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Forget About It: Purposeful Ignorance (of Waste) in a City Nature Preserve

Nature Now

In September 2014, I sent three dozen college students to explore the Kleinstuck nature preserve, a 48-acre urban wilderness owned by Western Michigan University, one mile from the main campus. Traveling in pairs and trios, they entered the preserve at the edge of a grassy field. There they walked by a welcome sign planted atop a wide, graded slide of crushed stone that links to a narrow, wooded trail. This trail descends about 30 yards to a sandy path 0.7 of a mile long, completely encircling the marsh. A ring of uniform tree stump stools is artfully arranged at the intersection of the entry path and circle paths, 90 feet (in altitude) below the top of the basin.

For their short writing assignment I asked my students to describe what they saw as "nature" and "culture" in the preserve. Unsurprisingly, most found the entry sign, the paths, and the ring of tree stumps to be "culture." Some students also observed a sewer-line access at the center of the tree stump ring, with its distinctive iron standpipe about 30 inches in diameter, covered by a heavy lid—an iconic feature of the urban landscape. Those students who made note of the sewer standpipe found it troubling. They asked: Why put a gathering place next to such an undeniably unpleasant reminder of urban culture? Some also wondered why there was a sewer line in the nature preserve in the first place.

According to my instructions, students turned right at the junction of the descending and circle paths and next came to a short spur on the inside of the trail. This took them 15 yards into the bottom of the preserve, to the watery edge of a wetland. Here they encountered a concrete bench positioned for bird-watching. Observant students could note a number of thin posts submerged in the shallow water, topped with pink plastic ribbons and marked with numbers to indicate depth. Only one student recognized the predominate species of late-season flower as the very attractive but highly invasive purple loosestrife.

Figure 1: Sewer access in Kleinstuck Preserve, summer 2014. Courtesy of the author.

Recalling their journeys later, many students marveled at "nature's beauty" on this part of their short journey. They relished this variegated sanctuary in the midst of a city, with tall trees and thick underbrush and a wetland teeming with sights, scents, and sounds. Several praised a particularly handsome, stately tree with stringy, auburn bark: a southern bald cypress (though no one identified the species nor recognized its improbable appearance in a northern marsh). Some also observed a change in tree cover—from broadleaf hardwoods to a stand of uniform conifers—about a tenth of a mile beyond the concrete bench.

What they next encountered provoked a near universal reaction (as I had anticipated). Leaving the pine stand students expressed shock, dismay, and sometimes outrage when they confronted a brand new, massive public works project: a gravel roadbed several inches deep and wide enough to support enormous utility vehicles, studded with freshly cut tree stumps—still oozing sap—and splashed with fluorescent paint, a kind of hieroglyph for utility work, mapping a subterranean scene that ran below what had been, until recently, a narrow path carved by foot traffic.

Figure 2: Sewer crews in Kleinstuck Preserve, summer 2014. Courtesy of the author.

In their short essays, many students noted the signs, posted by the City of Kalamazoo, which explained this disruption of nature as necessary to repair a badly degraded sewer line that flows underneath the nature preserve. They sniffed with indignation: Who decided to "ruin" nature with this bit of culture? Here are some samples of their reactions:

> "They had created this network of human waste and centered it in the preserve. They had used no restraint in cutting down trees and moving anything they deemed as problematic to their cause."

> "Human intrusions no longer surprise me. They are an expectation since man must leave his mark to show just how much he controls."

> "As we head back home, I can't help but wonder why people couldn't leave even that small part of nature alone. Whose brilliant idea was it to put a sewer under a forest and to make a path out of stone that will never go away (at least in our lifetimes)?"

> "While it is great that the City of Kalamazoo has taken initiative in attempting to prevent sewage leaks into the wetlands, the city should not have had reason to build something potentially hazardous in a protected area in the first place. Western Michigan University considers Kleinstuck protected for a reason, and the city should honor it as such."

Culture in the Past

A week later, I invited Steve Keto, the preserve's manager, to tell my students Kleinstuck's history. He quickly set the record straight for them: "This area is by no means pristine. Most of what you see there is the result of change wrought by human hands."

Indeed. Though the site that became the preserve began in geology, what we have today as "nature" in Kleinstuck derives its character from culture. In fact, *natural* Kleinstuck has been entangled with multiple challenges of both purposefully and somewhat accidentally forgotten waste since its inception as a *cultural* artifact of the industrial age in the late nineteenth century. Since then its problems both *as* waste and *with* waste have shaped its every era of exploitation, abandonment, reverence, and preservation.

