



Abandonment: The Two Sides of Industrial Decay in Mill Creek Ravine

Haeden E. Stewart¹

Accepted: 15 December 2022

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2022

Abstract

Using the example of an industrial site in Edmonton, Alberta, this paper argues that industrial ruins represent instantiations of abstract abandonment, a kind of real abstraction that directly articulates to the logic of capital. Drawing from excavations of the industrial ruins of Mill Creek Ravine, one of the first industrial areas in Edmonton, this paper reveals how sites of abstract abandonment congeal critical histories of both abandonment and its afterlives. The history of these ruins, and the communities that emerged after they were abandoned materialize the failures of capitalist fantasies, as well as the sprouts that grow in its cracks.

Keywords Industrial archaeology · Industrial ruins · Toxicity · Abandonment · Capitalist abstraction · Canada

Capitalism strives to appear coherent and natural even as it is riven by endemic internal contradictions. The contradictions of capital are not simply abstract but are in fact rendered material in the everyday practices of life under capitalism; cracks in the logic of capital that facilitate relations and forms of life that are both completely immanent to capitalist logics, and yet remain in tension with them. The material record of the past 400 years is therefore not simply an archive of the interminable march of capitalism across the globe, it is also a cache of the moments, actions, and relations that do not fit within capital's story of itself. The goal of the archaeologist should be to attend to these cracks, to chronicle fissures in capital's façade and the weeds that thrive within them, in order to better imagine an alternative future. As a politically committed project, this archaeological chronicling is neither coherent nor comprehensive, but partial. It is less interested in a singular revolutionary history than it is in curating a montage of fleeting and ambivalent contingencies, a collage

✉ Haeden E. Stewart
hestewart@umass.edu

¹ Department of Anthropology, University of Massachusetts, Amherst, 202 Machmer Hall, 240 Hicks Way, Amherst, MA 01003, USA

of alternative moments that hold within them a specter of hope. Rescuing these oft-ignored and forgotten histories, the aim of the archaeologist is both to critique the naturalized fantasies of capitalism, as well as to foster the embers that might point to a different world.

Industrial ruins represent one of the most notable materializations of the contradictory nature of capitalist logic. Once the site of cutting-edge technology, state-of-the-art practices, and novel commodities—the beating heart of labor exploitation and progressive fantasies—industrial ruins pockmark the modern landscape with husks of decomposed concrete and mounds of industrial waste. Drawing from four years of excavations of an industrial site in Edmonton, Alberta, in this paper I argue that industrial ruins serve as instantiations of abstract abandonment, places that congeal critical histories of creation-in-negation. The ruins of Mill Creek Ravine, one of the first industrial areas in Edmonton, materialize the two sides of industrial decay: the failures of capitalist fantasies, as well as the strange sprouts that grow in its cracks. Building off this case study, I outline the promise of industrial ruins for a critical archaeological project.

The Critical Promise of Industrial Ruins

The accelerating logic of capital is defined by a never-ending treadmill of obsolescence, the endless production and abandonment of objects, infrastructures, and landscapes that become outmoded. These ruined industrial landscapes have long been identified as congealing the contradictions of capital, highlighting the failed promises of capitalism, and troubling the teleological fantasies of capitalist progress (Boym 2003; Dawdy 2010; Gonzalez-Ruibal 2008; 2019). Walter Benjamin (1977: 178), the scholar most associated with this line of thinking, argued that it was in the cracks and weeds of a ruin that “human history is physically merged into the natural setting.” Manifested in the rotting roofs and disintegrating concrete, pierced and fragmented by roots, the material cycles of decay and growth poke holes in both the physical remains of factories, as well as the promise of wealth and progress they conjure. Critical attention to the abandoned detritus of capital points out the falsity of the capitalist dreams of progress, presencing through absence the “fabulous levels of destruction” produced by capital (Gordillo 2014: 79).

However, highlighting such ruins solely as abstract embodiments of negation – abandonment from the perspective of capital – misses the stakes of the afterlives of industrial ruins. In a modern era of rampant environmental degradation and industrial toxicity, fence-line communities and slow violence (Nixon 2010) – the remaking of the globe via capitalism that Jason Moore (2016) identifies as the Capitalocene – the afterlives of industrial ruins are not just an allegory of abandonment, they are a central facet of capitalist devastation. The remains of industrial production seeps into the soil, into water and bodies, mediating the production and reproduction of new and old forms of life (Murphy 2013). Fungi and bacteria grow on decomposing waste, weeds grow over decaying industrial ruins, and marginalized communities set up camps in and around abandoned buildings. Unique relations and communities emerge in these ruins, not in spite of their abandonment, but because

of it. The communities that develop within these abandoned spaces represent a contradiction within the logic of capital. Often reproducing their lives largely undetermined by the drive for wage labor and surplus value, these communities provide a glimpse of lives lived in the aftermath of capitalist abandonment, focused on salvage and subsistence. At the same time, these post-abandonment forms of life do not take place outside of capital, but rather through it, via the mediating presence of capitalist obsolescence and its toxic residue.

