

# Waste and its masquerades

## On the production of urban natures in Kochi, India

### Matt Barlow

Matt Barlow is a postdoctoral research fellow in the School of International Relations at the University of St Andrews. His ethnographic research investigates how colonial environmental imaginaries influence efforts to address environmental crises. His PhD explored contestations over waste infrastructures alongside environmental activists in Kochi, India. Email: [mattpbarlow@gmail.com](mailto:mattpbarlow@gmail.com)

Fig. 1. Gandhi's glasses

In 2014, the newly elected Prime Minister of India, Narendra Modi, launched the Swachh Bharat (Clean India) campaign, the most extensive pursuit of waste reform in India's history and potentially the most significant waste movement in global history (Doron & Jeffrey 2018). Part of this campaign placed the duty on citizens to appropriately dispose of their waste with the slogan 'my waste my responsibility', a sentiment captured and promoted by Narendra Modi himself in numerous attempts to demonstrate his own participation in clean-up efforts (Dey & Michael 2021). In a nod towards Foucault's panopticon of state surveillance, the insignia for the campaign was the image of Mahatma Gandhi's glasses (Fig. 1). Being seen to do the right thing was paramount in this milieu of urban development and nation-building through direct attention to waste reform and cleanliness and invited analysis of these waste reforms through critical attention to the visual.

In this context, I pursued my ethnographic research into waste and its management in Kochi, Kerala, throughout 2018-2019. In this article, I explore two approaches to waste management in two urban nature sites: the Mangalavanam Bird Sanctuary and Subhash Bose Park. Specifically, I call attention to how waste and its management are central to the production of urban nature and how environmental imaginaries are essential to how waste is managed. By examining the intersection of the visibility of waste and its management concerning the production of urban natures, I provide insights into how cities continue to present green space as urban development projects while polluting the broader environment more insidiously.

Kochi is a rapidly developing port city on the south-west coast of India. While not the official capital of the state of Kerala, it is commonly known as the commercial and industrial capital, home to the Southern Indian Naval Command and popular with tourists and migrant labourers, health care workers and, increasingly, IT engineers and artists.

It is also situated among the famous Kerala backwaters, with lakes and canals meandering through the city towards the picturesque Cochin Harbour in Lake Vembanad. This harbour has been the site of colonial and (post)colonial infrastructural development primarily for extracting tea and spices from the fertile lands of the Western Ghats.<sup>1</sup> As such, much of the swampy wetland that would have once been covered in mangrove forests is now a sprawling urban centre. There are two remaining sites of green space in the city: the Mangalavanam Bird Sanctuary and Subhash Bose Park. On the one hand, they offer a renewed effort to provide green space to city dwellers for their leisure and, on the other, they conserve biodiversity by protecting the last remaining mangrove forest in the city area.

In what follows, I analyse how waste is managed in these sites by demonstrating how the production of urban nature – materially and aesthetically – is intimately tied to the ideological functioning of waste infrastructures, which hinges on environmental imaginaries and ecological aesthetics. I compare the experience of being in these parks, their use by other patrons and how waste is managed (or not) within their boundaries. What comes to light is that attention to individual disposal practices diverts attention away from the much deeper issue of industrial waste management and broader infrastructural relations to the more-than-human urban environment. I argue that ideological work is being done by producing different kinds of urban environmental imaginaries and that attention to waste and



MATT BARLOW

its management provides insights into these ideological functions.

### Waste and the production of urban nature

The importance of waste and its management to producing urban nature can be traced back to 18th-century Europe (Gandy 1999). The debates over waste and the production of urban natures have thus far been centred on the marginal: the places left to decay and grow on the city's outskirts. These places are also often where landfills and other waste infrastructures are located. In this formulation, there are two common types of urban nature: the marginal places where waste interacts with different species to produce surprisingly resilient and improvisational, or what Bettina Stoetzer (2018) refers to as 'ruderal', urban ecologies; and the more sanitized places of urban leisure and entertainment such as urban parks (Sivaramakrishnan 2017). Here, 'specific social expectations, whether made explicit or simply implied, nearly always accompany urban environmental interventions' (Rademacher & Sivaramakrishnan 2013: 12). These insights help to demonstrate that what is commonly presented as 'urban nature' is often a product of profound human involvement.

