Eviscerating the Sea

Nikhil Anand and Lalitha Kamath

In January 2021, article author Nikhil Anand used WhatsApp to send a historic map of Mumbai harbor to Ganesh Nakhwa, a young fisher from a fishing family in Karanja village, in Uran. Ganesh was active in fisher movements. Nikhil met him at the protests against the Ministry of Surface Transport's Sagarmala project in September 2018. Years later, in the winter of 2021, Ganesh was excited to receive the map. Responding in a WhatsApp message, he replied, "Clearly seen our fishing areas marked. That's incredible. My grandfather always told [us that] old nets were at Mazgaon basin till entry point."

Ganesh was noticing the fishing stakes, visible in figure 1, above Bombay Island and below Coronja. In focusing on the nets in the Mazgaon basin, Ganesh was both remembering his grandfather's harbor and drawing attention to the absence of nets—their unthinkability—in the amphibious mixes that now compose a matrix of port infrastructures in Mumbai, including the Jawaharlal Nehru Port Trust and the Bombay Port Trust. The nets are no longer there. Initially, they were likely removed or banned with the construction of port infrastructure and its demands to host massive war and container ships in the nineteenth and twentieth centuries. This is an absence that has been maintained since—a process that we describe, building on Vinay Gidwani and Rajyashree Reddy's work, as evisceration.[1]

The map Nikhil gave to Ganesh was a reciprocated gift. Previously, in 2018, Ganesh had given Nikhil a different map—a navigation chart of Mumbai—that had grounded their friendship. His trawlers' captains used this map to know not just where to fish but also where they may not go. That map describes how the sea has since been filled with oil fields and shipping infrastructure. Nikhil couldn't stop looking at this map for weeks after Ganesh shared it. He did not expect the sea to be as marked as it was, to be so full of exclusions. The construction of Mumbai's ports in the nineteenth and twentieth centuries, the leasing of the Bombay High offshore oil and gas platforms in the late twentieth century, and the development of the transport corridors of the Sagarmala project in the twenty-first century have further eviscerated the sea while making it amenable to hosting large-scale ships and container traffic.

Mumbai, the historian Gyan Prakash argues, has been made by a *double colonization*: a military colonization of Indians by the British, and a colonization of nature—the sea in particular—by culture.[2] While British colonization ended in 1947, the terrestrial city's colonization of the sea continues to this day. Scholars have shown how the doctrine of *terra nullius*—"land claimed by no one"—was key to the establishment of settler colonies and the displacement of Indigenous populations in the Americas, Asia, and Australia.[3] Just like land, so with water; and not just in the New World, but also in many other worlds. The world's greatest colonial cities—Mumbai, New York, Singapore, and others—have long been made by declaring their seas, wetlands, intertidal regions, and rivers useless, empty—claimed by no one. Not *terra nullius,* but *aqua nullius*.[4] This is a widespread phenomenon.

In her work on Indigenous water rights in Australia, Indigenous legal scholar Virginia Marshall describes an ongoing set of legal maneuvers by the Australian state to, on the one hand, *not* see prior uses of water bodies and, on the other hand, to *see* land and water as distinct formations in property law, even though the realities are always

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Figure 1. 1690 map of Bombay and Salsette. Sam Thornton, hydrographer, East India Company. Note the fishing stakes visible at the mouth of the harbor, above Bombay and below Coronja/Karanja village. Map accessible at https://www.rmg.co.uk/collections/objects/rmgc-object-543499.

a lot muddier.[5] She calls this the doctrine of *aqua nullius*, and she shows that this doctrine is a fiction that is brought into being to permit (legally and figuratively) the colonization of water—or what Isabel Hofmeyr evocatively calls "hydrocolonialism"—by the masters of private property.[6]

In this article we describe how the sea has been and is being transformed by urban processes. Through projects that devalue some forms of life and value others, the seas around Mumbai have been constitutive of its development as a city, first as a colonial city and now as a postcolonial one. Urban processes, as Brenner and Schmid have pointed out, exceed the geographies of the city.[7] In Mumbai, urban processes that have long extended deep into the sea, and not just through its colonial port, which, as scholars have shown, was key to it becoming a crucial node of empire.[8] Mumbai also continues to depend on the sea to produce its food, for energy and minerals, and as a "sink" for the discharge of its waste.[9]

We draw attention to the slow violence through which the sea is being emptied and filled in the Anthropocene,[10] to make time spaces predictable and legible for capitalism's engines—oil and logistics—to flourish in port environments. This is a historical process of colonization—a colonization that continues to this day in the background of everyday life.[11] We detail the different temporal scales at which evisceration, as a colonial mode of making the sea, is being performed. It is an evisceration that unmakes the multiple assemblages of fish and fishers that make the sea.

We borrow the term *evisceration* from the work of Gidwani and Reddy,[12] who use it to describe the interlinked processes of hinterland colonization by cities, the appropriation of commons in the service of commerce (and to enable the flow of resources), and finally

the ways in which technologies are mobilized to connect bourgeois populations to global circuits while at the same time creating an underclass that lives on waste. Taken together, the two maps remind us of how sea spaces are made, not just in the spectacular events of European colonization but also its aftermaths, through building infrastructure in the sea and irreversibly transforming it, a process we term *infrastructuring the sea*.

Contemporary infrastructure projects in the sea reterritorialize port environments, continuously discarding historic occupants and coastal occupations in their wake.[13] We build on the concept of evisceration to make two related arguments. First, processes of evisceration are not entirely new or old. They are durable, accretive, and intensifying in the current moment, where new expropriations articulate with and extend colonial projects of urbanizing the sea.

Second, fishers don't just live at sea but also in the spacetimes of dry land, in the city. These domains of urban "landsea" are always already partially connected through multiple and ongoing relations and projects.[14] Thus, just as fishers demand recognition of their alterity and autochthony as the city's original dwellers before it was a city, they also participate vigorously in the political projects of and in the postcolonial city, often demanding rights to livelihood as guaranteed by the constitution. Similarly, foreclosed opportunities of life in the waters of the urban sea compel them to negotiate other relations of possibilities of living in the city. As chances for making livelihoods at sea shrink, fishers are increasingly turning to their small parcels of land in the city, exploring how and if these might be made real estate to secure their futures.

In making this argument, we build on a well-developed conversation in anthropology, geography, and history that has highlighted the vitality and violence of infrastructure by drawing attention to the ways in which these infrastructural operations are performed in and transform the sea. As Dennis Rodgers and Bruce O'Neill point out, processes of infrastructuring both reveal and produce deep social inequalities, and they do so not only by reorganizing and differentially structuring spaces, but also by excluding others under their care.[15]

Here, we draw attention to the twentieth- and twenty-first-century processes through which infrastructuring the sea performs violence in the port environments of Mumbai, a city located on the eastern edge of the western Indian Ocean. As Jatin Dua and others have pointed out,[16] military and economic operations in this zone have long been both contentious and critical to the performances of colonialism and global capitalism over the last three centuries.[17] As a critical node in the operations of British colonialism and now Indian capitalism, Mumbai's seas have been a busy site for capitalist infrastructuring and the eviscerations that colonialism and capitalism require. The infrastructural eviscerations of the sea are not peculiar to Mumbai. Work in several offshore locations details the ways in which seas are now vital sites of infrastructural activity in geographies as distant as the South China Sea, the Gulf of Mexico, and the North Sea,[18] representing the new "blue" frontier for resource extraction and economic expansion.[19] Indeed, developing the "blue economy" is becoming an important element of national and regional strategies of states with coastlines, including India. The ensuing palimpsest of projects only further prepares the sea for infrastructure in the future.[20]

In this article, we show how the sea has been infrastructured through ongoing processes that continue to eviscerate ongoing and durable modes of living in it. The worlds of fish and fishers in the littoral regions of Mumbai preceded colonial and postcolonial capitalism. As the sea has been occupied by state projects over the last three centuries, fishers have consolidated and organized diverse modes of opposition, claiming the sea alternately as Indigenous subjects, as farmers of the sea, and more recently as citizens of the postcolonial state.

Further, through the uneven adoption of state programs and strategies, fishers in this port city constitute a dynamic and heterogenous category whose history of making and politics is bound up with the colonial and postcolonial state from their earliest materializations in the urban sea. The state's support of large-scale mechanized fishing since the 1960s has divided a seascape of fishers already fractured by hierarchies of class, caste, and gender into three groups: fishers engaged in capitalist-intensive forms of fishing using trawlers and purse-seine nets; artisanal fishers, many of whom operate small-scale mechanized boats; and migrant laborers who are more recent entrants into fishing. Our engagement with this stratified world has revealed its ability to cooperate in resisting the evisceration of the sea but also its tendency to further fragment by turning away from the sea to speculate in land.

Implicit in the transformation of Mumbai's urban sea is the exclusion of and the violence performed upon groups living on the political and geographic margins of the city. Centuries of shared use of the commons of ocean and sea has given way to international border reg-

ulation and territorialization of the seas that manifest in the establishment of exclusive economic zones and the application of land-based planning tools in them, intensified port and industrial processes, and offshore captures. Capitalist urban forces structure and transform different strata of the sea—pipelines and infrastructure pillars on the seabed, movement of ships on the surface, or harnessing wind energy above sea surfaces. The urbanization of the sea is materialized through infrastructure[21] and reveals the violence of evisceration.