At first blush, this emphasis on the material afterlives of industrial landscapes as revealing the limits of capitalist abstraction seems consistent with the well-worn critique of exchange-value from the perspective of use-value. In this approach, exchange value (the abstract measure of an object's value in relation to the global totality of human labor) is seen as representing the abstract and exploitative logic of capital, while use-value (the practices and activities an object is used for) is lionized as representing the concrete space of everyday life that is transhistorical and resists capitalist alienation (Chakrabarty 2007; Lefebvre 2009; Murthy 2022; Purcell 2013). This framework has been broadly drawn on to show how capitalist ruins, despite appearing abandoned from the vantage-point of capital (exchange value), continue to be used and occupied (use-value) by the homeless, squatters, and other marginalized communities (DeSilvey and Edensor 2012; De Sola-Morales 1995; Papadopoulos 2009). Narrating the histories of capitalist ruins via use-value serves to critically undermine the totalizing vantage point of capital.

However, drawing on a Postonian (1993) approach to Marx's theory of the commodity, I would suggest a different interpretation, one that does not emphasize exchange-value as simply abstract misrecognition, and use-value representing the concrete reality of the world. Rather than seeing the concrete as exceeding the abstract (the "real" of use-value vs the "fake" of exchange-value) I argue that the two are indissolubly linked (use-value and exchange-value as two aspects of a single process). This approach does not undermine the potential of industrial ruins as an archive of capitalist critique, but rather highlights the critical promise of these two sides. To clarify what I mean by this requires a short detour through Marx's theory of the commodity.

Abstract Abandonment

In *Capital: Volume 1*, Marx (1977) provides a critique of political economic thought and its relation to the historical emergence of capitalism. He starts with the fundamental categories of political economic thought (commodity, use-value/exchange-value, concrete labor/abstract labor) and argues that rather than being transhistoric, these concepts reflect relations of social interdependence unique to capitalism. In a world organized by capital, the ability to live and reproduce your way of life (both on individual and collective scales) is necessarily dependent upon anonymous and interdependent relations with complete strangers. The practices that constitute these social ties (most importantly labor) are simultaneously concrete (unique physical acts in the real world) as well as abstract (defined in relation to the global nature of labor as the creator of value). In a society where the purpose of labor is to access the

products of other people's labor, every act of labor is simultaneously a concrete as well as an abstract act (Marx 1977: 135). When a worker is working in a factory for a wage, they are at once performing a specific particular form of labor (e.g., riveting) while at the same time performing labor in its abstract form, an activity valued in relation to the global totality of abstract human labor and the global capacity of human production. They are not performing riveting (concrete labor) as a type or generalization of abstract labor, they are performing abstract labor itself, through an activity that is both concrete and abstract.

Far from being a generalization of labor, "abstract labor" is a structuring form of social interdependence under capitalism, what Postone (1993) would call a "real abstraction." This is not to suggest that conceptual abstraction (abstraction as generalization) no longer occurs in capitalism, but rather that it is fundamentally distinct from the kind of real abstractions that structure social relations (abstraction as social practice). Contrary to much traditional Marxism (Adorno and Horkheimer 1997; Kautsky 1994; Lukacs 1971) Marx was not providing a critique of how the abstract relations that define capitalist exchange veil the "real" concrete relations of capitalist production (Postone 1993). The concrete (use-value, concrete labor, production, base, etc.) is not opposed to the abstract (exchange-value, abstract labor, circulation, superstructure etc.), one as transhistoric and real, the other as historic and false. Rather, both are two aspects of the same process, producing and reproducing each other according to the accelerating logic of capitalist accumulation. Studying the concrete act of labor as a way to get at the "truth" behind abstract labor (or studying use-value as a way to get at the truth behind exchange-value), is a fundamental misunderstanding of these real abstractions.

Drawing from this Postonian approach, I suggest that under capitalism, abandonment can be understood as a real abstraction, a practice of social interdependence that is simultaneously concrete and abstract. As an industrial landscape is abandoned the last dregs of value are squeezed out of its raw materials, any workable parts are sold, and buildings are stripped. This concrete act of abandonment is simultaneously an abstract social process of obsolescence. It occurs conditioned and defined in relation to the global acceleration of capital, as one set of industrial practices is superseded by one more efficient at congealing labor. This means that each act of abandonment, and each abandoned landscape is not just a particular example of a more general notion of capitalist abandonment, it is an instantiation of abandonment by capital in the abstract sense.

This identification of abandonment as a real abstraction necessitates a new understanding of the critical potential congealed within an abandoned industrial landscape. As an instantiation of abstract abandonment, the history of each abandoned industrial landscape is defined by both its obsolescence from the perspective of capital as well as the ongoing relations of the humans, non-humans, and things that were left behind (ruins, squatters, weeds, etc.). Any industrial ruin is not simply a site of capitalist negation, a Benjaminian allegory for the limit of capitalist fantasies. It is a landscape with a particular afterlife. At the same time, the use of this abandoned landscape does not negate its appearance as an abandoned space. Nor do these ruins reflect a space outside of capital that allows its occupants to completely escape the interdependencies of capitalism. Quite the opposite, the particular afterlives

of industrial ruins are intimately entangled with the logic of capital in its role as a space of abandonment. First, the afterlives of the landscape (the kinds of activities and forms of life this landscape proliferates) are mediated by its abstract appearance as an abandoned space (worthless from the perspective of production, its utility is tied to its apparent uselessness and existence on the fringes). Second, the concrete material remains of detritus that industry has left behind (the seeping toxic harms and salvageable remains: industrial waste as chemical infrastructure) mediates the production and reproduction of life in the landscape. This is both harmful and productive; some forms of life suffer, others thrive. These two forms of mediation (one emerging from the concrete material remains, the other emerging from the abstract appearance) are both overlapping and in tension. The toxic mass of industrial waste both fosters life and distributes harms, ultimately impeding a landscape's return to profitability. Growth emerges at the same time as negation.