These discussions of urban nature intersect with recent scholarship on the role of infrastructures in mediating urban environmental governance. This literature situates infrastructures as sites of state power, often understood as the territorializing projects of empire (Carse 2014; Fredericks 2018). Infrastructures have been characterized as possessing both form and function. Their metabolic function is to move things around, but their physical presence also does representational and ideological work (Larkin 2013). More recently, it has been demonstrated that through their co-production, the distinctions between environment and infrastructure have become increasingly blurred (Hetherington 2019).

This article builds on these insights by showing how waste and its management are critical sites where the co-production of urban space and nature is mediated. Sites of non-human nature in cities are anything but natural, but rather the result of spatial planning and governance, often with social and political outcomes – especially when waste is involved (Ahmann 2018; Dillon 2014). Of particular relevance is the visibility of certain kinds of waste (and its management) concerning the invisible toxicity of

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

1. A hilly range that forms the eastern border of Kerala with Tamil Nadu.
- Ahmann, C. 2018. 'It's exhausting to create an event out of nothing': Slow violence and the manipulation of time. *Cultural Anthropology* 33(1): 142-171.
- Badrudeen, A.K. et al. 2014. Environmental significance of heavy metals in leaves and stems of Kerala Mangroves, SW Coast of India. *Indian Journal of Geo-Marine Sciences* 43(6): 1021-1029.
- Barlow, M. 2022. Floating ground: Wetness, infrastructure, and envelopment in Kochi, India. *Shima: The International Journal of Research into Island Cultures* 16(1): 26-44.
- Butt, W.H. 2020. Waste intimacies: Caste and the unevenness of life in urban Pakistan. *American Ethnologist* 47(3): 234-248.
- Carse, A. 2014. *Beyond the big ditch: Politics, ecology, and infrastructure at the Panama Canal*. Cambridge: MIT Press.
- Chitra, K.P. 2016. How Kerala is destroying its wetlands. *Economic and Political Weekly* 51(22).
- Davies, T. 2018. Toxic space and time: Slow violence, necropolitics, and petrochemical pollution. *Annals of the American Association of Geographers* 108(6): 1537-1553.
- 2019. Slow violence and toxic geographies: 'Out of sight' to whom? *Environment and Planning C: Politics and Space* 37(8): 1383-1399.

**Fig. 2 (above, right).** Plastic-free zone sign outside the MBS.

**Fig. 3.** A sign announcing the biodiversity of the MBS.

**Fig. 4.** The mangrove swamp and the MBS.

**Fig. 5 (below).** One of many stone plaques along the side of the path in the MBS.



slow violence in these places (Davies 2018). In this way, attention to the optics of waste management highlights the ideological function of what Matthew Gandy (2013) calls an ‘ecological aesthetics’, where what sites of urban nature look and feel like is more important to urban development than the actual material make-up of those places. As such, in the following discussions, I compare the optics of waste and its management and the ambient experience of these two places of urban nature in relation to the context of the broader urban experience.

### Mangalavanam Bird Sanctuary

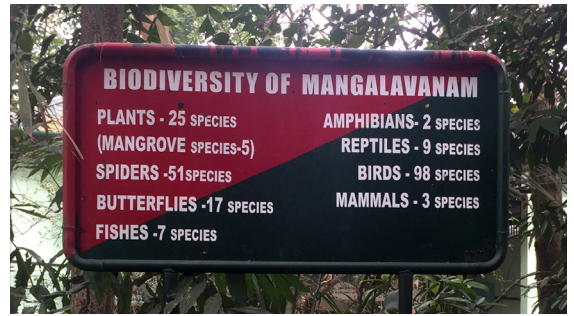
Known as the ‘green lungs’ of Kochi, the Mangalavanam Bird Sanctuary (MBS) is one of the few remaining mangrove forests in the city and the last remaining in downtown Kochi. The MBS was established in 2004, but as one employee told me, the forestry department had been ‘conserving [it] as a sanctuary’ since 1954. It is the only bird sanctuary in Kerala located in a mangrove forest. Mangroves are widely known as vital parts of coastal ecosystems as they provide stability to otherwise errant soils and act as a carbon sink (Badarudeen et al. 2014).