In this article, we show how evisceration is being performed in Mumbai's seas by describing the history and process through which three megaprojects continue to unfold in the region: the port developments (Mumbai Port Trust and Jawaharlal Nehru Port Trust), the infrastructuring of offshore oilfields (Bombay High), and a national logistics project spanning land and sea (Sagarmala). Evisceration, we argue, describes the making of wastescapes both on the land and in the sea. We build on theorizations of evisceration by showing how infrastructures at sea are accretive forms that are simultaneously articulated at different time scales. The processes of evisceration are processes that imply both devaluing and fabricating value and that can be read as acts of state power.

We focus on these three projects staged in Mumbai's urban sea to explore the relationship between their proliferation and the slow violence that these infrastructures produce through "leakages" and "normal accidents."[22] While the expansion of infrastructures proliferates exclusion zones in the urban sea—zones that fishers and other occupants are unable to access—coastal contamination seeps from these locations to other parts of the urban sea, eviscerating its diverse ecologies. We show how fishers are keenly aware of the ways in which their seas and livelihoods are being sacrificed for the prerogatives of both urban and national development. As fishers mobilize powerful forms of protest against the enclosure of their fishing commons, they reveal the limits of evisceration as a modality to control and govern seas as if they were land.

Emptying 1. Life Between Ports

The Thane Creek, which runs along Mumbai's eastern seaboard, is often described as the inlet of water that separates Mumbai from its mainland, but we want to reinforce and remember that once the creek was a busy thoroughfare, enabling multiple entanglements between and beyond human entities across two coasts. More than twenty-five fishing villages or *koliwadas* circle the Thane Creek. They form part of a complex living web woven of marine life, mangroves, and villages linked through livelihood, social, and sacred relations. For a long time, the creek presented to fishers the main way to move, whether on a social visit or for their customary livelihood of fishing. Fishers remember a time when the creek was so deep and continuous that boats could travel up it to the town of Kalyan, an ancient port of the early Christian era known for ship building. The creek was also famous for its bountiful supply of fish, and the location of *koliwadas* along the creek was a reason for their sustained prosperity. But these stories remain deeply etched in fishers' memories alone, as they struggle to reconcile memory with the everyday experience of creek fishing.

Today, the creek is a toxic wetland. Water has been made into land through landfill by Mumbai's two ports, built on either side of the creek (see fig. 2). These coastlines are now transformed by industrial processes and largely barricaded off from coastal communities and larger publics. Through the commissioning of Mumbai's second port, the Jawaharlal Nehru Port Trust (JNPT), and the reinvention of its original port, Bombay Port Trust, now Mumbai Port Trust (MbPT), fisher life-worlds are being erased and the sea of fishing disassembled.

The Bombay Port that established the city as a node in global economic networks was built through colonial processes of eviscerating the sea that were continued by the Indian state after independence (fig. 2). The linchpin of such efforts was the making of property from the sea to add value to what was seen as lying "idle" and "waste" while making Bombay a world-class city. As the governor of Bengal said in an address at the inauguration of the Mazgaon-Sewri reclamation project in 1907: "The Port Trust is building not for today only, but for the benefit of generations to come. . . . I am confident that the reclamation which we are here to inaugurate, and the other great works will assure to Bombay a position among the great ports of the world."[23] These narratives privileged port expansion over the sea of fishing, allowing the Bombay Port Trust to create 1,880 acres through reclamation from the sea during the late nineteenth and early twentieth centuries. Ongoing harbor development by the Indian state has led to continuous dredging and further reclamations, thus expanding opportunities for infrastructuring the sea while shrinking opportunities for fishing.

As a mode of governance, the MbPT clearly revealed the alliance between colonial authorities and

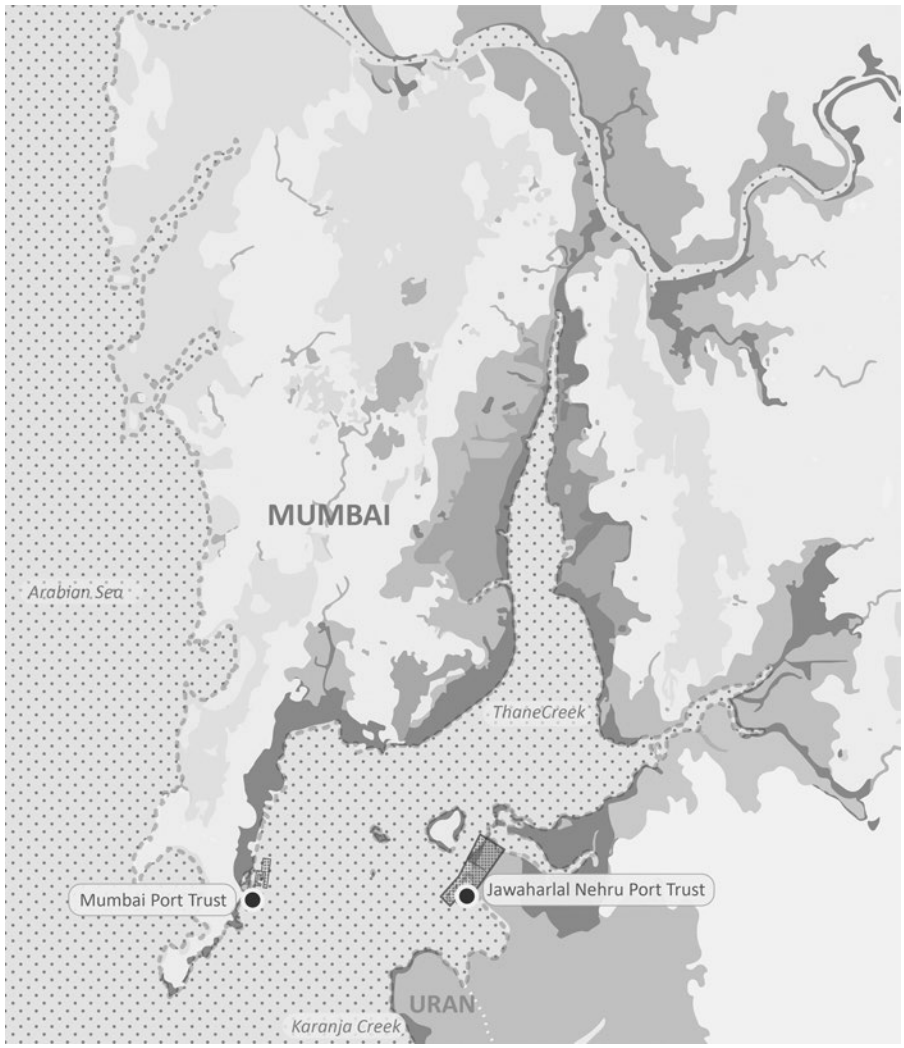


Figure 2. Ports in a muddy creek. Mumbai's ports have been situated in relatively shallow, muddy waters of Thane Creek/Mumbai Harbor. Map by Siddharth Chitalia.

propertied interests in the city.[24] The Bombay Chamber of Commerce, which had been influential in originating the idea of the Port Trust to efficiently govern port infrastructures and estates, was given the power to elect five of the twelve trustees under the 1879 Bombay Port Trust Act. The chamber sought to ensure that no public expenditure burdens were placed on the port and, through this, on the smooth functioning of trade and commerce.[25] The numerous informal settlements with poor services that dot port lands today bear mute testimony to the MbPT's withdrawal from its responsibility for providing adequate housing for its workers. The power of capital in port development in the region has been enhanced by the formation of the new JNPT.

In 1989 the MbPT was displaced by the new JNPT on the grounds that new technology in port infrastructures that was demanded by the current and future needs of the country required this change.[26] This call to replace the MbPT, which the president of the Bombay Chamber of Commerce stated in his annual address of 1967, conflated the development of a new port with nationalist development. The Chamber of Commerce argued that the new technology of containerization demanded deep-water berths and a large area to handle the mammoth new ships. The MbPT, situated at the edge of the island-city of Mumbai, had no scope to expand. Even with repeated and expensive dredging (see Shankar's article, this issue), the harbor could not accommodate the new container ships that required deeper waters. This called for establishing a new port at the deep-water site of Nhava Sheva and additional reclamations by merging the islands of Nhava-Sheva and Uran with the mainland. Additionally, privatizing its operations could allow the new port to spend less time on managing labor and handling estate management—a critique that had been levied against the

Bombay Port Trust—and focus more efficiently on port operations. The strong labor unions of the MbPT, which had a history of mobilization dating to the nationalist struggle in the 1920s and were likely to resist reforms, could thus be bypassed. Rather than reordering labor, it was easier to build a new port, radically change the coastline, and displace fishers.[27]

