction waste. A form of *nimbun* (informal, small-scale terraforming) using wood splinters reused often from discarded material. Nimbun encourages a lively discard economy, and the softer and more pliable the debris, the more it is worth. Photo: R. Siriwardane, 2020 ©

then be left asking whether in face of such strategies, Blue Urbanism holds much sway if at all, given its emphasis on the agency and strategies of cities and city governments. We argue that in its actual conceptualisation, the term tends to overlook the manifold complex entanglements of the everyday, “vernacularized” making of coastal spaces that can be observed across Southeast Asia’s urban archipelagic shores.

Concluding remarks

Our critique of Blue Urbanism rests in its likelihood of being taken as a centralised planning strategy, leaving little room for engaging with the everyday practices of insurgent and other forms of informal, small-scale protection and adaptation. We arguably find the planning perspective and the flattening of socio-cultural differentiation in land-ocean urban imaginaries to be rather limiting. Starting from our

own observations of the multiple forms in which coastal spaces in the three coastal megacities Jakarta, Singapore, and Manila are remade and over-formed by multiple actors, we ask for widened perspectives on the agency and everyday action that impact spatial transformation. We have argued that urban coasts, beyond being vulnerable sites of intervention in face of changing sea levels, are increasingly regarded by city managers as potential elements of globalised city branding initiatives, thereby being transferred into sites of speculation – both with regard to experimental, vision-driven transformations and representations of a hyper-modern ‘blue’ metropolis, as well as with regard to an economic, neo-liberal logic of valorisation of coastal spaces.

Further, we have seen that it is not only the centralised, technocratic projects of waterfront development that determine whether and how coastal cities embrace their coastal environment and find ways of living with the marine waters that they face.

Moreover, socially unequal coasts (or the littoral multiple) sees highly contrasting processes of appropriation unfolding simultaneously, from the construction of privatised gated communities, to everyday activities such as *nimbun* and other practices of informal land reclamation across so-called wastelands and squatter settlements in former harbour areas. Blue urbanism's current focus rests on inspiring and empowering urban governments as the main actors that should drive the re-establishing of the lost connectivity between the urban and the sea. A more inclusive agenda will have to acknowledge the multiplicity of actors that have also had their land-sea connections "lost" through changes in livelihoods, and over generations of shored urban living the metropolitan littoral took on ambivalent meanings of both public space and exclusive access. Further work on blue urbanism will have to allow for global differences and a multiplicity of being urban(e) in coastal cities, also and especially in cities of the global South.

Notes

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References

- Adams V (2013) *Markets of Sorrow, Labors of Faith: New Orleans in the Wake of Katrina*. Durham: Duke University Press.
- Amin A and Thrift N (2017) *Seeing Like a City*. Cambridge: Polity Press.
- Assmuth T et al. (2017) Fair Blue Urbanism: Demands, Obstacles, Opportunities and Knowledge Needs for Just Recreation Beside Helsinki Metropolitan Area Waters. *International Journal of Urban Sustainable Development* 9(3): 253-273.
- Baldacchino G (2005) Islands - Objects of Representation. *Geografiska Annaler: Series B, Human Geography* 87(4): 247-251.
- Bakker M, Kishimoto S and Nooy C (2017) *Social Justice at Bay: The Dutch Role in Jakarta's Coastal Defence and Land Reclamation*. No place: Somo, Both ENDS, TNI.
- Batubara B, Kooy M and Zwarteveen M (2018) Uneven Urbanisation: Connecting Flows of Water to Flows of Labour and Capital Through Jakarta's Flood Infrastructure. *Antipode* 50(5): 1186-1205.
- Beatley T (2014) *Blue Urbanism: Exploring Connections Between Cities and Oceans*. Washington, DC: Island Press.
- Beatley T (2017) *Blue Biophilic Cities: Nature and Resilience Along the Urban Coast*. Cham: Springer.
- Bhattacharyya, D. (2018). *Empire and Ecology in the Bengal Delta: The Making of Calcutta*. Cambridge: Cambridge University Press.
- Boomgaard P (2007) In a State of Flux: Water as a Deadly and a Life-Giving Force in Southeast Asia. In: Peter Boomgaard (ed) *A World of Water: Rain, Rivers and Seas in Southeast Asian Histories*. Singapore: NUS Press, 1-23.
- Bulleri F and Chapman M G (2010) The Introduction of Coastal Infrastructure as a Driver of Change in Marine Environments. *Journal of Applied Ecology* 47(1): 26-35.
- Brown N and Michael M (2003) A Sociology of Expectations: Retrospecting Prospects and Prospecting Retrospects. *Technology Analysis & Strategic Management* 15(1): 3-18.
- Chua B H (2011) Singapore as Model: Planning Innovations, Knowledge Experts. *Worlding Cities: Asian Experiments and the Art of Being Global* 31: 29-54.
- Clark W C (2003) Urban Environments: Battlegrounds for Global Sustainability. *Environment* 45(7): i.
- Colven E (2017) Understanding the Allure of Big Infrastructure: Jakarta's Great Garuda Sea Wall Project. *Water Alternatives* 10(2): 250-264.
- Cooper F (1987) *On the African Waterfront: Urban Disorder and the Transformation of Work in Colonial Mombasa*. New Haven and London: Yale University Press.
- Doody P (2004) Coastal Squeeze: An Historical Perspective. *Journal of Coastal Conservation* 10: 129-138.

