

Spent Earth

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ABSTRACT This essay considers the multiscale manifestations of loss and the destruction of loss through the material-semiotic figure of “spent earth,” a toxic waste by-product generated by the industrial bleaching of crude oils into edible oils. Drawing on two distinct encounters with spent earth in the Indonesian palm oil sector, the essay reflects on the substance’s unevenly distributed effects across peoples, places, and generations; its association with visions of purity and realities of complicity; and the importance of attending to loss through both its situated, localized manifestations and its partial connections across sites, scales, and subjects.

KEYWORDS spent earth, palm oil, toxicity, complicity, impurity

In late June 2017, I toured a palm oil refinery in a suburban agroindustrial estate a few miles north of Jakarta. The visit was organized by one of the largest oil palm conglomerates in Indonesia—the world’s top palm oil producing country—and part of an ethnographic project that I was conducting on the socioenvironmental impacts of the Southeast Asian agribusiness sector. Through this particular tour, I hoped to better understand the various stages of the industrial palm oil production process. The visit to the refinery was meticulously planned and remarkably comprehensive. Over the course of almost seven hours, estate managers and staff walked and talked me through the transformation of palm oil fruit and kernels into crude oils, refined oils, and, finally, marketable products—from the reception by truck or boat of the fresh fruit bunches from the plantations to their distribution across various units of the refinery precinct, where they were mechanically processed through high-heat and high-pressure sterilization, threshing, digestion, purification, clarification, fractionation, filtering, and drying. Standard operational procedures, laminated and taped up throughout the industrial estate, described in exhaustive detail the health, hygiene, and safety requirements involved at each step. Other efforts undertaken by the company to improve their environmental

practices were also highlighted—the establishment of conservation zones in their plantations, the responsible management of waste products, and the use of solar panels to power the processing plants. These efforts, my guide explained, were part of the company’s “journey toward sustainability.”

As we made our way toward the refinery’s main gates at the end of the tour, a pungent, sour odor hit my nostrils. My eyes began to sting. I noticed a row of metal barrels lining a corner of the precinct, which had not been included in our visit. The refinery manager explained that the barrels contained a substance known as “spent bleaching earth.” This black-brown, semisolid matter is a waste by-product of “bleaching earth,” a substance composed of powdered clay and silicon dioxide that is used in the industrial bleaching of crude palm oil into edible oil. High in fatty clay minerals and residual oils and metals, spent bleaching earth (commonly referred to by industrial palm oil producers as “spent earth”) is a central ingredient in the refining of various other vegetal and animal fats.¹ It is highly toxic and flammable; its drainage poses a threat to surface and ground water quality. For this reason, my guide explained, spent earth is classified as hazardous waste and must be disposed of at secure, contained landfills following extensive treatment. “It’s very expensive to do this, and also difficult,” he added, “but it’s important for the health and safety of the people and the planet.” I, feeling slightly nauseated, nodded, my eyes watering from the smell. A pool of viscous, dark liquid was forming at the base of the barrels. I wondered just how contained this toxic substance was—here, and wherever it would end up.

My next encounter with spent earth took place some three months later, in a rural corner of the Indonesian province of West Papua, during a visit to an oil palm plantation that is owned and managed by the same agribusiness conglomerate. This encounter occurred during fieldwork I was conducting among Indigenous Marind communities whose lands and territories had recently been converted to monocrop concessions. In this out-of-the-way place, lying some 3,700 kilometers east as the crow flies from Jakarta, spent earth was not to be found in secure landfills, waste management sites, or more-or-less contained barrels, let alone in treated form. Instead, the toxic substance was being dumped en masse by plantation operators into the rivers that Marind communities depend on for drinking, fishing, and bathing. I remembered the tour guide’s words: spent earth is expensive and difficult to dispose of safely.