In the rest of this paper, I outline how archaeology can attend to the interplay of obsolescence and growth, abstract and concrete, through the example of industrial ruins in Mill Creek Ravine: an early twentieth-century meatpacking factory called Vogel's Meats and a nearby shantytown that was called Ross Acreage. Rather than simply focusing on abandonment to critique growth, or "use" to critique abandonment, the narratives congealed in the ruins of Mill Creek Ravine show how the two are simultaneously entangled. This emphasis on growth amidst negation, while highlighting the critical potential of both, is what I term the two sides of industrial decay.

The Industrialization of Mill Creek Ravine

Mill Creek's industrial history starts with the arrival of the railroad. In 1902, the Edmonton, Yukon, and Pacific Railroad (EY&P) was completed. The line, built through the steep Mill Creek Ravine, linked Edmonton to the rest of Canada for the first time. A deep and heavily forested ravine with a fast creek running through it, Mill Creek Ravine cuts north before opening up into the massive North Saskatchewan River valley, and downtown Edmonton. Spurred by the arrival of the railroad, along with the allure of cheap land and future opportunities, settlers rushed into the city. Between 1902 and 1914, Edmonton's population skyrocketed from 3,000 to 72,500. Along with settlers, the railway also brought new possibilities for economic and industrial development: capital flowed into Edmonton, driven by fantasies of Edmonton as the "New Chicago." Local businessmen and newly arrived settlers alike began sinking vast sums into industrial projects that took advantage of Edmonton's rich natural resources and new role as the transportation hub of central Alberta. Rich in coal, and the center of a fecund agricultural region, Edmonton emerged as the major manufacturing and processing heart of central Alberta. In particular, these industries clustered along the EY&P railroad as it ran through Mill Creek Ravine. The lumber and coal resources in the ravine, along with the transportation capabilities of the new railroad, made it the most attractive industrial zone in the province.

Industrial meatpacking plants, coal mines, and lumber mills were set up to process and commoditize local resources so they could be shipped out to the established markets in eastern Canada. As ranching flourished in central Alberta, meatpacking became

one of the most important industries in Edmonton and one of the premier sources of wage labor for the residents of Edmonton (Gilpin 1978). Easily accessible to the farms of southern Edmonton as well as the rail line, meatpacking plants congregated in Mill Creek Ravine. By 1908 there were four plants along the creek bank, as well as a brick-making factory and a large coal mine. Drawn by the promise of wages, incoming settlers built their homes in and around the ravine. In particular, the poorest among them congregated at the northern end of the ravine, where unclear zoning regulations spurred semi-legal squatting by laborers eager to work in the packing plants and the mine. Living in canvas tents and working in the packing plants, these itinerant laborers clustered into a community known as Ross Acreage, eventually replacing their tents with permanent shacks and cottages.

More than just a source of jobs, meatpacking was a symbol of Edmonton's fantasized future. At the turn of the century, the meatpacking industry was the embodiment of the promise of modernity and industrial-fueled progress. New ideas of scientific management, efficient flow-through, the economization of byproducts, and economies of scale were combined with technological breakthroughs in refrigeration and transportation to make the massive meatpacking plants in Chicago the epitome of modern progress (Pacyga 2015). Beyond meat for the table, the industry began developing and selling new commodities made of animal byproducts (e.g., soap, glue, fertilizer, margarine, horn combs, buttons, etc.), ostensibly leaving nothing to waste and even designing profit-margins specifically around the sale of non-meat byproducts to fellow industrialists for further transformation into mass produced commodities. No less than Henry Ford got his idea for the automobile assembly line from an inspiring visit to the great *disassembly* lines of the packing plants in Chicago (Pacyga 2015).

Fantasies of progress and modernity were materialized in the gleaming metal, modern refrigeration, and whirring conveyor belts of the newly built packing plants lining Mill Creek Ravine. Vogel's Meats especially suited the fantasy of modernity that Edmonton strove to embody. Opened in 1902, Vogel's Meats consisted of three large cutting-edge buildings, organized in the flow-through style that facilitated the disassembly of pigs and cows. Outside, the packing plant was surrounded by a series of massive pens for cows and pigs. Vogel's was particularly notable for its purchase of expensive equipment, including a state-of-the-art German-made Linde ammonia refrigeration system purchased in Chicago (Anonymous 1903). With its modern equipment and techniques, Vogel's Meats was highlighted as a "credit to the district" (Anonymous 1902a), vital to the "development of the town and country" (Anonymous 1902b) and "one of our most important and growing industries" (Anonymous 1902c). The construction of Vogel's Meats—a packing plant that could process 200 animals a day with a sophisticated modern refrigeration unit shipped in from Chicago—was not just the arrival of the perfect tool for commoditization of the prairies, it was also the material embodiment of modernity.

Abandonment

Despite all the heady predictions that it would be one of Edmonton's most important businesses, Vogel's did not last even 12 years in business. By 1914, Vogel's Meats was closed, and the city-wide economic boom that had fueled its rise imploded. Fears over World War I, combined with a collapse in real estate prices led to a spectacular flight of people and capital. The population boom of the 1900s had caused the city to expand across a massive area, with some city planners expecting an incoming population larger than that of Toronto (370,000 in 1911) or Montreal (533,000 in 1911) (Anonymous 1918). In 1917, Edmonton increasingly looked like a hollowed-out shell of its former promise. The population had declined by 30% and 50,000 people lived in an area of 56 mi² (14.5 ha), designed for a population in the hundreds of thousands. Mirroring a recession across Alberta that followed the end of World War I, Edmonton settled into a long economic decline.