Mangroves are vital to the integrity of coastal ecosystems, biodiversity and regulating atmospheres. As Laura Ogden has highlighted in her book *Swamplife* (2011), there is a logic to mangroves that operate above and below the surface and do not obey terrestrial boundaries. Mangroves like those at the MBS would have once existed along this coastline and through the Kerala backwaters but have been removed over the last 500 years to make the city of Kochi as we know it today through a process of terrestrialization (Morita 2016). The remaining mangroves at the MBS are increasingly under threat from nearby industrial pollution and the presence of microplastics in the water (Badarudeen et al. 2014; Chitra 2016; Kannankai et al. 2022; Sarika & Chandramohanakumar 2008) as toxic water flows through and beyond coastal regulation zones that attempt to prevent these mangroves from being encroached upon even further.

My research assistant and I would often meet at the MBS to discuss my project before carrying on with the day of meetings and interviews about waste management in the city. At her suggestion, I recall the first time we met at the MBS in August 2018. It was a warm sunny day in late September, just a few weeks after Kerala had just experienced the heaviest flooding in a century. The sanctuary was noticeably out of the way, hidden from the main streets of downtown Kochi, with only one dead-end road leading to the entrance. To get to the sanctuary, I needed to leave the main roads of downtown Ernakulam and veer off to a road that services the rear entrances of the Kerala High Court. It almost felt like I had taken a wrong turn and had entered a road that was not accessible to the public.

As I took the final turn north and away from the Kerala High Court, I was greeted with signs alerting me that I had reached the MBS, which eased the sense that I was lost. The most notable of the signs were the ones that read ‘PLASTIC FREE ZONE: please co-operate’ (Fig. 2) and the one across the road from it that announced the biodiversity of the sanctuary: 25 plant species (with five species of mangroves), 51 spider species, 98 bird species, 17 butterfly species, and so on (Fig. 3). The production of this space as a site of urban nature was achieved through these relationships between environment and waste.

Just beyond the signage, my research assistant was waiting for me on the road outside the entrance to the sanctuary, on a bridge over a small channel that facilitated the tidal movement of water. As we walked into the MBS, a forestry official greeted us, as did an older man sitting in a small booth who was responsible for taking the reg-



istration details of visitors to the sanctuary. To the left of the registration booth was an old homestead, which I later learnt was the MBS’s headquarters. There was also a small hall that could be hired for educational purposes. Despite only being a short walk from the Kerala High Court and the bustling downtown of Kochi, inside the sanctuary, it was distinctly quiet and cool. The atmosphere was calm, and I felt invited to slow down. The sanctuary consisted of two pathways, one headed north and one south, each only about 20 metres long. At the fork between the two paths was a bird-watching tower with a small platform at the top – a place to be in the canopy. The paths were narrow, and the paving was patchy or non-existent. Along the edges of these paths were small plaques (Fig. 5) that depicted engraved drawings of species that are part of the biodiversity showcased in the sanctuary, and beyond which was the mangrove swamp.

Despite the MBS officially being a plastic-free zone, waste continued to enter the sanctuary through the ebb and flow of the backwaters. As I have discussed elsewhere (Barlow 2022), much of Kochi’s sewage flowed directly

Devika, J. 2019. *Why do people deny environmental destruction? The pollution of the Periyar at Eloor, and local-level responses.* Thiruvananthapuram: Centre for Development Studies.

Dey, T. & M. Michael 2021. Plastic possibilities: Contrasting the use of plastic ‘waste’ in India. *Anthropology Today* 37(3): 11-15.

Dillon, L. 2014. Race, waste, and space: Brownfield redevelopment and environmental justice at the Hunters Point Shipyard. *Antipode* 46(5): 1205-1221.

Doherty, J. 2018. Why is this trash can yelling at me? Big bellies and clean green gentrification. *Anthropology Now* 10(1): 93-101.

Doron, A. & R. Jeffrey 2018. *Waste of a nation: Garbage and growth in India.* Cambridge: Harvard University Press.

Fredericks, R. 2018. *Garbage citizenship: Vital infrastructures of labor in Dakar, Senegal.* Durham: Duke University Press.

Gadgil, M. & R. Guha 1994. *Ecology and equity: The use and abuse of nature in contemporary India.* London: Routledge.