My Marind companions explained that they had learned the term *spent earth*, or *tanah pemucat bekas* in Indonesian, from Javanese plantation agronomists who regularly held palm oil promotional and recruitment campaigns in their villages. During our journeys through the forests and plantations, and during our time in the villages, they identified this substance in many different forms. Spent earth was in the oily surface of the rivers, the poisoned bodies of dead fish, the contaminated

feathers and fur of cassowaries and boars, the skin rashes and boils of local villagers, and the breast milk and babies of the women who ingested or absorbed it. Spent earth was mingling with the soils of forests, swamps, and mangroves, its metal and oil contents killing off these soils' nutrients and undermining their capacity to sustain native fungal, microbial, animal, and vegetal communities of life. In this place, spent earth did not leak, trickle, or pool. It permeated every waterway and stained every riverbank. As my Marind companions lamented, this earth was "sick" and "dying"—just as the animals, plants, landscape, and even the seasons were dying because of oil palm. There was no way to tell how much earth had died because of spent earth, they explained, because spent earth "is everywhere, it has no boundaries or limits." This is a semisolid substance that seeps, solidifies, and spreads. It infiltrates the soil. It is (in) the flesh and fluids of all the beings who inhabit the soil. Here, the landscape and its lifeforms *are* the landfill.

And yet even as it remains unsettlingly amorphous in its toxic sensoriality, spent earth, my Marind friends emphasized, "must be mourned."² Singing, storying, and even touching this dangerous and deadly substance mattered to my companions because even though this earth was not "alive" like humans or animals, it, too, was a bearer of dignity. It, too, had to be grieved—not just because it was exploited and polluted but because the substance itself had been robbed of its capacity to nurture vegetal growth and instead turned into an unwitting agent of destruction and loss. Unlike native forest earths that support and regenerate more-than-human worlds, spent earth is condemned to kill all that it encounters. For this reason, my friends would often sit or crouch beside spent earth, express their anger, sadness, and grief toward it, and sing and story the destruction and loss that both create it and harm it.

The events recounted above, which happened in different places and times, mark in their juxtaposition interconnected moments of encounter with ecological crisis, mediated by the figure of spent earth and evocative of the granular specificity of loss and its reach in an epoch of planetary unraveling. Specifically, they invite us to approach spent earth as a material-semiotic figure whose effects span the realms of the literal and the figurative—one that carries multiple meanings and sustains different imaginaries at the same time as it connects and transforms physical sites and systems of production.³ Annually, around 120 million metric tons of oil are processed with bleaching earth globally, producing 2.5 million tons of spent earth. The substance's toxic effects on ecosystems and bodies are distributed across the tens of millions of hectares of oil palm plantations spread and spreading across the tropical belt. Most of this substance is dumped illegally, with only two companies in Indonesia treating it according to regulatory norms. Spent earth, the estate manager north of Jakarta explained, hadn't been included in my tour because it was not central to the palm oil production process. It was, in his words, "just a by-product."

By-products abound when one begins to think about the many other forms of collateral damage often unaccounted for, or elided, in the production of everyday commodities, including but not limited to palm oil. Think here of the diseased native soils of the tropics, the Indigenous and other rural communities displaced and dispossessed by cash crop industries, the plants and animals rendered vulnerable to endangerment and extinction in the wake of monocrops, and the futures of human and other-than-human generations yet to come and yet already contaminated by spent earth's latent toxicity.⁴

Spent earth's toxicity is compounded by its flammability. As it removes impurities including soaps, proteins, and coloring from palm oil, the substance becomes laden with clay minerals and oil, and therefore chemically unstable, with oxidation further heightening the risk of spontaneous autoignition. In its vulnerability to dangerous and unexpected combustion, spent earth conjures and symbolizes a process at once diagnostic and symptomatic of a world on fire, produced by a capitalist, consumerist logic grounded in the consumption of ever more resources in the name of ever more profit—or, put more crudely, a process fed and fueled by a relentless logic of burning shit up and burning shit down. If spent earth's flammability calls for control through careful disposal in secure landfills, the same cannot be said of the ravaging forest fires that have become a quasi-normative feature of Anthropocenic living, nor of the burning of coal that remains a primary energy source for many of the Anthropocene's dwellers. Spent earth partakes in this generalized regime of "pyropolitics,"⁵ wherein flammable futures have become the refrains of our times.