This sharp downturn led to the end of cheap capital, falling profits, and the decline of industrial production across the city. By 1920, most industrial activity ceased in Mill Creek Ravine and the meatpacking plants were shuttered and deserted. As the mines and packing plants closed, unemployed laborers were forced to abandon Ross Acreage, seeking jobs in other parts of the city. By 1928, the Twin City Coal mine closed, and the EY&P railroad was relegated to a minor industrial spur that was hardly ever used. As industry abandoned Mill Creek Ravine, they also abandoned the ravine and the material remains their businesses left behind: derelict packing plants, massive piles of coal overburden, and a decades' worth of organic refuse (bones, blood, hair, and sinews) the meatpacking plants had dumped in the ravine. Despite this abandonment – indeed because of it – Mill Creek Ravine continued to be used and occupied. Impoverished farmers moved into the derelict remains of Ross Acreage, weeds and trees grew over the old stockyards, and domestic waste was dumped into the ravine from the neighborhoods up above in an ad hoc fashion. Each of these uses were contingent upon its appearance as a space that was abandoned and “useless” from the perspective of capital.

Today this ravine is a large urban park nestled in the heart of Edmonton, an area that since the 1970s has been protected as a natural getaway in the midst of a concrete jungle. The main users of the park are joggers, dog-walkers, and dozens of homeless people who camp in the woods lining the ravine. Overgrown with thick brush, the ravine is still littered with the residue of its industrial past. The remains of Vogel's Meats are barely visible: bones erode out of the bank, concrete foundations hide under shrubs and in copses, and pulverized brick fragments are dispersed across the surface. Traces of Ross Acreage are harder to find, buried deep beneath decades of ad hoc dumping of domestic waste. The remains of Vogel's Meats and Ross Acreage were recovered and identified as a result of three years of archaeological survey and excavation in Mill Creek Ravine. The goal of this research was not simply to reconstruct Mill Creek Ravine's early industrialization, it was to foster the critical histories of both negation and growth that flourish within these decomposing remains. These remains do not just speak to the history of Edmonton's early industrialization, they speak to the long afterlives of the ravine as a landscape of

abstract abandonment, testifying to a well-known history of decline and abandonment, as well as a lesser-known history of use and growth in a landscape that appeared abandoned.

An Archive of Abandonment

The first story of abstract abandonment is abandonment. Eroded and covered in grass, the industrial ruins of Mill Creek Ravine serve as an archive of their obsolescence, a history that is both general and particular. The old concrete killing floors serve as an instantiation of capital's endemic drive for abandonment and embody the flaws in capitalist dreams of progress, efficiency, and production. If you look carefully, "we begin to recognize the monuments of the bourgeoisie as ruins even before they have crumbled" (Benjamin and Tiedemann 1999: 13). On a smaller scale, the remains of Vogel's Meats serve as a particular archive of the flaws of industrial fantasies in the 1900s in Edmonton. As the most heralded meatpacking plant in the city, in an industry that embodied modern efficiency, the remains of Vogel's Meats preserve the fundamental flaws in the optimism of the era. If the hallmarks of industrial meatpacking in the 1900s were efficiency and byproduct use, then the limitations of this system are to be found in its waste. Excavations of Vogel's garbage pit, located on the banks of Mill Creek, serve as a record of the waste that Vogel's Meats produced during its 12-year production history (1902–14): bones piled upon bones, shotgun shells mixed with bottle glass, and rusted metal barrel rings jumbled with hair matter. Most importantly it points to objects that would not have been waste had the plant been as efficient and modern as it claimed.

Faunal remains recovered from the garbage pit at Vogel's provide a record of animals slaughtered at the plant, as well as the broader profile of livestock present in Edmonton and its hinterlands. In the garbage pit, two distinct strata of meatpacking waste were identified. The interface between the two strata, marked by a clear layer of charcoal, likely dates to 1908, when part of the plant burned down and had to be rebuilt. In the earlier stratum, 17 pig bones, 109 sheep bones, and 198 cow bones were recovered with an MNI of 11 cows, 3 pigs, and 9 sheep. The mix of cow, pig, and sheep in the earlier stratum reflect a diverse farming economy in the Edmonton region, with a considerable mix of different types of farms and livestock. This largely corroborated early advertisements of Vogel's which highlighted their sale of "beef, pork, mutton and lamb" (Fig. 1). According to news reports which breathlessly covered the design and construction of the new meatpacking plant, it was designed for the slaughtering of pigs (Anonymous 1902a). At the same time, faunal remains suggest pig was the least common of these three animals to be slaughtered and sold. Instead, Vogel's processed mostly sheep and immature cows. The lack of pig remains, coupled with the common advertisement in the early years of Vogel's operation (1902–05) signaling the need for large pigs, suggests an insufficient local supply of pigs for the packing plant. This lack of pigs was caused by an increasing consolidation of farmland by wealthy cattle ranchers during this period, outcompeting small pig farmers in



Fig. 1 Early Vogel's Advertisement. Note the high prices which were paid for hogs, the availability which were always an issue for the packing plant. Image courtesy of Peels Prairie Province Online Collection (Anonymous 1902a)

Central Alberta (Evans 2004: 146). In the later strata, 98% of identifiable bones were bovine, with an MNI of 22 cows (half of them juvenile), two pigs, and one sheep. Despite being originally designed for pig processing, in its last six years of production Vogel's Meats turned exclusively to cow processing.