- Firman T et al. (2011) Potential Climate-Change Related Vulnerabilities in Jakarta: Challenges and Current Status. *Habitat International* 35(2): 372-378.
- Graf A and Chua B H (eds) (2009) *Port Cities in Asia and Europe*. Abingdon, Oxford: Routledge.
- Hau'ofa E (2008) *We are the Ocean: Selected Works*. Hawai i: University of Hawai i Press.
- Helmreich S (2011) Nature/Culture/Seawater. *American Anthropologist* 113(1): 132-144.
- Herbeck J and Flitner M (2019) Infrastructuring Coastal Futures: Key Trajectories in Southeast Asian Megacities. *Die Erde—Journal of the Geographical Society of Berlin* 150(3): 118-130.
- Hodson M and Marvin S (2010) Urbanism in the Anthropocene: Ecological Urbanism or Premium Ecological Enclaves? *City* 14(3): 298-313.
- Ingold T (1993) The Temporality of the Landscape. *World Archaeology* 25(2): 152-174.
- Kothari U and Wilkinson R (2010) Colonial Imaginaries and Postcolonial Transformations: Exiles, Bases, Beaches. *Third World Quarterly* 31(8): 1395-141
- Land I (2017). The Urban Amphibious. In: Worthington D (ed) *The New Coastal History*. Cham: Palgrave Macmillan, 31-48.
- Lee Y S and Yeoh B S (2004) Introduction: Globalisation and the Politics of Forgetting. *Urban Studies* 41(12): 2295-2301.
- Lee J (2019) Singapore Artist Transforms Singaporean Scenes into Fascinating Dystopian Underwater Worlds. *Mothership*, June 22 2019, Retrieved from: <https://mothership.sg/2018/06/dystopian-underwater-singapore/>.
- Long J and Rice J L (2019) From Sustainable Urbanism to Climate Urbanism. *Urban Studies* 56(5): 992-1008.
- Low K E Y (2015) The Sensuous City: Sensory Methodologies in Urban Ethnographic Research. *Ethnography* 16(3): 295-312.
- Low S (2017) *Spatializing Culture: The Ethnography of Space and Place*. New York: Routledge.
- Mack J (2013) *The Sea: A Cultural History*. London: Reaktion Books.
- Malm A (2013) Sea Wall Politics: Uneven and Combined Protection of the Nile Delta Coastline in the Face of Sea Level Rise. *Critical Sociology* 39(6): 803-832.
- McFarlane C (2011) *Learning the City: Knowledge and Translocal Assemblage*. Chinchester: Wiley-Blackwell.
- McMahon E (2016) *Islands, Identity and the Literary Imagination*. London: Anthem Press.
- Mega V (2016) *Conscious Coastal Cities: Sustainability, Blue Green Growth, and The Politics of Imagination*. Cham: Springer.
- Morita A (2016) Infrastructuring Amphibious Space: The Interplay of Aquatic and Terrestrial Infrastructures in the Chao Phraya Delta in Thailand. *Science as Culture* 25(1): 117-140.
- Octavianti O and Charles K (2018) Disaster Capitalism? Examining the Politicisation of Land Subsidence Crisis in Pushing Jakarta's Seawall Megaproject. *Water Alternatives* 11(2): 394-420.
- Ong A (2011) Introduction: Worlding Cities, or the Art of Being Global. In: Roy A and Ong A (eds) *Worlding Cities: Asian Experiments and the Art of Being Global*. Chinchester: Wiley-Blackwell, 1-27.
- Owusu-Daaku K N (2018) (Mal)Adaptation Opportunism: When Other Interests Take Over Stated or Intended Climate Change Adaptation Objectives (and Their Unintended Effects). *Local Environment* 23(9): 934-951.
- Padawangi R and Douglass M (2015) Water Water Everywhere: Toward Participatory Solutions to Chronic Urban Flooding in Jakarta. *Pacific Affairs* 88(3): 517-550.
- Perkins C and Rumford C (2013) The Politics of (Un)fixity and the Vernacularisation of Borders. *Global Society* 27(3): 267-282.
- Pow C P (2011) Living It Up: Super-Rich Enclave and Transnational Elite Urbanism in Singapore. *Geoforum* 42(3): 382-393.
- Powell M A (2020) Singapore's Lost Coast: Land Reclamation, National Development and the Erasure of Human and Ecological