Spent earth is not good to live with.⁶ But an exercise in parsing suggests it may still be good to "think with" in times of ecological unmaking.⁷ Sit with those words for a moment. Let their multiple ramifications sink in. *Spent earth*.

Let us consider the *earth* of *spent earth*. Neither quite soil nor quite land, nor quite ground, earth is both at once, and more. It connects us all as a surface. It does not fall neatly within the bounds of the ecological, biological, or the species, as instituted in dominant Western scientific epistemologies—and yet, as my Marind companions remind us, it lives. It is formless, yet forming. It *does* things to the worlds it inhabits. In this respect, earth invites us to imagine and respond to environmental crisis beyond *bios* and to remember the multitudes of matter that participate in the making and unmaking of more-than-human worlds.

Besides the stuff upon which we tread, build, drive, and conduct practically all our other daily activities, the earth is also Earth—the 4.543-billion-year-old planet third in order of distance from the sun, spinning away somewhere between Venus and Mars, and home to nearly eight billion human beings. As the only astronomical object so far known to harbor life, it is, for now at least, the only commons we have. In this respect, Earth is our literal, shared ground of existence. Its scale exceeds

our perception—and yet it holds us. Thinking with e/Earth, then, draws attention to the indissociability from and embeddedness of the local in the planetary. As an interscalar vehicle, it is the terrain from which we learn to grapple with the entanglements of ecological destruction and loss across sites, subjects, and scales.⁸ Each of us is nourished and nurtured by particular, localized compositions and formations of earth. But we have only one Earth. And thus all earths are rare earths.

Let us now turn to the *spent of spent earth*. Alongside its monetary connotations, *spent* speaks to a sense of having been used (up)—and usually being unable to be used (up) once more. The word brings to mind a kind of wearing out or wearing down—a depletion of resources that can no longer be regenerated. Recall here that “*spent earth*” in agronomic parlance refers to a kind of waste or by-product generated when bleaching earth’s purifying functions have been fully exhausted. The term’s past tense suggests that this exhaustion is complete, or irreversible. It marks a point of no or of uncertain return. In this respect, *spentness* conjures the extractive, draining violence of natural resource exploitation regimes on the soils, waters, crops, animals, and people that these regimes rely upon to sustain their existence. Think here of the drainage waterways, the aridity of intensively cultivated landscapes, the infertility of overexploited arable terrains, the exhausted minerals and nutrients of plants grown in overconcentrated monocultures, or the depleted, worn-out bodies of plantation pesticide sprayers and laborers.

Spentness also operates affectively and psychologically. It evokes in figurative ways the thoughts, emotions, energies, actions, and resources invested by those involved in collective and situated struggles against climate and environmental injustice within and across the Global North and South—but also the sense of exhaustion, attrition, numbness, despair, and burnout that arises when it seems nothing is changing in the face of the insuperable force of climate change. Whether it is known as ecological grief, paralyzing despair, or that viscerally poetic if melancholic pathology of Anthropocenic living called “solastalgia,”⁹ *spentness* haunts the bodies and psyches of those who wonder what on earth can be done to address and overcome the ecological crisis. As such, the fate of the e/Earth is not of or about the e/Earth alone. In some ways, we’re *all spent*—even as we face and respond to this sense of exhaustion differently across space, time, and community. *Spentness*, then, like loss, destruction, and the “we” that experience them, is at once generalized and specific, collective and contingent, growingly present and still-always situated.

For many of us based in privileged parts of the Global North, *spentness* operates hand in hand with complicity. Complicity in ecological loss and destruction comes to stark light in the context of the production of commodities that, like palm oil, are ubiquitous in the modern, globalized world and almost impossible to fully excise from the daily life of most Western consumers. Palm oil is in Doritos

chips, Mars Bars, L'Oréal shampoos, Arnott's cookies, Maggi instant noodles, Palmolive soaps, Nivea face scrubs, and more. Chameleonic and omnipresent, found in over 80 percent of all supermarket goods globally, and known by over two hundred different compound names, palm oil travels across the world through tentacular supply chains, connecting us to faraway earths both sacrificed and spent.