Gandy, M. 1999. The Paris sewers and the rationalization of urban space. *Transactions of the Institute of British Geographers* 24(1): 23-44.

— 2013. Marginalia: Aesthetics, ecology, and urban wastelands. *Annals of the Association of American Geographers* 103(6): 1301-1316.

Ghertner, D.A. 2015. *Rule by aesthetics: World-class city making in Delhi.* Oxford: Oxford University Press.

Hetherington, K. 2019. *Infrastructure, environment, and life in the Anthropocene.* Durham: Duke University Press.

- Kannankai, M.P. et al. 2022. Urban mangrove ecosystems are under severe threat from microplastic pollution: A case study from Mangalavanam, Kerala, India. *Environmental Science and Pollution Research* 29(53): 80568-80580.
- Larkin, B. 2013. The politics and poetics of infrastructure. *Annual Review of Anthropology* 42(1): 327-343.
- Menon, J. 2022. *Brutal beauty: Aesthetics and aspiration in urban India*. Evanston: Northwestern University Press.
- 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.

**Fig. 6.** The boulevard with backwater views at SBP.

**Fig. 7.** Man gazes into the backwaters from SBP.

**Fig. 8.** A trunk-shaped bin inside SBP.

**Fig. 9.** A penguin-shaped bin inside SBP.

into these backwaters. A recent study has also determined an alarming amount of microplastics in the water of the MBS (Kannankai et al. 2022). Earlier in my fieldwork, a group of us, including another waste activist and my research collaborator, visited the nearby Eloor Industrial Area. Here, we were told about effluent from tanneries and other petrochemical industries flowing directly into the Periyar River through covert underground pipes. One newspaper article referred to this place as a ‘toxic keg’, while another described it as a ‘toxic hotspot’ worthy of international environmental concern. These investigative pieces have since been substantiated by a recent study from the Centre for Development Studies in Trivandrum (Devika 2019). In other words, despite the ‘plastic-free zone’ notice at the entrance, my research assistant and I were acutely aware that the water that flowed through the MBS was likely to be quite toxic. During a later visit, a forestry department employee conceded he knew that pollution was coming from the backwaters themselves. When asked about the pollution, he said:

Pollution is coming from the backwaters ... the High Court and other nearby buildings ... Actually, most of our sewages are opening to the Vembenad Lake, there is no treatment.

Polluted water transgressed the borders of green spaces, even if protected from the disposal of solid waste and disposable plastics on site. The polluted water travelled through pipes, along canals or the vast interconnectedness of the backwaters that flowed through the MBS. The life and death of the sanctuary were most acutely tied to the ongoing pollution affecting the quality and depth of the lake. This pollution would subsequently reduce fish numbers and the likelihood of birds arriving to feed and nest. The park’s ability to function as a bird sanctuary was intimately tied to the cleanliness of the backwaters. As the forestry official went on to tell us:

We want to increase the depth of the lake, otherwise the lake will be closed. There are some works being done, the Cochin Corporation wants to do something, but it is not enough. Because [only when the] sludge will be taken [from] here and removed outside, then the depth will increase, only then [can] fish sustain here, [and] then birds [will come] here for nesting.

These observations of sewage being dumped into the backwaters were supported by conversations I had throughout the city with government departments, local market stall holders and waste workers. The attention to individual disposal practices here – and in the Swachh Bharat campaign more generally – did nothing to stop industrial sewage and toxic effluent from entering this sanctuary. So, while the MBS was essentially free of plastic litter, and its plastic-free status helped to create an environment amenable to the aesthetics of a wildlife sanctuary, it did little to protect it from what is a much more insidious problem. It acted more in an aesthetic register to help produce particular environmental imaginaries and associations, similar to how the Swachh Bharat campaign placed responsibility on individuals, rather than corporations or industries, to help protect the environment from waste.