The material remains of the garbage pit speak to the basic inefficiencies of Vogel's plant. Faunal data suggest the plant turned to sheep and cow when it was not possible to bring in adequate numbers of pigs, resulting in serious inefficiencies. These inefficiencies are further indexed by 236 bullet cartridges recovered from the garbage pit, alongside slaughtering and processing equipment. While it is unclear whether this was the primary or secondary method of slaughter, the quantity of cartridges suggests that the plant was frequently using firearms as part of the slaughtering process. This tactic was both expensive and disruptive; it was considered to be an extremely dangerous and inefficient method by contemporary meatpacking industry standards, due to the high cost of ammunition and the potential of gunshots to spook the animals (MacLachlan 2001).

Slaughtering animals with firearms suggests inefficiencies in production and the massive piles of waste in the garbage pit speak to inefficiencies in processing. According to the business model outlined by Chicago businessmen such as Philip Armour and Gustavas Swift (and quickly adopted by packing plants across the continent), most of the profits gleaned from the packing process were from selling animal byproducts (i.e., fat, bone, hair, and hides) (Pacyga 2015). The remains of Vogel's waste pit suggests that this business model did not work as it was supposed to in Mill Creek Ravine. Over 36 kg of bones, more than 6,000 by count from at least 86 identifiable individual animals, were recovered from only two square meters of Vogel's garbage dump area, which, according to shovel test pit data, extended somewhere between 100–200 m². On top of the thick bed of bones, the top of the waste pit was covered in a foot thick layer of coal slag and burnt bone fragments. The presence of so many wasted bones, points to the

reality that Vogel's did not have access to a secondary market to sell their byproducts. Instead, the company was forced to throw out the waste into the creek, and in later years, burn their bones and offal (Anonymous 1908). In a more developed market, all would have been easily sold: bone for the production of fertilizer and bone-meal, hooves for the production of glue, and offal to a rendering plant.

On the surface, Vogel's presented as the embodiment of efficient industrialization and associated fantasies of modernity. When it opened, it wowed the local population by importing the latest technologies and equipment. However, in spite of the promise of modern efficiency, Vogel's was marred by inefficient production, and material inefficiencies were discarded as waste rather than made profitable. This waste, still scattered across the ravine, continues to pollute the soil and to define the local ecology. Both as a set of ruins and as an archive of production, the remains of Vogel's Meats speak to the cracks in the particular myth of meatpacking modernization in Edmonton, as well as the broader falsity of capitalist progress. The remains of Vogel's also speak to the bust of the Edmonton frontier boom, and the harsh reality of capitalism's trademark boom and bust cycles.

Archives of Growth

Industrial ruins do not simply record the story of their own demise or embody the destruction of capital, they also serve as records of the afterlife of their abandonment. The second story of abstract abandonment is growth. Not growth in the sense of pure positivity, but growth in the sense that the dereliction and decay of industrial spaces brings forth new ways of life. After they were abandoned from the perspective of capital, industrial landscapes continue to be lived in and used as abandoned spaces. After the industrial ruins and toxic waste of Mill Creek Ravine were abandoned in the 1920s, they began to mediate the emergence of new communities, both human and non-human.

Forsaken by industry and capital, Mill Creek Ravine began its afterlife as an abandoned industrial landscape in 1928. Edmonton's economic malaise deepened, eventually culminating in the crippling of the Canadian Prairie economy during the Great Depression. High debt and a decade-long drought ruined small farms, pushing destitute farmers and their families into cities like Edmonton. Unable to find work or afford rent, these families settled in the least desirable areas of the city: namely, the steep ravine valleys abandoned by industry, already overgrown with trees and brush and littered with industrial waste and trash. By the time of the 1929 crash, hundreds of impoverished farming families had flocked to Mill Creek Ravine resettling the overgrown plots of the prior residents of Ross Acreage. The reproduction of these communities was mediated both by the persistent remains of industry as well as the appearance of Mill Creek Ravine as an abandoned space. Used by a succession of marginalized families and non-human ecologies, Mill Creek Ravine became useful not in spite of its abandonment, but because of it.

Archaeological excavations at Ross Acreage uncovered the remains of both its original occupation as well as its second occupation as an abandoned space. The first occupation revealed the daily lives of Ross Acreage occupants between the

1900-20s, the period of time in which the residents of Ross Acreage were drawn to the area to work in the packing plants and mines that lined Mill Creek Ravine. Wages from the local coal mines and packing plants, while low, provided cash to the inhabitants of Ross Acreage allowing them to purchase canned food, building materials, coal and packaged meat. Architecturally, this period was defined by small wooden shacks set up along the ravine banks.

The second occupation took place between 1929–40, following the onset of the Great Depression, when impoverished farmers flocked into Edmonton. Excavations from the second occupation reveal how, after industry abandoned the ravine, incoming displaced farmers relied almost exclusively on the resources of Mill Creek Ravine for their subsistence. The extensive industrial ruins and abandoned shacks provided salvage opportunities to those with no resources to purchase building materials. The thick, overgrown forests and eroding mines provided opportunities for hunting and collecting coal and wood. Despite living in the center of one of Western Canada's largest cities, the Depression-era residents of Ross Acreage survived almost entirely outside of the market system. Lacking access to cash or commodities, this second wave of residents relied on their own skills and ingenuity to get by.