Whether one is at the heart of an urban agroindustrial estate, on an out-of-the-way settler-colonized plantation frontier, or in a metropolitan supermarket chockfull of palm-oil-containing goods, one is, knowingly or not, in material and semiotic *relation* with spent earth. My Marind companions in rural West Papua are no exception. Even as their forests and groves give way to industrial monocrops without their consent and even as their lands and rivers become saturated with toxins, they, too, ingest palm oil in the instant noodles, processed biscuits, fizzy drinks, and soaps they increasingly use and consume. They, too, partake in a global process of “becoming-palm.”¹⁰

The fact of complicity brings up the question of purity. As market studies show, palm oil and other vegetable oils and animal fats become significantly more marketable for human consumption following mechanical purification and refining, which requires bleaching earth, which generates the residual by-product that is spent earth. Impurity, in other words, is produced by the pursuit of the pure—a reality violently tainted in the plantation context by its sinister racial undertones.¹¹ Well beyond the matter of spent earth, the pursuit of the pure has long haunted the plantation regime as industrial formation and enduring logic. From selective practices of seed breeding to the plantation vision of homogeneity, order, and discipline, to the exploitation of racialized, enslaved peoples turned fungible bodies, the “ethical” sustainability initiatives of the corporate sector, and, more recently, the experimentation with oil palm ideotypes through engineering biology and genetic sequencing, dreams of purity have long shaped the lifeways of plants, humans, and ecologies, all the while obscuring their violent consequences.¹²

If Earth can burn, become sick, become spent, and even die, then can it ever be healed? In the matter of spent earth, the promise of a remedy remains dubious. In Indonesia and elsewhere, many oil palm and other vegetable oil corporations, often working together with engineering and scientific bodies, are now experimenting with alternative uses for the substance. Technologies developed to regenerate and recycle spent earth, or retrieve its oil contents, include pressurized treatment with carbon dioxide or water and extraction with steam and solvents, with the resultant matter used as a bio-organic fertilizer, feedstock for biodiesel and bio-lubricant conversion, and also in the manufacturing of fertilizers, cement, bricks, tiles, oleochemicals, and industrial chicken feed.

Recycling spent earth is thus not (just) a way of doing right by people and the planet, or what the refinery manager described as the corporate “journey to

sustainability.” It is also, and indeed primarily, driven by the objectives of recuperating sellable oil within spent earth (approximately 20 to 40 percent of its content), avoiding the high costs of safe landfill disposal, and harnessing spent earth to benefit *other* industrial sectors. In this process, a dangerous by-product is transformed into a marketable good. So powerful are these corporate interests that the Indonesian government decided to recategorize spent earth from “hazardous” to “nonhazardous” in April 2021, after years of lobbying by businesses whose proprietors claimed the treatment costs were onerous and who wanted to be allowed to sell the substance to cement producers and the construction industry. As with so many other corporate environmental sustainability initiatives, then, a “techno-fix” mentality remains the dominant drive behind efforts to mitigate and remedy spent earth’s potentially toxic effects in ways that not only leave technocapitalist logics unquestioned but also encourage them.

How might we avoid the paralyzing politics of despair that so often arises as we grapple with loss and the destruction of loss in this era of ecological crisis? In part, by setting the seeming novelty of the present condition against the violent precedents of the past. For all those ongoingly subjected to the haunting force of the plantation and its manifold afterlives, spent e/Earth speaks to the present condition in the future anterior, or in the form of “colonial déjà vu.”¹³ Indeed, from its very inception, spent earths and spent bodies have always been part of the story of colonial racial capitalism.¹⁴ They remain held and are recorded in the soils and selves of the landscape.¹⁵ The violence of the plantation also perdures beyond agro-industry in other uncomfortably familiar institutions—in the whiteness of the carceral system, the justice system, sports, academia, and more.¹⁶ Today, Indigenous people like the Marind of West Papua might literally live in the shadow of the oil palms—but *all* of us, no matter where we call home, live in the shadow of the plantation.¹⁷

It is in this sense that Black ecologies and activism, birthed in opposition to the unthinkable violence of the plantation regime, hold vital lessons for plotting more-than-human futures otherwise.¹⁸ Racialized bodies that resist, nourishing gardens that flourish, fugitive acts that take hold, and insurrectionary activities that subvert racial-capitalist (il)logics remind us that spent earths need not—indeed, must not—be the grounds of our futures.¹⁹ These acts of resistance invite a practice of coalitional thinking and feeling, a coming down to earth that asks what forms of life might gain ground and grow²⁰—even as, in my Marind companions’ words, “the earth has seen all this before.”