### Subhash Bose Park

In distinction to the MBS, Subhash Bose Park (SBP) is located on the popular esplanade of downtown Kochi, directly next to the main ferry terminal and across the road from the Cochin Corporation municipal building and Maharaja’s College – one of India’s oldest universities. Instead of being a plastic-free zone, plastic consumption seemed to be encouraged in SBP, with stalls selling sweets and snacks at the entrances to the park. The park had wide paved boulevards (Fig. 6) that took visitors around its circumference and down to the edge of the backwaters. The park’s border, which faced Cochin Harbour, was the most popular place for people to rest. It offered views of the backwaters and, if lucky, a cool breeze off the water (Fig. 7). Between the paths were large lawned areas where children played and families relaxed. A sound system was scattered throughout the park playing Hindustani classical music and famous Bollywood songs.

While these aesthetic experiences of the park were notable, I found myself drawn to the numerous animal-shaped and nature-themed bins throughout the park with large lettering on the front exclaiming ‘USE ME’ (Figs 8-9). They were distinctly devoid of a situated context concerning India or Kerala, as generic and mundane as they were universal and playful. As such, they were – like many other urban infrastructures– aesthetic (Ghertner 2015; Menon 2022).

SBP was not always as manicured. One day in October 2018, my research assistant took me for a walk to Maharaja’s College. The college, named after the famous painter Maharaja Rama Varma, is a cultural icon for Kerala, and the birthplace of contemporary Kerala politics. But as my research assistant told me, before the sanitized boulevards of the current SBP, this parcel of land between the college and the brackish backwaters used to be an unkempt park that provided an excellent hideaway for college students on break from class. Early depictions of the college showed it surrounded by sandy open land, suggesting the British likely propagated this park during the early 20th century.

My research assistant recalled fondly the time spent in the park with college mates, where they would wind down after class. She said the straight lines, lawn and sanitized space of the new SBP did not appeal to the college students as much as before and lamented the loss of the autonomy associated with the wildness of an unkempt space of urban nature. In this context, the themed bins arrived in Kochi,





**Fig. 10.** Waste management near the entrance of SBP.

Nagle, R. 2013. *Picking up: On the streets and behind the trucks with the Sanitation workers of New York City*. New York: Farrar, Straus and Giroux.

Ogden, L. 2011. *Swamplife: People, gators, and mangroves entangled in the everglades*. Minneapolis: University of Minnesota Press.

Rademacher, A. & K. Sivaramakrishnan 2013. *Ecologies of urbanism in India: Metropolitan civility and sustainability*. Hong Kong: Hong Kong University Press.

Reno, J. 2014. Toward a new theory of waste: From 'matter out of place' to signs of life. *Theory, Culture & Society* 31(6): 3-27.

— 2016. *Waste away: Working and living with a North American landfill*. Oakland: University of California Press.

Sarika, P.R. & N. Chandramohanakumar 2008. Geochemistry of heavy metals in the surficial sediments of mangroves of the South West Coast of India. *Chemistry and Ecology* 24(6): 437-447.

Sivaramakrishnan, K. 2017. Places of nature in ecologies of urbanism. In *Ecologies of urbanism in India: Metropolitan civility and sustainability* (eds) A. Rademacher & K. Sivaramakrishnan. Hong Kong: Hong Kong University Press.

Stoetzer, B. 2018. Ruderal ecologies: Rethinking nature, migration, and the urban landscape in Berlin. *Cultural Anthropology* 33(2): 295-323.

Teltumbde, A. 2014. No Swachh Bharat without annihilation of caste. *Economic and Political Weekly* 49(45).

where something resembling a forest had been replaced by a generic, lawn-heavy, family-friendly and increasingly sanitized and policed site of urban nature. The bins were an extension of this form of governing urban nature, indicating to citizens that the government was adequately managing waste. So what ideological work was going on here, and what does it represent about the use and abuse of nature in contemporary India more generally (Gadgil & Guha 1994)?

Much ethnographic attention has been drawn to the systems that help people dispose of things and how those systems represent broader political and economic aspirations. Joshua Reno (2016) has demonstrated how these disposal systems often produce a fictive 'away', rendering modernity's detritus invisible in an 'out of sight, out of mind' manoeuvre. Picking up after people is also characterized as vital work essential to keeping cities functioning, part of the metabolic flow of urban life and a site of political contestation over the power to govern, but also over the power to decide what kind of place a city is (Fredericks 2018; Nagle 2013). It has also been shown that waste labour is often emblematic of existing social inequalities, reinforcing caste, class and gender discrimination, revealing how power works through material and affective relationships forged through engagements with waste (Butt 2020; Teltumbde 2014).