Settling near the remains of an abandoned shack, the Swiss-American Bruner family built their own home out of a mix of wood, brick, tarpaper salvaged from surrounding ruined shacks, as well as bricks and concrete rubble from the industrial ruins lining the creek. Firebricks, scavenged from an industrial furnace, were used to buffer the heat of their coal stove. Using fireworks and crowbars, slabs of concrete and brick were removed from nearby factory buildings and used to shore up the dwellings. Residents relied upon the ruins of Mill Creek Ravine for building materials and relied upon the resources of the ravine for their food, heat, and water.

Faunal remains from this period show a clear reliance on locally hunted game. Half of all bones identified came from small wild game that would have also been living in the ravine: pike, hare, muskrat, squirrel, and rabbit. The presence of significant numbers of 0.22LR small game cartridges and a small leg trap further testifies to the emergence of hunting as central for daily sustenance. Prior to this occupation, residents of Ross Acreage relied upon processed industrial meat for the vast majority of their subsistence. Along with an increase in hunting, evidence of terracotta gardening pots, garden compost, and two articulated chicken skeletons suggest that residents supplemented their diets through gardening and raising chickens. The lack of purchased food, the importance of locally raised food, and the rise of hunting all point to the lack of cash wages in the community, and the necessity of relying on the ravine's resources for sustenance.

With the closing down of most local mines and the inability of occupants to afford or access natural gas, residents scoured the local environment for free heating sources. In an effort to stay warm through the bitter winters of northern Alberta, the occupants of Ross Acreage and other impoverished communities in Edmonton frequently gathered coal from the riverbanks that was in reality barely more than creek clay. Excavation of the Bruner's shack show that the family dug an ad hoc mining shaft into the creek bank behind their home, following a coal vein. The ad hoc nature of digging for coal throughout the ravine is reinforced by archaeological evidence of

extremely poor quality burnt coal that families like the Bruners left behind. Lacking the resources to purchase coal, the community also lacked other local amenities. As a squatting community, Ross Acreage lacked governmental recognition that would have allowed them access to city water services. Instead, creek water was used for most domestic activities (cleaning, cooking, and gardening).

On one hand, this shift toward subsistence hunting, gardening, and relying on the ravine for building materials, heat, and water is a clear material record of the poverty and hardship experienced by residents during the Great Depression. It also reflects the flexibility and ingenuity of resilient residents who by necessity had to build their lives outside of a labor market that itself was showing signs of collapse, and which had already personally failed them. For over a decade, amid the harshest period of one of the hardest hit areas of the global depression, the residents of Ross Acreage managed to reproduce their lives largely outside of the market system, without access to any municipal support or amenities.

However, there is a third factor that defined life in Ross Acreage and other communities like it. When industry abandoned Mill Creek Ravine, the coal mining and meatpacking companies did not just leave behind piles of bricks, concrete, and metal; they also left decades of toxic waste that leached across the ravine continuously over years and even decades. Prior to their abandonment, the meatpacking plants pumped blood and effluent into the creek, while the coal mines deposited their overburden and tailings throughout the ravine. As destitute farming families resettled Mill Creek Ravine, they settled in a landscape that had already been caked in layers of heavy metals from coal mining. Analysis of soil under one Depression-era shanty excavated along the creek floodplain, showed elevated levels of heavy metals associated with coal mining – specifically arsenic, beryllium, cadmium, lead, nickel, and antimony. Even after 100 years, contemporary concentrations of arsenic and beryllium remain significantly elevated. According to contemporary World Health Organization standards, arsenic in the silt exceeds the “maximum tolerable soil concentration” for garden soil while the levels of beryllium in the silt are eight times greater than the tolerable soil concentration (Moterjemi 2014: 112). While coal mining had abandoned the ravine ten years earlier, the toxic heavy metals of coal mining remained dispersed throughout the soil and the gardens of the residents of Ross Acreage. As residents began to rely more heavily on gardening for their subsistence throughout the Great Depression, they were exposed to those heavy metals through the fruits and vegetables cultivated and consumed in the ravine.

In Ross Acreage, we get a snapshot of a densely packed urban community that lived off the grid, in and around industrial ruins. Salvaging, scrounging, hunting, and gardening in their backyards, the residents of Ross Acreage used their own ingenuity to survive when the boom-and-bust cycle of capitalism left them destitute. In many cases, the result of this was incredibly productive: new shanties and shacks were built with wood, brick, and concrete salvaged from the ruined industrial buildings that lined the creek. Instead of buying meat, residents of Ross Acreage hunted, trapped, and fished for protein and relied on their gardens for fruits and vegetables. As they subsisted, these families also worked together and built a community in

the face of complete disregard and negligence from local utilities and government. Indeed, their community was only possible in the *absence* of these forces. At the same time, the very skills that allowed them to live off the grid, resulted in their exposure to the heavy metals and decomposing industrial waste that saturated the landscape. The ability of the residents of Ross Acreage to rely on Mill Creek Ravine for their food, water, heat, and construction material did not allow them to escape the effects of the industrialized economy but instead forced them to engage with the toxic aftereffects of industrial capitalism on an intimate daily basis.