The JNPT, which today covers 2,584 hectares of land area and handles 55 percent of the country's containerized cargo, aims to become the premier container port of south Asia.[28] But its ongoing expansions (for instance, of new terminal infrastructure) and maintenance operations (such as dredging the channel to enable big ships to pass) have spelled doom for fishing villages on both coasts. A leader of a local fisher-agriculturist organization, Rajaram Patil, recounts how the Koli-Agris of Mumbai, Uran, and Raigad, who have long been engaged in the global trade of fishing and salt-pan work, have been dispossessed by the JNPT without any laws for their proper rehabilitation. "JNPT might have developed the country, but it has destroyed us."[29]

Ganesh Nakhwa, the fisher we referred to earlier in the article, talks about how relentless pollution has affected fishing: "Our traditional fishing grounds have been destroyed to make Bombay big. We are fighting in the community because there are no fish, blaming each other. There were 276 fishing villages now only . . . 39 because of polluted creeks."[30]

Much of Mumbai's untreated sewage and industrial effluents are released into the sea. City sanitation engineers justify this, claiming that "the sea is an unlimited sink" where human waste can be endlessly flushed away.[31] Yet even if this pollution must be expelled, the burden of it is borne unequally by the city's coastal populations.[32] Pushpa, a *khajindar* fisher who engages in subsistence fishing using her bare hands, showed author Lalitha Kamath how the effluents in the city are borne by her body. Her body was scarred by cuts, marked by stings, and stricken with frequent ailments as she waded through the toxic marshlands in search of crabs and small fish in the creek. But the complex of hazardous, high security, and defense industries on the eastern seaboard do not publish pollution data or permit any questioning by the lived experience of those on the front lines, even though they disproportionately bear the burdens of this pollution. Pollution is increasingly emptying the sea of fishers, as it has of fish.

Lalitha's work with the fishers of Trombay *Koliwada* reveals the increasing enclosure of the sea and creeks, echoing Ganesh's stories of exclusion of fishers. Chandrakant Vaity, the president of Trombay *Koliwada's* fishing society, tells how the nearby nuclear power station has placed a five-hundred-meter restriction along its boundary in the sea. However, this boundary is unmarked, resulting in fishers regularly getting picked up and their boats confiscated. He shares how the construction of sea-based infrastructures like the Maharashtra Trans Harbour Link road, built to connect Mumbai to the mainland, are destroying the ancestral fishing areas of fishers from several *koliwadas*. Enclosures are occurring not just in the sea but on land too. Coastal fishing commons are fenced off by the state in the pursuit of transforming a coastal common property system into a commodified and controlled-access regime. This has compelled fishers to turn away from the sea and fishing and toward land and property-based sensibilities.[33] This process of estrangement from the sea not only devalues the sea and empties it of fishing but also furthers fishers' participation in real estate and speculative economies centred around coastal commons.

With the shifting of most port activities to JNPT, a substantial proportion of the MbPT's prime lands are increasingly made available for reimagining via a new real estate-centered port imaginary. The Eastern Waterfront Development Project of the MbPT includes plans for redevelopment of leisure infrastructure, marinas, and international cruise terminals spanning ten kilometers of the east coast of Mumbai, from Wadala to Colaba.[34] This forms part of a new frontier of accumulation, seeking to repurpose former industrial "wastelands" and the underutilized sea to shape new geographies of value for the city's real estate, leisure, and tourist economy. Coastal communities like fishers have no place in either older industrial or newer real estate-centered port imaginaries.

Emptying 2. Bombay High Oil

Situated 160 miles northwest of Mumbai, the Bombay High oil fields are offshore oil facilities that were prospected and developed in the 1960s and 1970s by the Oil and Natural Gas Corporation of India (ONGC), a publicly held company focusing on hydrocarbon production. Today, Bombay High is India's largest oil- and gas-producing facility, producing approximately fifty thousand to one hundred thousand barrels a day. Ganesh detailed some of the exclusion zones produced by offshore facilities, displayed in the gray boxes (fig. 3). As seen in the map, the oil fields are in three different clusters. The farthest away is Bombay High,

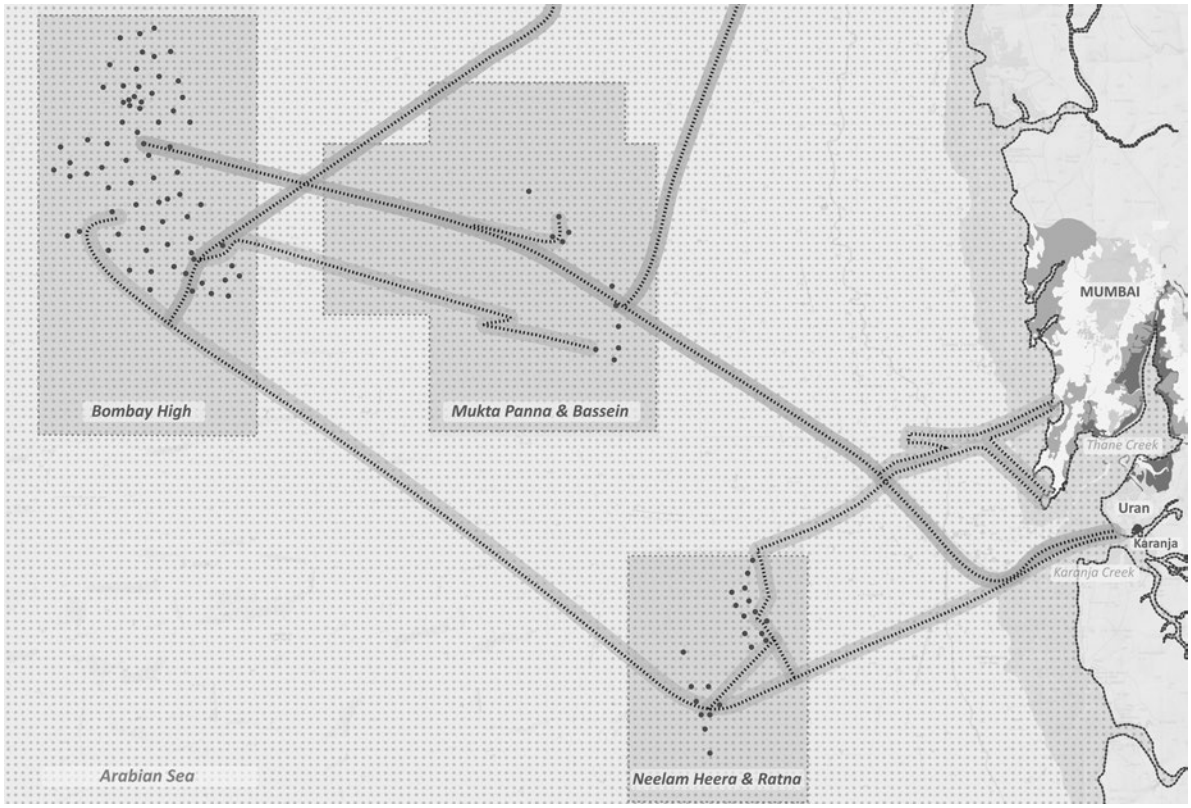


Figure 3. Fishing in an eviscerated sea. The shaded polygons indicate some areas in which fishing is not permitted on account of oil wells, pipelines, and ship traffic in the Mumbai region. Fishing is also not permitted near the shaded oil pipelines that join these oilfields to their processing centers and terminals in Mumbai. Map by Siddharth Chitalia based on Navigational Chart of Mumbai.

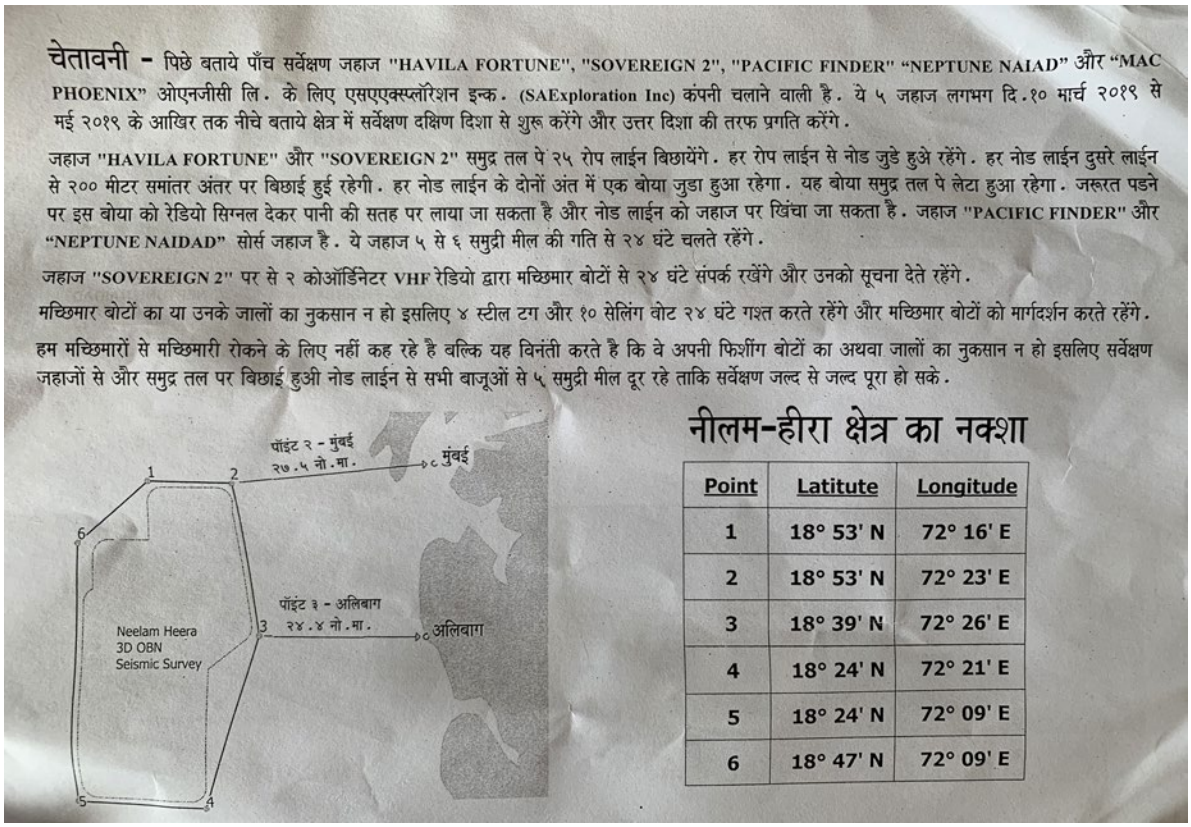
approximately nine hours from the coast. In the 1990s, two oil fields adjacent to Bombay High were also found to be commercially viable. Closer were the Reliance-operated Mukta Panna oil fields (seven hours northwest of the city). ONGC also has a new site just four hours to the southwest, the Neelam Heera Ratna oil fields. All these rigs, Ganesh said, are leaking profusely.