Let's start with the geological history. Some 12,000 years ago, retreating glaciers left a chunk of ice buried by layers of outwash (sand and gravel) that accumulated atop it during subsequent cycles of freezing and thawing. This bubble of trapped, solid water melted slowly amidst the mineral mix that would become upland areas around it. (Picture a road pocked with ice-filled potholes: that was the landscape of the upper American Midwest at the end of the last glaciation.)

In the area now known as Kleinstuck, remnant ice made a void in the sandy landscape. Once melted it left a roundish depression that became a kettle pond—a small body of standing surface water. Sealed off from groundwater that flowed beneath a clay layer, this pond received only rainwater. Over time, it largely—but not completely—evaporated. Left in its place was a bog: spongy wet after a rain and brittle dry in seasonal droughts. Its surface mat of highly acidic, partially decayed organic material was short on useable nutrients (nitrogen and oxygen) and thickly covered with carnivorous plants that extracted their nourishment from captive insects rather than the muck beneath

them. Bogs, in the array of North American wetland types, support very limited and specialized plant communities in large part because previous generations of flora and fauna in them have not fully decomposed.

We know little about what the indigenous human population in the area made of the bog, though presumably they had sussed out its prospective utility. Somewhere near Kleinstuck, according to early European and Euro-American settlers' accounts, these native peoples forged iron. Did they power their metal craft by burning carbon-rich peat extracted from Kleinstuck? Was the spot to them a resource?

It certainly was to the landscape's third recorded white landowner, an immigrant from Saxony named Carl Kleinstuck, who set out to drain it in 1885 so that he could rescue it from what he regarded as its otherwise unusable condition. To Kleinstuck, this land in its natural state promised nothing more than a wasted opportunity (a view echoing Enlightenment philosopher John Locke's assertion that men must mix their labor with the land in order to prevent prospective property from wastage).

So Kleinstuck, good German innovator that he was, built a small cog railway from his farmyard on higher ground down to the bog, where his workers sliced wet bricks of peat, to both sell and use for fuel in his varied enterprises (a nursery, a farm, and a wild animal collection among them). And he also began fulfilling his vision of the bog's future: a botanical garden. The concept seems silly now (aren't all gardens botanical?). But in accordance with the fashion at the time, Kleinstuck imagined in the wastes of his mine a living display of the world's prized plant varieties—a kind of zoo for flora. Kleinstuck's plan amounted to landscape recycling: once denuded of bottomland muck and upland tree cover, he would replant the resulting blank slate with an array of imported exotics.

In 1916, the bog, now scraped clean of peat and populated with at least one of Kleinstuck's imported trees (the bald cypress), passed to his widow, Caroline Kleinstuck. Six years later, she gave it to the State of Michigan for "educational purposes." Much has been made, over time, of the good widow Kleinstuck's intentions to protect the land for education. When the beleaguered, underfunded preserve faced vandals and ruin in subsequent decades, its champions would recall Caroline Kleinstuck's bequest that the property be used for education and the advancement of science.

But consider her alternatives at the time: the land that is now the nature preserve may well have looked rather burdensome to Caroline Kleinstuck. At the time it was a sealed bowl: too small, too sloped, and too wet (or dry) for either horticulture or home building. And it probably had already begun yielding an unsightly cover of opportunistic plants unleashed by European immigration (including the very aggressive garlic mustard, Asian bittersweet, and common buckthorn). Even if, as local lore holds, Caroline Kleinstuck saw the excavated bog as beautiful and wanted to honor her dead husband's vision of its transformation, she also no doubt recognized that that fanciful dream would entail both effort and resources. Neither of these would come cheaply to the elderly widow on her own.

In fact, Caroline Kleinstuck might well have needed to off-load the parcel in order to secure the real-estate potential of the rest of her holdings—upland farmland that she and her children had begun selling for residential subdivisions in the previous decade. Maybe no developer wanted to buy a mined-out, cut-over, and possibly smelly crater. Maybe she had no choice but to give it away. Whether she meant to preserve a fragile landscape or jettison a wasteland, in 1922 she gifted it to the state Board of Education, headquartered in distant Lansing, which appears to have put little effort into its due diligence of the maintenance of the property. Instead, it quickly turned the property over, with no budget, to the recently opened local teachers college (Western State Normal School), relieving itself of the burden of management from afar.