Less attention has been given to the aesthetic and ideological qualities of bins as the initial receptacles of trash. Less still has been given to how disposal practices are related to the production of urban nature. Exceptionally, Jacob Doherty's recent photo essay explores how technologically advanced bins called 'big bellies' deployed in the affluent parts of Brooklyn and Philadelphia demonstrate 'new eras in public life and ... conjure new urban publics that are clean, green, and smart' (2018: 96). According to Doherty, the big bellies typify what Steve Graham and Simon Marvin call 'splintering urbanism', where 'urban infrastructural services are unbundled, privatized and differentially made available to narrow populations and targeted niche markets' (ibid.).

However, in Kochi, the opposite was happening. The use of decontextualized and rudimentary themed bins did not invoke the explicit cultural or environmental specificities of this place or appeal to technological innovation like many other forms of urban infrastructure did. They were part of a broader production of urban nature that was increasingly important for the political aesthetics of the local government. By making the bins hyper-visible, playful and generic, this site of urban nature projected a specific kind of urban development through producing a quotidian form of urban ecological aesthetics.

Social theories of waste suggest that waste management is often committed to keeping it out of sight (Davies 2019; Reno 2016). The Kochi government's approach to

the waste crisis in the city, more generally, was mostly about keeping waste hidden rather than stopping it from being created in the first place. However, since the Swachh Bharat national movement on waste, the infrastructures built to manage waste needed to be seen for the government to demonstrate it was doing something about the problem. By shifting the analysis to what waste can tell us about the production of urban nature, I build on Reno's (2014) formulation of waste as a sign of life. Here, he looks to conservation ecology, where animal scats provide valuable data about animal behaviours, to suggest that waste offers new insights for social theory.

Applying this lesson to the urban context opens new modes of analysis of the visibility of urban infrastructures and their relationship to environmental knowledge practices and imaginaries. These optics of waste management are highlighted through a conversation with one of the women collecting leaves at SBP. My research assistant asked how waste was managed in the park, and responded. We were told that while there are separate collection points for plastics and leaves by the park entrance (strategically placed for patrons to see: Fig. 10), these were collected (at night) by the same truck and presumably dumped together at the city's main landfill. This practice has come under increasing scrutiny for its mismanagement. Visibility was also valuable for policing those *not* using the bins through new monitoring technology. One park-goer told us that monitoring is crucial to the cleanliness of the park: '[I'm] not concerned about [bin] shapes, [I] just care about cleanliness, and the monitoring system. I don't want to see any kind of anti-social behaviour in the park, drug dealers and such. So, the monitoring is good.'

The infrastructure to make the park 'clean' produced the conflation between cleanliness and safety, and rubbish with danger and 'anti-social behaviour'. This is one of the more insidious aspects of the ideological function of waste and the production of urban nature. SBP drew attention to the grandeur of the harbour and the cleanliness with which the park was kept. In other words, the production of urban nature was bound up in the ideological functions of urban development. The park produced an aesthetic experience of a clean and green Kochi while debates continued over the mismanagement of the city's landfill and pollution of its backwaters.

## Conclusion

The ecological aesthetics of these two sites of urban nature are produced explicitly through an assortment of infrastructures that have consequential, if implicit, outcomes. One aspect of how these places are produced is through the different ways that waste is managed. I have highlighted that the waste management practices of Kochi's urban nature are performative. Waste infrastructures are vital to consolidating state power (Fredericks 2018) and essential processes in producing urban natures, which are increasingly crucial to urban development agendas. They also distract from the pressing ecological issue of the increasing toxicity of the backwaters, which is more consequential for the future of the MBS than the disposal of plastics.

At SBP, waste management showcases Kochi as a modern city with wide boulevards, a functioning infrastructure and a leisurely atmosphere. In contrast, at the MBS, the plastics ban contributes to an atmosphere of an educational experience where visitors are shown what might be lost if Kochi continues down the path of urban development it is currently on – the path that SBP tends to promote. Waste and its management are not just marginal to urban development projects that shape urban nature experiences and environmental imaginaries; they are central to those projects in ways that are difficult to see and often contradictory. ●