Conclusion

For Mill Creek Ravine and many other post-industrial landscapes, growing weeds and squatters' encampments are the flip side to abandonment. These are the two entangled stories of abstract abandonment. The history of Mill Creek clarifies the necessary and historically particular relation between afterlives and abandonment in a world where the reproduction of life itself is mediated by both capitalist production and waste. Both sides of abstract abandonment reflect the entanglement of concrete practices and abstract logics that lie at the core of capitalism. Abandonment is at once abstract, an inevitable feature of the treadmill of capitalist obsolescence, as well as specific to local history and place. Growth is at once concrete, a particular history of ingenuity and resilience, while always mediated by the persistence of capitalist waste and the image of abandonment itself. The two sides of abstract abandonment are indissolubly linked.

At the same time, attending to these entanglements and tracking the mediating force of capital into the soil and bloodstream does not acquiesce to a vision of the totalizing power of capital and a world in which there is no alternative to capitalism. Following these entanglements in the remains of industrial ruins, rather than searching solely for critical histories from the vantage point of use-value, reveals some of the fundamental contradictions at the heart of capitalism: the failures that trail fantasies of progress, the abandonments that haunt projects of use, the histories of exposure and toxicity that mark landscapes designed to aid in the betterment of humankind. At its most hopeful, the relations and strategies exhibited by the community of Ross Acreage might even serve as an image for life that is resilient in the face of the toxic aftereffects of capitalist destruction, and as such it represents a gesture toward life and society in not just a post-industrial landscape, but a post-capitalist world. In landscapes of abstract abandonment, we see a glimpse of a world that is being made unlivable by capitalism, while at the same time seeing flashes of horror and hope in the harms and relations that emerge out of this obsolescence.

In the 1970s, the overgrown shacks and industrial ruins of Mill Creek Ravine were reimagined and remade as a municipal park. No longer abandoned, the ravine became the target for a new kind of occupation, new funds, and new regulations. Today Mill Creek Ravine is a large urban park nestled at the heart of Edmonton, a city of over a million people, the capital of Alberta, and a hub for the oil-sands

industry. One hundred and twenty years after the arrival of the railroad, the ravine's promise of industrial progress has been replaced with a new kind of fantasy, that of nature. Dog walkers, cyclists, and joggers use the space as an escape from the city, a slice of nature that allows you to forget the hustle and bustle of Edmonton's oil economy. Under this image of nature lies a more sobering reality. Amid the trees, homeless residents set up camp. In the soil, lead and cadmium continue to leach out from the old industrial waste, storm drains continue to pump e-coli into the creek-water. The afterlives of industrial decay continue, as does the accelerating pace of capitalist accumulation.

Data Availability The author confirms that the data supporting the findings of this study are available within the article and its supplementary materials.

Declarations

Conflict of Interest The author declares that there is no conflict of interest.

References

- Adorno, T. and Horkheimer, M. (1997). *Dialectic of Enlightenment*. Stanford University Press, Palo Alto.
- Anonymous. (1902a). The Vogel Meat and Packing Co. *Edmonton Bulletin*. Edmonton, AB., December 12, p. 4. <www.newspapers.com>. Accessed 6 June 2022.
- Anonymous. (1902b). Annual Board of Trade Meeting. *Edmonton Bulletin*. Edmonton, AB., February 28, p. 5. <www.peel.library.ualberta.ca>. Accessed 6 June 2022.
- Anonymous. (1902c). Advertisement for Vogel Meat and Packing Co. *Edmonton Bulletin*. Edmonton, AB., December 19, p. 9. <www.peel.library.ualberta.ca>. Accessed 6 June 2022.
- Anonymous. (1903). Locals. *Strathcona Plaindealer*. Edmonton, AB., July 10, p. 5. <www.peel.library.ualberta.ca>. Accessed 4 Dec 2018.
- Anonymous. (1908). More Facts About Alberta Hogs. *Edmonton Journal*. Edmonton, AB., p. 1. <www.newspapers.com>. Accessed 6 June 2022.
- Anonymous.(1918). Edmonton, A Garden City. *Edmonton Bulletin*. Edmonton, AB., p. 1. <www.peel.library.ualberta.ca>, Accessed June 6, 2022.
- Benjamin, W. (1977). *The Origin of German Tragic Drama*. New Left Books, London.
- Benjamin, W. and Tiedemann, R. (1999). *The Arcades Project*. Belknap, Cambridge MA.
- Boym, S. (2003). Tatlin, or, Ruinophilia. *Cabinet* 28. <<https://www.cabinetmagazine.org/issues/28/boym2.php>>. Accessed 6 June 2022.
- Chakrabarty, D. (2007). *Provincializing Europe*. Princeton University Press, Princeton, NJ.
- Dawdy, S. (2010). Clockpunk anthropology and the ruins of modernity. *Current Anthropology* 52(6): 761-793.
- DeSilvey, C. and Edensor, T. (2012). Reckoning with ruins. *Human Geography* 37(4): 465-485.
- Evans, S. (2004). *The Bar U and Canadian Ranching History*. University of Calgary Press, Calgary.
- Gilpin, J. F. (1978). *The City of Strathcona, 1891-1912: "We see just ahead the glory of the sun in His might"*. Master's thesis. Department of History, University of Alberta, Edmonton.
- Gonzalez-Ruibal, A. (2008). Time to destroy: an archaeology of supermodernity. *Current Anthropology* 49:247-279.
- Gonzalez-Ruibal, A. (2019). *An Archaeology of the Contemporary Era*. Routledge, London.
- Gordillo, G. (2014). *Rubble: The Afterlife of Destruction*. Duke University Press, Durham, NC.
- Kautsky, K. (1994). *Marxism, Revolution, and Democracy*. Transaction, London.
- Lefebvre, H. (2009). *State, Space, World: Selected Essays*. Brenner, N. and Elden, S. (trans.), Moore, G. and Brenner, N. (eds.). University of Minnesota Press, Minneapolis, MN.
- Lukacs, G. (1971). *History of Class Consciousness*. MIT Press, Cambridge.