- Communities, 1822–Present. *Environment and History*. Retrieved from: <https://doi.org/10.3197/096734019X15631846928710>.
- Salazar N B (2010) *Envisioning Eden: Mobilizing Imaginaries in Tourism and Beyond* (Vol. 31). Oxford: Berghahn Books.
- Sharp N (2002) *Saltwater People: The Waves of Memory*. Toronto: University of Toronto Press.
- Schneider-Mayerson M (2017) Some Islands Will Rise: Singapore in the Anthropocene. *Resilience: A Journal of the Environmental Humanities* 4(2-3): 166-184.
- Silver C (2007) *Planning the Megacity: Jakarta in the Twentieth Century*. Oxford: Routledge.
- Silver C (2018) Waterfront Jakarta. The Battle for the Future of the Metropolis. In: Hellmann J, Thynell M and van Voorst R (eds) *Jakarta. Claiming Spaces and Rights in the City*. London and New York: Routledge, 120-137.
- Simarmata H (2018) *Phenomenology in Adaptation Planning. An Empirical Study of Flood-affected People in Kampung Muara Baru Jakarta*. Singapore: Springer.
- Simpson I (2016) Operation Atlantis. *Shima* 10(2): 18-35.
- Siriwardane-de Zoysa R (2020) Beyond the Wall: Dying as an Object of Everyday Governance in the Bay of Manila. *Marine Policy* 112. Retrieved from: <https://doi.org/10.1016/j.marpol.2019.103661>
- Steinberg P E, Nyman E and Mauro J C (2012) Atlas Swam: Freedom, Capital, and Floating Sovereignities in the Seasteading Vision. *Antipode* 44(4): 1532-1550.
- Sutherland H (2007) Geography as Destiny? The Role of Water in Southeast Asian History. In: Peter Boomgaard (ed) *A World of Water: Rain, Rivers and Seas in Southeast Asian Histories*. Singapore: NUS Press, 27-70.
- Thompson R (2018) A Dutch Garuda to save Jakarta? Excavating the NCICD Master Plan's Socio-Environmental Conditions of Possibility. In: Hellmann J, Thynell M and van Voorst R (eds) *Jakarta. Claiming Spaces and Rights in the City*. London and New York: Routledge, 150-168.
- Wade M (2019) Hyper Planning Jakarta: The Great Garuda and Planning the Global Spectacle. *Singapore Journal of Tropical Geography* 40(1): 158-172.

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