So where does this brief foray into the lifeworld of spent e/Earth leave us? In some ways, pretty much exactly where we started—in the conjoined specificity and universality of the earthly commons that sustain us and through which we are always already connected to others. Thinking with spent earth grounds us in the

materiality of toxicity and loss while we also reckon with their incalculable reach, without guarantees of purity or promises of redemption. Such thinking calls for experimentation with storying loss and the destruction of loss—for instance, by juxtaposing contingent events and encounters across sites and subjects without assuming neat scalability, by unearthing the multiple meanings and worlds embedded in the words that we use, or by tracing partial connections between our everyday, material lives and the human and other-than-human beings who pay the price of “progress.”²¹

The material-semiotic figure of spent earth multiplies in its significance as a figure with which to think and feel our way through environmental crisis, a crisis of loss and the destruction of loss.²² Experimenting with words and with matter offers an alternative to grandiose techno-imaginaries of extraplanetary resettlement (like those that inform Elon Musk’s SpaceX project), which perpetuate the language and logic of colonization, and to nihilistic visions of torching the system and the human race (as in the Voluntary Human Extinction Movement), which we know will leave some people scorched and others unscathed. Instead, it requires us to rethink what kinds of earthly matter matters, how the world is in it and it in the world, what life comes to mean when matter can die, and what emergent politics of more-than-human cohabitability might be forged on this wounded and wretched place we call Earth.²³ In an epoch defined by “capitalism’s war on earth,”²⁴ learning to ground ourselves in this way becomes a matter of both care and concern²⁵—even if everything around us suggests we have already well and truly lost the plot.

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Notes

1. Ooi, Badri, and Asma, “Study of the Nature of Oil.” The periodical in which this article appeared is now known as the *Journal of Oil Palm Research*.
2. Chao, “Multispecies Mourning.”
3. Haraway, “Cyborg Manifesto”; Law, “Material Semiotics.”
4. Murphy, “Chemical Infrastructures.”
5. Marder, *Pyropolitics*.

6. Haraway, *When Species Meet*.
7. Puig de la Bellacasa, *Matters of Care*.
8. Hecht, "Interscalar Vehicles."
9. Albrecht et al., "Solastalgia."
10. Gill and Taussig, *Becoming Palm*.
11. Shotwell, *Against Purity*.
12. Rudge and Ehrenstein, "Dreams of Purity."
13. Whyte, "Is It Colonial Déjà Vu?"
14. Koshy et al., *Colonial Racial Capitalism*.
15. Hosbey and Roane, "Totally Different Form of Living"; Martens and Robertson, "How the Soil Remembers."
16. Chao, "Plantation."
17. Chao, *In the Shadow of the Palms*.
18. My figurative use of the word *plot* here is inspired by Sylvia Wynter's analysis of food plots that were cultivated by the enslaved on the periphery of colonial plantations. These plots, Wynter argues, offered forms of literal and spiritual nourishment that were integral to Black continuance and survivance and that operated in counterpoint to the plantation as a space of Black death and dehumanization ("Novel and History"). See also Trouillot, "Culture on the Edges," 203.
19. Roane, "Plotting the Black Commons."
20. Gumbs, "Freedom Seeds," 145.
21. Agard-Jones, "Bodies in the System"; de la Cadena, *Earth Beings*; Tsing, "On Nonscalability."
22. Escobar, *Pluriversal Politics*, 67–83.
23. Gray and Sheikh, "Wretched Earth"; Winter and Schlosberg, "What Matter Matters as a Matter of Justice."
24. Foster, Clark, and York, *Ecological Rift*.
25. Puig de la Bellacasa, *Matters of Care*; Latour, *Down to Earth*.

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