In 1927, the college embraced the passionate arborist fervor of the decade, canceling classes in early spring to send all its students on a planting adventure. That day, the school covered a portion of the basin's hillsides with more than 12,000 pine seedlings (none of them varieties native to this corner of Michigan). What prompted this considerable outlay of time and resources? What did the college see in the treeless bowl—an ugly scar? An empty vessel? An opportunity? Whatever it saw, it undertook the pine plantation to purposefully change the preserve's nature, guarding against a new fear of how it might indeed go to waste.

Then two years later this remote, bald depression, now stippled with an incipient forest, found itself the happy resolution to a new waste problem: where to put the sewer line for a recently built subdivision that the widow Kleinstuck had initiated when she sold off the rest of her deceased husband's estate to a developer. Here we encounter another

Figure 3: Arbor Day tree planting, Western Normal School, 1927. Courtesy of Western Michigan University Archives and Regional History Collections.

turn in the larger American cultural practices of which this preserve is a part. When the Kleinstuck family negotiated the sale of its land for residential development, sewer infrastructure neither existed nor was warranted for the future homes that would soon appear there (the first houses of this subdivision had cisterns and water closets). But a decade later, the city required sewerage, both of its residents as well as of itself.

The city's new sewage treatment plant lay miles to the north, downhill, on the Kalamazoo River. To make efficient use of gravity (and to avoid the need for a sewage pumping station) the city appealed to the college for a collector easement around the bog—the low point near what would eventually become neighborhoods of more than 20,000 residents. This the college granted because it got, in return, help in maintaining the property, or so it seemed. Construction soon began on 8-inch and a 15-inch clay pipeline. These now drain 1.8 million gallons of wastewater a day. That's enough, preserve manager Steve Keto calculated recently, to fill the bottom of the preserve one foot deep in sewage within 24 hours, were the pipes to fail.

In time the pine forests took root and the preserve's other slopes became covered with non-native bushes and trees. Some were purposely planted by the college's biology faculty, while others had escaped from neighbors' yards: Norway maples, mulberry, apple

and black cherry trees, Asian bittersweet, and English ivy vines, among others. The scrubby preserve also filled in with trash, reported by the volunteer group of preserve supporters who appealed, year after year, for funds to properly manage the "derelict," neglected property. They lobbied as well for a fence to keep vandals out (which would obstruct the movement of wildlife, of course, although this did not seem to concern the nature preserve's advocates). The college made clear by its routine denial of these requests that it regarded such expenditures a waste of its educational resources.

Nonetheless, in the early 1960s, the college, now a university, did reveal its concern for the preserve. Worried about the bog's lack of drainage (which is, of course, the nature of a bog), it brought in heavy equipment, paid for by a neighbor, to trench a circular moat, which it set off by a hummocky berm made from mounded soil unearthed in the process. This was meant to restore what was imagined to have once been a year-round pond (it did not).

Instead, now, for the first time in millennia, seasonal surface water drained into subsurface groundwater, previously sealed from the bog by thick layers of peat, dense silt, and marl. This dramatic man-made hydrological change prompted unintended man-made water chemistry changes: the acidic bog gave way to more a pH-neutral fen (though most people call the wetland a marsh). When the bog disappeared, so too did whatever was left of its unique communities of plants. In their place grew vegetation common to marshes.

Waste Forgotten, Waste Remembered, On Purpose

In less than a century, a bog became a marsh, treeless hillsides became thickly forested, and city residents forgot the whereabouts of sanitary infrastructure. In reading the landscape of Kleinstuck Preserve, my students (along with everyone else I know, including myself) got the relationship between the waste management service of the preserve and its "natural" service wrong.

One of the key features of the "civilizing process" as Norbert Elias so eloquently put it, is the way we separate ourselves from our own bodily effluent. In doing so, of course, we strive to forget how that waste travels away from us. The Kleinstuck nature preserve will probably never return to what it was in 2014: a tangle of feral urban forest and wetland,

accessible only by foot trails. But it will also never return to the bog that preceded the marsh, nor will the old-growth oak savannah ever encircle its top again.

Instead, for the foreseeable future it will bear a highway of sorts in its center, in order to preserve the City of Kalamazoo's increasingly frail liquid waste management infrastructure and provide access to vital monitoring and maintenance. Hopefully this change will extend the life of nature in the preserve by preventing a ruinous catastrophe: the explosion of a sewer line in the man-made marsh, wasting forever a culturally prized piece of accidental nature.

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