The legend on the Navigational Chart of Mumbai describes the restrictions around oil infrastructures. The gray polygons encircle "numerous production platforms." Fishing and trawling are prohibited in these regions. The dashed lines on this map (highlighted in gray) mark the existence of oil and gas pipelines around which trawling and anchoring are prohibited. Taken together, fishers are excluded from fishing in large sections of Mumbai's urban sea.

Fisher organizations describe the oil fields in the language of dispossession. "We talk about struggles on land, but [they also happen] in the sea," said Ganesh in a recent webinar, "For the Kolis by the Kolis." "There are three hundred square kilometers of Bombay High Oil fields [where fishing is no longer permitted]. We are fighting for *zameen* [ground] not just on land but also in the sea," he said.[35] The oil fields and gas lines carved up fishing areas into smaller patches of sea that fishers needed to navigate and negotiate.

The exclusion zones precipitated by oil infrastructures are leaky in two senses. First, the exclusion zones aren't stable. As prospecting activities are ongoing, they escape from the boundaries contained by the boxes and hatched lines of the map into new regions. Fishers are sometimes not permitted to fish in these regions. At other times they are discouraged from doing so.

For instance, in March 2019, fishers received a flyer indicating prospecting activities in their fisheries (fig. 4). It indicated that two research vessels "will lay 25 rope lines on the seabed. Nodes will be connected to each rope line. Each node line will be laid at a parallel distance of 200 meters from the other line. A buoy will be attached to each end of each node line. This buoy will remain lying on the sea bed. If needed, this buoy can be brought to the surface of the water by giving a radio signal and the node line can be pulled on the ship." Meanwhile, coordinators manning a different ship will "keep in contact with the fishing boats 24 hours a day by VHF



चेतावनी - पिछे बताये पाँच सर्वेक्षण जहाज "HAVILA FORTUNE", "SOVEREIGN 2", "PACIFIC FINDER" "NEPTUNE NAIAD" और "MAC PHOENIX" ओएनजीसी लि. के लिए एसएएक्स्प्लॉरेशन इन्क. (SAExploration Inc) कंपनी चलाने वाली है. ये ५ जहाज लगभग दि.१० मार्च २०१९ से मई २०१९ के आखिर तक नीचे बताये क्षेत्र में सर्वेक्षण दक्षिण दिशा से शुरू करेंगे और उत्तर दिशा की तरफ प्रगति करेंगे.

जहाज "HAVILA FORTUNE" और "SOVEREIGN 2" समुद्र तल पे २५ रोप लाईन बिछायेंगे. हर रोप लाईन से नोड जुडे हुअे रहेंगे. हर नोड लाईन दुसरे लाईन से २०० मीटर समांतर अंतर पर बिछाई हुई रहेगी. हर नोड लाईन के दोनों अंत में एक बोया जुडा हुआ रहेगा. यह बोया समुद्र तल पे लेटा हुआ रहेगा. जरूरत पडने पर इस बोया को रेडियो सिग्नल देकर पानी की सतह पर लाया जा सकता है और नोड लाईन को जहाज पर खिंचा जा सकता है. जहाज "PACIFIC FINDER" और "NEPTUNE NAIDAD" सोर्स जहाज है. ये जहाज ५ से ६ समुद्री मील की गति से २४ घंटे चलते रहेंगे.

जहाज "SOVEREIGN 2" पर से २ कोऑर्डिनेटर VHF रेडियो द्वारा मच्छिमार बोटों से २४ घंटे संपर्क रखेंगे और उनको सूचना देते रहेंगे.

मच्छिमार बोटों का या उनके जालों का नुकसान न हो इसलिए ४ स्टील टग और १० सेलिंग वोट २४ घंटे गश्त करते रहेंगे और मच्छिमार बोटों को मार्गदर्शन करते रहेंगे.

हम मच्छिमारों से मच्छिमारी रोकने के लिए नहीं कह रहे है बल्कि यह विनंती करते है कि वे अपनी फिशींग बोटों का अथवा जालों का नुकसान न हो इसलिए सर्वेक्षण जहाजों से और समुद्र तल पर बिछाई हुअी नोड लाईन से सभी बाजूओं से ५ समुद्री मील दूर रहे ताकि सर्वेक्षण जल्द से जल्द पूरा हो सके.

नीलम-हीरा क्षेत्र का नक्शा

Point	Latitute	Longitude
1	18° 53' N	72° 16' E
2	18° 53' N	72° 23' E
3	18° 39' N	72° 26' E
4	18° 24' N	72° 21' E
5	18° 24' N	72° 09' E
6	18° 47' N	72° 09' E

Figure 4. Information sheet distributed to fishers detailing the oil exploration research zones in which fishing is discouraged. Shared by anonymous fisher, Mumbai.

radio and keep them informed. 4 steel tugs and 10 sailing boats will keep patrolling 24 hours and guide the fishing boats so that there is no damage to the fishing boats or their nets."

These areas keep changing over time as the ONGC's various contractors prospect in different areas. Prior to these exploration cruises, trawler captains are issued notices stating that they must avoid these areas. Neither is it in their interest to explore them. Fishers report how prospecting operations are deeply destructive to the ecology. Ganesh, for example, described the process of "cabling"—a prospecting tool with long lines that destroy the seabed—and the different forms of life that are hosted on it.

Oil infrastructures are also leaky in that they continuously and profusely leak actual oil into the sea as it is being extracted. As Sarandha Jain points out in her study of the industry, oil production is fundamentally a polluting process despite (or perhaps because of) the different technologies that compose its infrastructures.[36] The aging infrastructure of Bombay High is no exception. It leaks profusely both in exceptional and ordinary ways, frequently causing major spills that enter the city's news cycle for a period.

For instance, in 2013 a leak from an ONGC oil pipeline near Uran caused widespread contamination in nearby areas. In this case, because the leakage occurred at an identifiable location within the harbor and within the state pollution control board's jurisdiction, the agency was able to act.[37] The news reports mentioned this was just the most recent of what are regularly occurring events in the life of the infrastructural assemblage that extracts and then transmits oil to the city's processing centers.

Yet in addition to more spectacular spills, there are also ordinary seepages and leakages. Like in several other parts of the world,[38] leakage is an ordinary event in the life of pipelines and rigs in Mumbai. For some of the year, this oil hangs in and around the oil rigs, beyond the gaze or the tools of the Maharashtra Pollution Control Board. At other times of the year, particularly during the monsoons, the oil leaches up and down India's western coastline, disrupting both coastal ecologies and fisher livelihoods. Conversations that Lalitha

has had with fishers of Trombay reveal that even Mumbai's eastern coastline—the Thane Creek's waters and marshes—are often slick with oil, carried by the flow of tidal creek waters. The now customary and ordinary arrivals of oil on Mumbai's shorelines every monsoon appear without an explicit author or cause. Nevertheless, they are significant. Helen White, an oceanographer who previously worked in the aftermath of the Deepwater Horizon oil disaster in the Gulf of Mexico, pointed out in her work on Mumbai's shorelines that the oil on the shorelines was more like tar mats than tar balls, due to their large size of four to six feet in diameter. This extent of oiling is less like what would be seen from natural seep inputs and is more similar to oil that would be detected following an oil spill (pers. comm., March 14, 2022).[39]

State pollution control boards—the primary agencies tasked with recording pollution levels and citing offenses—do not have jurisdiction to assess the waters in and around Bombay High, since these are beyond twelve nautical miles from the coast. Once this oil reaches the coast, state pollution officials do record its presence, but they are unable to ascertain its source.[40] They sometimes describe such oil as coming not from the oil fields but rather from ships, tankers, and logistics operations. The Pollution Control Board does not have protocols in place to distinguish between these sources. Thus, oil escapes more than the geographies of its production. It also escapes attributions of responsibility. It continues to leak into the urban sea, which is both full of infrastructure and a data desert.[41]

However, recent research conducted by Dr. Suneel at the National Institute for Oceanography shows that a significant quantity of the oil found on the coastlines of Karnataka, Goa, Maharashtra, and Gujarat during every monsoon is indeed oil that is produced at Bombay High and nearby oil fields.[42] This research helps explain the source of the oil found in coastal waters and why it regularly coats beaches up and down the coastline every monsoon,[43] including the beaches of Mumbai (fig. 5). Over 330 million human residents living in the coastal regions of these states,[44] and many other nonhumans living in the eastern Arabian Sea, live in a sea that is also composed of oil.