- MacLachlan, I. (2001). *Kill and Chill: Restructuring Canada's Beef Commodity Chain*. University of Toronto Press, Toronto.
- Marx, K. (1977). *Capital: A Critique of Political Economy*. Vintage, London.
- Moore, J. (2016). The Rise of Cheap Nature. In Moore, J. (ed.), *Anthropocene or Capitalocene?: Nature, history and the Crisis of Capitalism*. PM Press, Oakland, pp. 78–116.
- De Sola-Morales, I. (1995). Terrain vague. In Davidson, C. (ed.), *AnyPlace*. MIT Press, Cambridge, MA, pp. 118–123.
- Moterjemi, Y. (2014). *Encyclopaedia of Food Safety*. Elsevier, Amsterdam.
- Murphy, M. (2013). Chemical infrastructures of the St. Clair River. In Boudia, S. and Jas, N. (eds.), *Toxicants, Health, and Regulation since 1945*. Routledge, London, pp. 99–113.
- Murthy, V. 2022. *The Politics of Time in China and Japan*. London, Routledge.
- Nixon, R. (2010). *Slow Violence and the Environmentalism of the Poor*. Harvard University Press, Cambridge, MA.
- Pacyga, D. (2015). *Slaughterhouse: Chicago's Union Stockyard and the World It Made*. University of Chicago Press, Chicago.
- Papadopoulos D. (2009). The hidden qualities of dereliction. MPhil thesis, Open University. <<https://doi.org/10.21954/ou.ro.0001004a>>.
- Postone, M. (1993). *Time, Labor, and Social Domination*. Cambridge University Press, Cambridge.
- Purcell, M. (2013). Henri Lefebvre and the right to the city. *Journal of Urban Affairs* 36(1):141–154.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

Terms and Conditions

Springer Nature journal content, brought to you courtesy of Springer Nature Customer Service Center GmbH (“Springer Nature”).

Springer Nature supports a reasonable amount of sharing of research papers by authors, subscribers and authorised users (“Users”), for small-scale personal, non-commercial use provided that all copyright, trade and service marks and other proprietary notices are maintained. By accessing, sharing, receiving or otherwise using the Springer Nature journal content you agree to these terms of use (“Terms”). For these purposes, Springer Nature considers academic use (by researchers and students) to be non-commercial.

These Terms are supplementary and will apply in addition to any applicable website terms and conditions, a relevant site licence or a personal subscription. These Terms will prevail over any conflict or ambiguity with regards to the relevant terms, a site licence or a personal subscription (to the extent of the conflict or ambiguity only). For Creative Commons-licensed articles, the terms of the Creative Commons license used will apply.

We collect and use personal data to provide access to the Springer Nature journal content. We may also use these personal data internally within ResearchGate and Springer Nature and as agreed share it, in an anonymised way, for purposes of tracking, analysis and reporting. We will not otherwise disclose your personal data outside the ResearchGate or the Springer Nature group of companies unless we have your permission as detailed in the Privacy Policy.

While Users may use the Springer Nature journal content for small scale, personal non-commercial use, it is important to note that Users may not:

1. use such content for the purpose of providing other users with access on a regular or large scale basis or as a means to circumvent access control;
2. use such content where to do so would be considered a criminal or statutory offence in any jurisdiction, or gives rise to civil liability, or is otherwise unlawful;
3. falsely or misleadingly imply or suggest endorsement, approval, sponsorship, or association unless explicitly agreed to by Springer Nature in writing;
4. use bots or other automated methods to access the content or redirect messages
5. override any security feature or exclusionary protocol; or
6. share the content in order to create substitute for Springer Nature products or services or a systematic database of Springer Nature journal content.

In line with the restriction against commercial use, Springer Nature does not permit the creation of a product or service that creates revenue, royalties, rent or income from our content or its inclusion as part of a paid for service or for other commercial gain. Springer Nature journal content cannot be used for inter-library loans and librarians may not upload Springer Nature journal content on a large scale into their, or any other, institutional repository.

These terms of use are reviewed regularly and may be amended at any time. Springer Nature is not obligated to publish any information or content on this website and may remove it or features or functionality at our sole discretion, at any time with or without notice. Springer Nature may revoke this licence to you at any time and remove access to any copies of the Springer Nature journal content which have been saved.

To the fullest extent permitted by law, Springer Nature makes no warranties, representations or guarantees to Users, either express or implied with respect to the Springer nature journal content and all parties disclaim and waive any implied warranties or warranties imposed by law, including merchantability or fitness for any particular purpose.

Please note that these rights do not automatically extend to content, data or other material published by Springer Nature that may be licensed from third parties.

If you would like to use or distribute our Springer Nature journal content to a wider audience or on a regular basis or in any other manner not expressly permitted by these Terms, please contact Springer Nature at

onlineservice@springernature.com