Taken together, the spill events (from tankers, oil rigs, and burst oil and gas lines) and the ordinary events of leakage (through quietly leaking lines and oil exploration and extraction processes) work together to make oil a central feature of the city's urban sea. Here, as with the port, the production of oil—as a valuable resource

Figure 5. Tarballs wash up on Aksa Beach, Mumbai. April 6, 2022. Images posted on Twitter, Oil Spill Monitoring Network of India, @IndianOilSpills, April 13, 2022.

for the nation—is predicated upon an ongoing and accretive devaluation of extant ecologies, livelihoods, and social relations in the city. The sea is emptied of fishers and fish through the exclusive and capital-intensive installation of oil prospecting and extraction infrastructures. The subsequent pollution caused by these infrastructures does not undermine these operations but makes them more productive. Wide-scale pollution prevents other kinds of value, social relations, and life from proliferating in the urban sea, making logistics and oil production among the only activities that can float and thrive in its thinning waters.

Emptying 3. Sagarmala: Of Necklaces and Belts, or Roads and Nodes

The Sagarmala (or "sea's necklace") project is a massive effort by India's national Ministry of Shipping and Surface Transport to modernize the country's marine logistics sector. Originally proposed in 2003 by the national government under the leadership of the Bharatiya Janata Party (BJP), the project was revitalized in 2016 after the party returned to power.[45] The project identifies ports as "gateways to development," here not just to move and sell commodities on land, but also to produce, connect, and proliferate—indeed to infrastructure the sea. Written into being by international consultants McKinsey and Co., the project proposes "port-led development" to reduce logistics costs of national and international trade by reducing cargo transportation

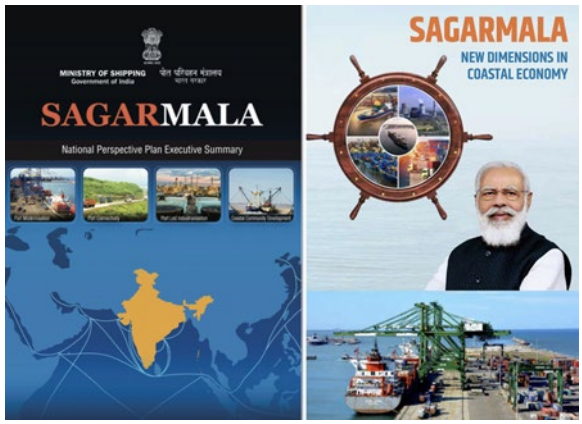


Figure 6. Imaging the Sagarmala project. Covers of Sagarmala reports prepared by the Ministry of Shipping, Government of India.

costs, streamlining container movement, and locating industries near coasts and ports through the development of manufacturing clusters.

In its form and content, the plan references China's Belt and Road Initiative. For example, the cover of the plan document indicates regional connectivity to India's major ports using visual imagery reminiscent of China's initiative (fig. 6). Inside the plan, comparisons of port capacity or of logistics costs are made explicitly, and almost solely with reference to the capacities or costs of Chinese logistics. A shorter project summary, also on the department's website, nationalizes the imaginary that is moving this project forward. The cover features the sea as a backdrop to the staging of infrastructure; each quadrant of the sailor's wheel on the front is occupied by different infrastructures: a cargo ship, container trucks, a nuclear energy reactor's cooling tower, and fishing boats. As with other government materials of late, it features the prime minister gazing down from above, a new marker of his populist mode of government. A generic port occupies the bottom third of the cover. It is uncertain where this port is located.

The Sagarmala project is most focused on extending and expanding the country's container port infrastructure. Projects such as deepening and channeling, works necessary for new terminals, are its primary focus. Indeed, in 2016 the JNPT developed a master plan under the Sagarmala project, according to which several port deepening and extension works are currently being executed. Sagarmala also seeks to change the modes of governance of these projects, seeking to render the work of both machines and people electronic. Finally, the Sagarmala projects include smaller initiatives on multimodal and inland water transport. Taken together, however, the scale of ambitions for the Sagarmala project is massive—over 802 projects worth US $473.7 billion are either proposed, under implementation, or completed, with most of the projects still in the first two stages. According to the Ministry for Information and Broadcasting, the "'concept' of the Sagarmala was approved by cabinet in 2015. It now includes 802 projects worth 5.5 lakh crore=73.7 billion USD. Of these, projects of 3 lakh crore are either completed on under implementation."[46] Yet, a report of the panel on "Promotion of Infrastructure in India's Maritime Sector" said that "only 172 projects out of the 802 sanctioned projects under the Sagarmala Programme have been completed and the remaining 632 projects are under the implementation stage."[47]

This is a project mobilized by the dreams of connection across geographies and logistical engines of capitalism. It envisions strengthening the links between different logistical operations, from factories and industrial zones, through ports, onto containers, and then back. It is perhaps also not incidental that the BJP politician Nitin Gadkari was the minister in charge of the Ministry of Shipping and Surface Transport when the Sagarmala project was proposed. He has a history of proposing infrastructure projects. We first encountered his work when he was formerly in charge of the Public Works Department of the government of Maharashtra in the early 2000s. Wishing to develop Mumbai on the Shanghai model, he had overseen the massive expansion of road infrastructure in Mumbai, building fifty flyovers and one "superexpress highway" joining Mumbai to Pune. Rationalizations for both projects, incidentally, were also produced in report form by McKinsey, an indication of how infrastructure projects are frequently justified and cross-referenced across space, polities, and sectors.

For Gadkari, infrastructuring the sea through port and auxiliary infrastructure modernization is a mode of making the country's logistics sector stronger. As was previously argued in an article about Gadkari's road projects, the modern fantasy of smooth-flowing cargo on a newly constructed logistics infrastructure not only calls out modes of infrastructure connection as funded projects detail, but also requires a series of infrastructural disconnections to become infrastructure. The Sagarmala project is being layered on top of what is already a very densely occupied sea. For the sea to become a logistics corridor, it must be further eviscerated of its different occupants and occupations: fish, fishers, and their nets. Composed of corridors, new and upgraded ports, and coastal economic zones (compara-

ble to special economic zones and exclusive economic zones), the Sagarmala project is accelerating the transformation and displacement of coastal communities up and down the Maharashtra coastline.

In its initial rendering, the Sagarmala project had proposed a "corridor" in the sea—an exclusive zone that was between fifteen and thirty nautical miles from the shore—that would be reserved for container traffic to travel up and down the eastern and western coastlines of India without interruption. Fishing, and in particular fishing nets, would not be permitted in these waters. A similar proscription against fishing would exist for the legs (Ganesh called them *tangs*, Hindi for "legs") that would connect the maritime highway to ports on India's coastlines.

Trawlers and purse seine net fishers who work in this same space were outraged by these provisions.[48] In our conversations in 2018, Ganesh had pointed to the ways in which the expansion of the more recently built port near Karanja had filled in one hundred acres of wetlands and fishing grounds, effectively making them off limits for coastal fishers. "It's the same in Rewa, Murud, where they are filling in wetlands," he said. "It's the same in Ulwe." Fishing areas are being filled in for ports. In other areas, fishing is no longer allowed. For example, fishing nets are no longer allowed in Mora because the nets tangle boats going to JNPT, he told me. "This is the end of fishing," he said.

To fight against the end of fishing, Ganesh and other fishers had organized a massive protest in opposition to the Sagarmala project. The meeting organized by the National Fishworkers Forum and its affiliate organization in Maharashtra (the Maharashtra Macchimar Kruti Samiti) in October 2018 was large, attended by hundreds, if not thousands, of fishers from around the region. Even more would have arrived had they not been turned back by the police, who did not permit their boats to land. Fearing large-scale protests, the police fenced off access to the pier with handcarts usually used to transport oil and gasoline to the trawlers. Nevertheless, many others took trains to the venue and marched into the protest loudly and with force. In their negotiations with the police, Nikhil noticed how they wielded their symbolic authority as the region's original inhabitants to make moral claims for the right to speak, to protest, and to be present against the large infrastructure corridor. It was a learning that was achieved partly through the phenomenal organizing of fisher communities, often in response to the organization of the sea as an industrial fishing zone.

At the meeting, which was also attended by political leaders and activists, fishers pointed out that few fish were available in near-shore waters. In addition, to be compelled to go more than thirty-five nautical miles away from the shoreline was beyond the capacity of these boats, in addition to causing larger bills and unsustainable fuel consumption. The corridor, they said, was made with little consultation of coastal communities. The government, one speaker said, was "stepping on their stomachs" in a bid to build infrastructure for massive container ships. The banner announcing the event made this point even more clearly, depicting a massive container ship that dwarfed and threatened small fishing vessels bearing Indian flags in the vicinity (figs. 7a–7b). How would fishers eat, how would they feed the nation, the speakers on the dais asked again and again, if they were not allowed to fish in the only waters that had fish in the sea?[49] Following the massive nationwide mobilization by fish workers (of which this event was a part),[50] the proposal to produce and police exclusive shipping corridors was dropped from the Sagarmala project. The other components of the project—a palimpsest of ports, coastal economic zones, container terminals, landfills, and dredging works—continue apace.

Sagarmala epitomizes a vision that pulls together multiple public and private interests around the idea of the blue economy twinned with national security. Recent national policies for the fisheries sector—for instance, 2017's National Policy on Marine Fisheries, and 2020's draft National Fisheries Policy—revolve around ushering in a *neel kranti* (blue revolution) drawing on ideas promoting blue growth and sustainable development of the oceans (referencing goal number 14 of the UN's sustainable development goals).[51] The blue revolution, however, simply repeats in the sea the failed projects of India's land-based green revolution. Like the green revolution, the projects of the blue revolution promise to solve humanity's most urgent social and environmental concerns, but they usually entail more intensive dispossession, resource depletion, and ecological crisis.[52] These developmentalist stories buttress the spatial imperative to infrastructure the sea. They are typically decoupled from what the infrastructure space is doing—the unequal burdens it visits on coastal communities, labor, and the environment, and the deep contestations it invites in response to environmental injustices.

Fisher Politics across the Urban Sea

As we have described in this article so far, fishers have been made to occupy the margins of colonial and

Figure 7a. Fisher meeting organized by the National Fishworkers Forum and the Maharashtra Macchimar Kruti Samiti opposing the Sagarmala project, October 2018. Photo by Nikhil Anand.

Figure 7b. Fishers from many parts of the state, and particularly the Mumbai metropolitan region, attended this meeting. Photo by Nikhil Anand.

postcolonial lands and waters, first through colonial and then through postcolonial policies, law, and science[53] (see also Raman in this issue). The Indian coast was framed as a bounded "locality" inhabited by subsistence fishers, separated and made distinct from the sea of national logistics, particularly shipping routes, and port infrastructure that was seen as vital to the well-being of national-imperial-economic space.[54] In her study of colonial Bombay, Sheetal Chhabria echoes Subramanian's argument that the hitching of the Koli caste identity to that of "fishermen" more broadly had the effect of "primitivizing the coast . . . where the caste nature of fishers . . . [arises] from their labor and the very landscape they inhabit."[55] This view of the coast has contributed to port landscapes being valued more highly than those of artisanal fishers, with tremendous consequences for fishers and coastal ecologies.

As developmentalist subjects of the postcolonial nation, fishers and fisheries were modernized in the mid-twentieth century by promoting mechanization for export-oriented growth, which privileged the growth of a class of private trawler fishers among the Kolis and entrepreneurs from other castes.[56] The state's focus on the modernization of fisheries expanded the use of technology in fishing and inserted the state in the everyday life of fishers—most notably through the creation and legitimization of a modern institutional form—fishing cooperative societies, and the associated financial and technological infrastructures that were afforded by this transition (loans for buying trawlers, diesel subsidies, technology upgrades, etc.). The state's underwriting of the unequal use of technology thus set the stage for tension between trawler and artisanal fishers, i.e., between more capital-intensive fishers and those who practiced fishing as a caste-based occupation, using older technology and techniques.[57] Artisanal fishers who had succeeded in claiming three nautical miles from the coast as their sovereign right by customary use found themselves overwhelmed by commercial trawler fishers who could fish anywhere within national territorial waters (twelve nautical miles). Artisanal fishers did not passively accept this hierarchical carving-up of the sea. The National Fishworkers Forum was registered in 1978 as a national federation of small fishworkers' unions to advocate for the rights of artisanal fishers. But with mechanization of fishing, many of the fishers' leaders are drawn from larger boat owners, as both Nikhil and Lalitha have learned.[58] However, faced by the greater challenges posed by the Sagarmala, the JNPT, and foreign vessels, fishing cooperatives, once the arm of the state, have now become essential mobilizing units sometimes acting in cooperation with artisanal fishers. Although struggles between artisanal crafts and trawlers are serious, they have also been able to form (uneasy) alliances to wage battle against newer common enemies such as Sagarmala, the JNPT, and foreign vessels.

Fisher protests are rooted in a long history, and their politics illuminate a dynamic, dialogical relationship between claims and rights in which practices of claim-making generate new understandings and subjects of rights. Their political claims to the lands and waters of the city have long mobilized rights both as autochthonous residents of Mumbai's estuary and as citizens of the postcolonial state.[59] For instance, Trombay's fishers have shared with Lalitha that until about twenty years ago they used to pay a tax for the right to fish in their customary stake fishing areas in the sea, called *saj*, to the customs department. They used their receipts for the payment of tax to make political claims to land tenure and for access to fish in the sea. Importantly, their claims were made not just on the political ground of customary livelihood claims as the indigenous artisanal fisher, but also as taxpaying citizens of the Indian nation-state. These facts reveal that fishers "constitute themselves as subjects of rights in relation to existing histories and hegemonies."[60] Their long and multihued engagements with the state and habitation of the city troubles the rendering of Kolis as purely Indigenous, practicing a traditional livelihood that is outside history. Across colonial and postcolonial periods, fishers have navigated a complex world of institutional authorities to craft claims based on identity (caste and Indigeneity), sovereignty based on customary use, and ecological stewardship, livelihood, and citizenship.

In recent years, the state has been mobilizing the logics of compensation that was previously extended to project-affected persons (PAPs) for infrastructure projects on land, to extend to infrastructure projects in the sea as a result of court cases filed by fishers for damage to their livelihood. In the Maharashtra Trans Harbour Link sea bridge project, the state has acknowledged fishers' claims by defining the ancestral *saj* fishing areas in the sea as a special category for compensation for PAPs. As the sea is being infrastructured with hydrocarbon and logistics infrastructures—and as the sea of fish is being replaced by the sea of infrastructural accretions—Koli residents of the city are being turned even further toward what they see as better life opportunities they may secure through their relations with urban land and landed livelihoods.

In a sense, this is an intensification of a long, unfolding process. Koli residents in Mumbai have had ambivalent relationships to the city and its opportunities ever since the Portuguese (and later British) colonization of the city. Since at least the middle of the twentieth century, Koli residents of its fishing villages have provided labor and services to state agencies operating in the sea and on the coasts.[61] For instance, many fishers in Worli *koliwada* that Nikhil spoke with worked or have worked simultaneously in industrial units, the services industry, the navy, and at the port. Now, as formal work opportunities continue to subside further due to deindustrialization of the city and the closure of its ports, Koli fishers have turned to speculating in land to secure their futures.[62]

Today, many Kolis rent part of their expanded homes to urban residents looking for affordable housing in the city. Others seek to redevelop their homes and lands so they may thrive in the land-filled city of real estate. Conflicts within *koliwadas* around the future and development of communally owned lands that have been customarily used for fishing purposes and that are typically governed by traditional community institutions are especially intense, as Wagh documents in the case of Versova *Koliwada*[63] and Kamath and Dubey discuss for Trombay *Koliwada*.[64] These transformations and alienations generate much internal strife within *koliwadas* between older fishers who insist on the primacy of fisher and allied occupations in the communities, and those for whom these modes of life and living are foreclosed. This latter group include Koli youth who are no longer interested in fishing as a livelihood as well as those who work other jobs and wish to free up the common land from fishing for other, higher-valued uses.

Conclusion: Evisceration, Infrastructure, Space

In this article we describe the ways in which cities, and in particular port and oil infrastructures, colonize the sea. The sea is transformed into an infrastructure of commerce that connects the bourgeois city to global capital and commodity circuits by ports, oilfields, and logistics. In so doing, it empties the sea of both fish and fishers. Infrastructures transform fisher commons into exclusionary zones. These zones produce the categories of encroachers, illegal fishers, and pirates. They are heavily infrastructured state spaces that are nevertheless placed beyond the reach of democratic oversight and politics.

We posit that through infrastructures such as ports, pipelines, coastal corridors, and the institutional rules and stories of blue revolution that sustain and reproduce these assemblages, Mumbai's seas have been urbanized and eviscerated as toxic, industrialized, and enclosed zones, intensified by the draining of wetlands and the harming of marginalized groups such as fishers and workers in the docks and factories. Infrastructuring the sea is performed across colonial and postcolonial time scales and necessitates the evisceration of life-worlds that cloud its waters. Capitalist restructuring dictates the continuous expansion of ports in keeping with the latest technologies, the enclosure of larger zones of the sea to generate new opportunities for capital accumulation, and the everyday discharge and leakage of waste into the sea and creeks. Technocratic regulations, in turn, privilege market incentives by streamlining and decentralizing customs, utilizing cheap and informalized labor, diluting or suspending environmental laws, and refusing to publicly disclose pollution data. This palimpsest of projects serves to displace and empty the sea of fishing.

While the fisher movement's explicit oppositional stance has enjoyed limited policy success, we want to suggest that their power derives from visibilizing the copresence of a fisher's world that preceded colonial and postcolonial capitalism, working with and against state and capital. Through their everyday practice and episodic, spectacular protests, fishers seek to "return to that game of the laws and people that the market has erased or excluded for its convenience."[65] At times, fishers through their politics seek to transform this space of capitalist circulation into the place of a community, making what was unseen visible. But simultaneously, fisher communities have adapted to eviscerations of the sea in order to survive by turning to speculation in land. If the essential work of politics is to make the world of its subjects (here, the fishers) and its operations seen, then political demonstration makes visible that which had no reason to be seen; it places one world in another.[66] Fisher protests demonstrate the copresence of many worlds: the infrastructured sea, the sea of fish and fishers, and the city of fishers. This poses a challenge to the established hierarchy of the infrastructured sea over the sea of fishing.

Fisher movements hold within them the power to imagine our city and sea environments differently, in ways that break with the established order of evisceration of the seas as the necessary and only reasonable option. These practices lead us to question the claims that a certain amount of waste is necessary for urbanization and that it can only be alleviated by ushering in a blue revolution wherein the sea of fishing is displaced

and fisher movements for environmental justice are delegitimated. Through these politics, fishers demonstrate another possible world.

This is a world that fishers now make in ambivalent terrain. Long squeezed at the edges of infrastructures of land and sea (and the separations these infrastructures make), fishers are not just articulating a different social and political imaginary. They are also negotiating with the terms and in the muddy terrain of politics in Mumbai—a terrain made with their knowledge of sea life and livelihoods, the eviscerations of port and oil infrastructures, and their fabricated and fabulously lucrative real estate.

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Notes

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1. Gidwani and Reddy, "The Afterlives of Waste."

2. Prakash, *Mumbai Fables*.

3. Simpson, *Mohawk Interruptus*.

4. Deloughrey, *Allegories of the Anthropocene*.

5. Marshall, "Deconstructing *Aqua Nullius*."

6. Hofmeyr, "Provisional Notes on Hydrocolonialism."

7. Brenner and Schmid, "Planetary Urbanization."

8. Farooqui, *Opium City*.

9. Couling and Hein, "The Urbanisation of the Sea."

10. Here we also build on the work of historians Engseng Ho, Kirti N. Chaudhuri, and Michael Pearson, who have shown that the Arabian Sea was full of activity prior to colonization and that one of British colonialism's first projects was emptying the sea. See Ho, *The Graves of Tarim*; Chaudhuri, *From the Atlantic to the Arabian Sea*; and Pearson, *The Indian Ocean*.

11. Prakash, *Mumbai Fables*.

12. Gidwani and Reddy, "The Afterlives of Waste."

13. See Anthony, "Mumbai's Coastlines are Changing Unrecognizably."

14. See Stengers, "Introductory Notes," and De la Cadena, "Indigenous Cosmopolitics in the Andes."

15. See Rodgers and O'Neill, "Infrastructural Violence"; Graham, "The City as Sociotechnical Process"; and Stamatopoulou-Robbins, *Waste Siege*.

16. Dua, *Captured at Sea*.

17. Farooqui, *Opium City*.

18. See Quist and Nygren, "Debating the Unknowns"; Couling and Hein, "The Urbanization of the Sea"; Huebner, "Earth's Amphibious Transformation"; and Chubb, "China's 'Blue Territory.'"

19. Braverman and Johnson, *Blue Legalities*.

20. Quist and Nygren, "Contested Claims over Space and Identity."

21. Couling and Hein, "The Urbanisation of the Sea."

22. See Anand, "Leaky States"; Perrow, *Normal Accidents*, 19.

23. Kamath, *Tides of Time*, 150.

24. Chhabria, "The Aboriginal Alibi."

25. Kamath, *Tides of Time*.

26. Kamath, *Tides of Time*.

27. Bear, *Navigating Austerity*.

28. See "About Us," JNPA: India's Best Performing Port, https://www.jnport.gov.in/about_us (accessed December 5, 2023).

29. Rajaram Patil, pers. comm with article author Lalitha Kamath, October 27, 2020.

30. Ganesh Nakhwa, "By the Kolis, of the Kolis, and for the Kolis," online presentation, Bombay 61 and Ministry of Mumbai's Magic, Mumbai, August 21, 2021.

31. Anand, "TOXICITY 1."

32. Venkataramani, "Waste's Translations."

33. Kamath and Dubey, "Commoning the Established Order of Property."

34. See Mumbai Port Complex Master Plan by HCP (Hasmukh C. Patel), the design practice that is the official consultant for this project. Accessible at https://hcp.co.in/urbanism/mumbai-port-complex-master-plan/. See also Indorewala, "Plan for Mumbai's Eastern Waterfront."

35. Ganesh Nakhwa, "By the Kolis, of the Kolis, and for the Kolis," online presentation, Bombay 61 and Ministry of Mumbai's Magic, Mumbai, August 21, 2021.

36. Jain, "Fluvial Government."

37. Sethi and PTI, "Environment Ministry Notice to ONGC."

38. Appel, Mason, and Watts, *Subterranean Estates*.

39. Helen White, pers. comm. with article author Lalitha Kamath, March 14, 2022.

40. Palit, "Recurring Tar Pollution."

41. Wiggin, "Restoring a River." In her studies of toxic urbanscapes in Philadelphia, Wiggin suggests that data deserts aren't regulatory landscapes in which data is absent, but practices through which data is absented so that the work of oil refining can continue.

42. Suneel, Ciappa, and Vethamony, "Backtrack Modeling."

43. Suneel et al., "Source Investigation."

44. See Down to Earth, "Eyeing the Coastlines," https://www.downtoearth.org.in/indepth/eyeing-the-coastlines-20524 (accessed December 5, 2023).

45. See Singh, "A Tale of Two Garlands."

46. Ministry for Information and Broadcasting, "Sagarmala."

47. See Businessline Bureau, "Sagarmala Delay."

48. Purse seine nets are used in commercial fishing to target dense schools of fish like tuna and mackerel.

49. Ganesh would describe how the near shore was devoid of fish shoals on account of coastal pollution. The continental shelf, on the other hand, did not extend much over thirty miles on the western coastline. Most fisheries and fish live in the shallower waters of the continental shelf, Nikhil was told. Thus, the exclusionary zones for the shipping corridor were a substantive enclosure of the fisheries that fishers worked in.

50. Fishworkers protested the corridor in different coastal states in India on October 30, 2018. These included protests in Gujarat, Maharashtra, Karnataka, Kerala, Tamil Nadu, and West Bengal.

51. UN sustainable development goal 14 is to "conserve and sustainably use the oceans, seas and marine resources for sustainable development." United Nations, Department of Economic and Social Affairs, Sustainable Development, "Goals," https://sdgs.un.org/goals/goal14 (accessed December 5, 2023).

52. Nogue-Alguero, "Growth in the Docks"; Hadjimichael, "Blue Degrowth."

53. See Subramanian, *Shorelines*, and Raman, "Muddy Waters: Coastal Property in India," in this issue.

54. Subramanian, *Shorelines*.

55. Chhabria, "The Aboriginal Alibi," 6–7.

56. Nair, *Set Adrift*.

57. Nair, *Set Adrift*.

58. For example, Ganesh, the fisher quoted in the article, is the president of the purse seine net boat owners association in Karanja. In addition, he often speaks publicly on behalf of artisanal fishers as well.

59. Venkataramani, "Identification, Materiality, and Housing Transformations in Mumbai."

60. Subramanian, *Shorelines*, 4.

61. Chhabria, "The Aboriginal Alibi," and Ranade, "The Kolis of Mumbai at Crossroads."

62. See Wagh, "Commoners as Enclosers," and Venkataramani, "Identification, Materiality, and Housing Transformations in Mumbai."

63. Wagh, "Commoners as Enclosers."

64. Kamath and Dubey, "Commoning the Established Order of Property."

65. Easterling, *Extrastatecraft*, 431.

66. Rancière, "Dissensus."

References

Anand, Nikhil. "Leaky States: Water Audits, Ignorance, and the Politics of Infrastructure." *Public Culture* 27, no. 2 (2015): 305–30.

Anand, Nikhil. "TOXICITY 1: On Ambiguity and Sewage in Mumbai's Urban Sea." *International Journal of Urban and Regional Research* 46, no. 4 (2022): 687–97.

Anthony, Hepzi. "Mumbai's Coastlines Are Changing Unrecognizably. Do We Want That?" *Citizen Matters*, August 8, 2020. https://mumbai.citizenmatters.in/mumbai-coastlines-are-changing-unrecognisably-do-we-want-that-19819.

Appel, Hannah, Arthur Mason, and Michael Watts, eds. *Subterranean Estates: Life Worlds of Oil and Gas*. Ithaca, NY: Cornell University Press, 2015.

Bear, Laura. *Navigating Austerity: Currents of Debt along a South Asian River*. Stanford, CA: Stanford University Press, 2020.

Braverman, Irus, and Elizabeth R. Johnson, eds. *Blue Legalities: The Life and Laws of the Sea*. Durham, NC: Duke University Press, 2020.

Brenner, Neil, and Christian Schmid. "'Planetary Urbanization': From Urban Constellations (2011)." In *The Globalizing Cities Reader*, edited by Xuefei Ren and Roger Keil, 449–52. London: Routledge, 2017.

Businessline Bureau. "Sagarmala Delay. Give Reasons for Delay in Projects under Sagarmala Programme: Panel." *Businessline*, August 05, 2021. https://www.thehindubusinessline.com/news/national/give-reasons-for-delay-in-projects-under-sagarmala-programme-panel/article35729963.ece.

Chaudhuri, Kirti N. *From the Atlantic to the Arabian Sea: A Polyphonic Essay on History*. Florence, Italy: Schifanoia, 1995.

Chhabria, Sheetal. "The Aboriginal Alibi: Governing Dispossession in Colonial Bombay." *Comparative Studies in Society and History* 60, no. 4 (2018): 1096–1126.

Chubb, Andrew. "China's 'Blue Territory' and the Technosphere in Maritime East Asia." *Technosphere Magazine*, April 15, 2017. https://technosphere-magazine.hkw.de/p/Chinas-Blue-Territory-and-the-Technosphere-in-Maritime-East-Asia-gihSRWtV8AmPTof2traWnA.

Couling, Nancy, and Carola Hein. *The Urbanisation of the Sea: From Concepts and Analysis to Design*. Rotterdam: nai010, 2020.

De la Cadena, Marisol. "Indigenous Cosmopolitics in the Andes: Conceptual Reflections beyond 'Politics.'" *Cultural Anthropology* 25, no. 2 (2010): 334–70.

DeLoughrey, Elizabeth M. *Allegories of the Anthropocene*. Durham, NC: Duke University Press, 2019.

Dua, Jatin. *Captured at Sea: Piracy and Protection in the Indian Ocean*. Vol. 3. Berkeley: University of California Press, 2019.

Easterling, Keller. *Extrastatecraft: The Power of Infrastructure Space*. Reprint ed. London: Verso, 2016.

Farooqui, Amar. *Opium City: The Making of Early Victorian Bombay*. Gurgaon: Three Essays Collective, 2006.

Gidwani, Vinay, and Rajyashree N. Reddy. "The Afterlives of 'Waste': Notes from India for a Minor History of Capitalist Surplus." *Antipode* 43, no. 5 (2011): 1625–58.

Graham, Stephen. "The City as Sociotechnical Process: Networked Mobilities and Urban Social Inequalities." *City* 5, no. 3 (2001): 339–49.

Hadjimichael, M. "Blue Degrowth and the Politics of the Sea: Rethinking the Blue Economy." *Sustainability Science* 15 (2020): 1–10.

Ho, Engseng. *The Graves of Tarim: Genealogy and Mobility across the Indian Ocean*. Vol. 3. Berkeley: University of California Press, 2006.

Hofmeyr, Isabel. "Provisional Notes on Hydrocolonialism." *English Language Notes* 57, no. 1 (2019): 11–20.

Huebner, Stefan. "Earth's Amphibious Transformation: Urbanizing Asia's Seas." *Asia Global Online*, August 12, 2021. https://www.asiaglobalonline.hku.hk/earths-amphibious-transformation-urbanizing-asias-seas.

Indorewala, Hussain. "Plan for Mumbai's Eastern Waterfront Uses Public Land to Benefit the Wealthy—and Must Be Resisted." *Scroll*, March 21, 2020. https://scroll.in/article/956768/plan-for-mumbais-eastern-waterfront-uses-public-land-to-benefit-the-wealth.

Jain, Sarandha. "Fluvial Government: Tracking Petroleum as Liquid Infrastructure in India." PhD diss., Columbia University, 2022.

Kamath, L., and G. Dubey. "Commoning the Established Order of Property." *Urbanization* 5, no. 2 (2020): 82–101. https://doi.org/10.1177/2455747120972983.

Kamath, M. V. *Tides of Time: History of Mumbai Port*. Mumbai: Port Trust, 2000.

Marshall, Virginia. "Deconstructing *Aqua Nullius*: Reclaiming Aboriginal Water Rights and Communal Identity in Australia." *Indigenous Law Bulletin* 8, no. 26 (2016): 9–14.

Ministry for Information and Broadcasting. "Sagarmala: New Dimensions in Coastal Economy." New Delhi: Government of India, n.d.

Nair, Gayatri. *Set Adrift: Capitalist Transformations and Community Politics along Mumbai's Shore*. New Delhi: Oxford University Press, 2021.

Nogue-Alguero, Borja. "Growth in the Docks: Ports, Metabolic Flows, and Socio-environmental Impacts." *Sustainability Science* 15 (2020): 11–30.

Palit, Rituparna. "Recurring Tar Pollution along Mumbai Beaches Needs Immediate Attention." *Citizen Matters*, September 3, 2021. https://mumbai.citizenmatters.in/oil-spill-tar-pollution-on-mumbai-beaches-25853.

Pearson, Michael N. *The Indian Ocean*. New York: Routledge, 2003.

Perrow, Charles. *Normal Accidents: Living with High-Risk Technologies*. New York: Basic Books, 1984.

Prakash, Gyan. *Mumbai Fables*. Princeton, NJ: Princeton University Press, 2010.

Quist, Liina-Maija, and Anja Nygren. "Contested Claims over Space and Identity between Fishers and the Oil Industry in Mexico." *Geoforum* 63 (2015): 44–54.

Quist, Liina-Maija, and Anja Nygren. "Debating the Unknowns of Marine Oil Exploration in Mexico." *Extractive Industries and Society* 6, no. 3 (2019): 855–62.

Ranade, Sanjay. "The Kolis of Mumbai at Crossroads: Religion, Business, and Urbanisation in Cosmopolitan Bombay Today." Paper presented at the 17th Biennial Conference of the Asian Studies Association of Australia, Melbourne, July 1–3, 2008.

Rancière, Jacques. *Dissensus: On Politics and Aesthetics*. London: Bloomsbury, 2010.

Rodgers, Dennis, and Bruce O'Neill. "Infrastructural Violence: Introduction to the Special Issue." *Ethnography* 13, no. 4 (2012): 401–12.

Sethi, Neha, and PTI. "Environment Ministry Notice to ONGC over Mumbai Oil Spill." *Live Mint*, October 10, 2013. https://www.livemint.com/Politics/5JddCGpvGnqigexalPxbJI/Environment-ministry-notice-to-ONGC-over-Mumbai-oil-spill.html.

Simpson, Audra. *Mohawk Interruptus: Political Life across the Borders of Settler States*. Durham, NC: Duke University Press, 2014.

Singh, Nirvikar. "A Tale of Two Garlands." *Financial Express*, January 31, 2022. https://www.financialexpress.com/opinion/a-tale-of-two-garlands/2419987/.

Stamatopoulou-Robbins, Sophia. *Waste Siege: The Life of Infrastructure in Palestine*. Stanford, CA: Stanford University Press, 2019.

Stengers, Isabelle. "Introductory Notes on an Ecology of Practices." *Cultural Studies Review* 11, no. 1 (2005): 183–96.

Subramanian, Ajantha. *Shorelines: Space and Rights in South India*. Stanford, CA: Stanford University Press, 2009.

Suneel, V., A. Ciappa, and P. Vethamony. "Backtrack Modeling to Locate the Origin of Tar Balls Depositing along the West Coast of India." *Science of the Total Environment* 569 (2016): 31–39.

Suneel, V., P. Vethamony, B. G. Naik, K. Vinod Kumar, L. Sreenu, S. V. Samiksha, Yunus Tai, and K. Sudheesh. "Source Investigation of the Tar Balls Deposited along the Gujarat Coast, India, Using Chemical Fingerprinting and Transport Modeling Techniques." *Environmental Science & Technology* 48, no. 19 (2014): 11343–51.

Venkataramani, Chitra. "Identification, Materiality, and Housing Transformations in Mumbai." *Trends and Issues in Housing in Asia: Coming of an Age* (2017): 278.

Venkataramani, Chitra. "Waste's Translations: Estuaries, Marine Life, and the Chemistry of Mumbai's Dumping Grounds." *American Ethnologist* 48, no. 4 (2021): 337–56.

Wagh, Shweta. "Commoners as Enclosers: Land Tenures and Conflicting Claims in a Mumbai *Koliwada*." Mumbai: KRVIA, 2017. https://mdl.donau-uni.ac.at/binucom/pluginfile.php/405/mod_page/content/32/P7_WP2.5_Case_Study_3_Commoners_as_Enclosers_KRVIA.pdf.

Wiggin, Bethany. "Restoring a River, Re-Storying History." *International Journal of Urban and Regional Research* 46, no. 4 (2022): 660–73.