Figure 1. Untitled foil lithography print.

Collaborating with The Invisible Creek:

Water, Vines and Willows

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Abstract

Tkaronto/Toronto is built on top of the paths of multiple buried waterways. Despite their burial, these waterways have an ongoing liveliness and continue to express agency and intention through relation and interconnection with other beings. This thesis is a collaboration with one of Tkaronto/Toronto's most hidden waterways, Russell Creek, or as I call it, the invisible creek. Using critical frameworks of cripistemology, disability as a site of knowledge, posthumanism, and methodologies of walking and visiting, I probe at the question of how exactly does one collaborate with an other-than-human being? In a process of research-creation, the push and pull of shared ideas, interconnections and entanglements of relation are explored through pigment making and experimental printmaking. This work challenges notions of self-reliant individualism and asks what other worlds are made possible when our attunement is shifted to the extensive networks of care at the edges of our perception?

Keywords: pigments, printmaking, posthumanism, cripistemology, walking, visiting, ecology, relation

Land acknowledgement

Toronto, Tkaronto, the land that this work is done with and on, is of the Toronto Purchase, Treaty No. 13. It is the traditional territory of the Anishnaabeg, Haudensaunee, the Huron-Wendat, and the Mississaugas of the Credit. These lands are inseparable from their realities as Indigenous territories, past, present and future. Acknowledging traditional territories offers me a means of recognizing myself as a participant in a web of relationalities, between settlers, Indigenous peoples, and other-than-humans, including the land and the water. This web of relationalities involves a responsibility to recognize not only the history of violence in colonization, but the ongoing nature of that violence, as well as the resilience and resistance of Indigenous peoples. This land acknowledgement represents a commitment to continue unlearning colonial conditioning and to unsettle that conditioning in invisible spaces, to continue to integrate resistance in my work, and to support and foster reconciliation efforts for the benefit of present and future generations.

Acknowledgements

I have many thanks to give: my primary advisor Ian Clarke for encouraging me to keep experimenting, to keep playing with new processes, and that taking things one step at time is a valid part of walking methodology. My secondary advisor Michelle Miller for reading with me, thorough feedback on writing and discussions about Tkaronto best burritos. My cohort, especially Angela Atkinson, Casper Sutton-Fosman, Sujeet Sennik, mihyun maria kim, and Naomi Boyd, for much support in exhibitions, collaborations and studio discussions. My partner Brian Clarke for entertaining my walks through weird laneways and endless updates about various plants (and for bringing me burritos). My family for loving and supporting everything I do. My cat Lola, my closest other-than-human companion, for keeping me on a sensible schedule. And, of course, the invisible creek, for its extensive flow of generosity.

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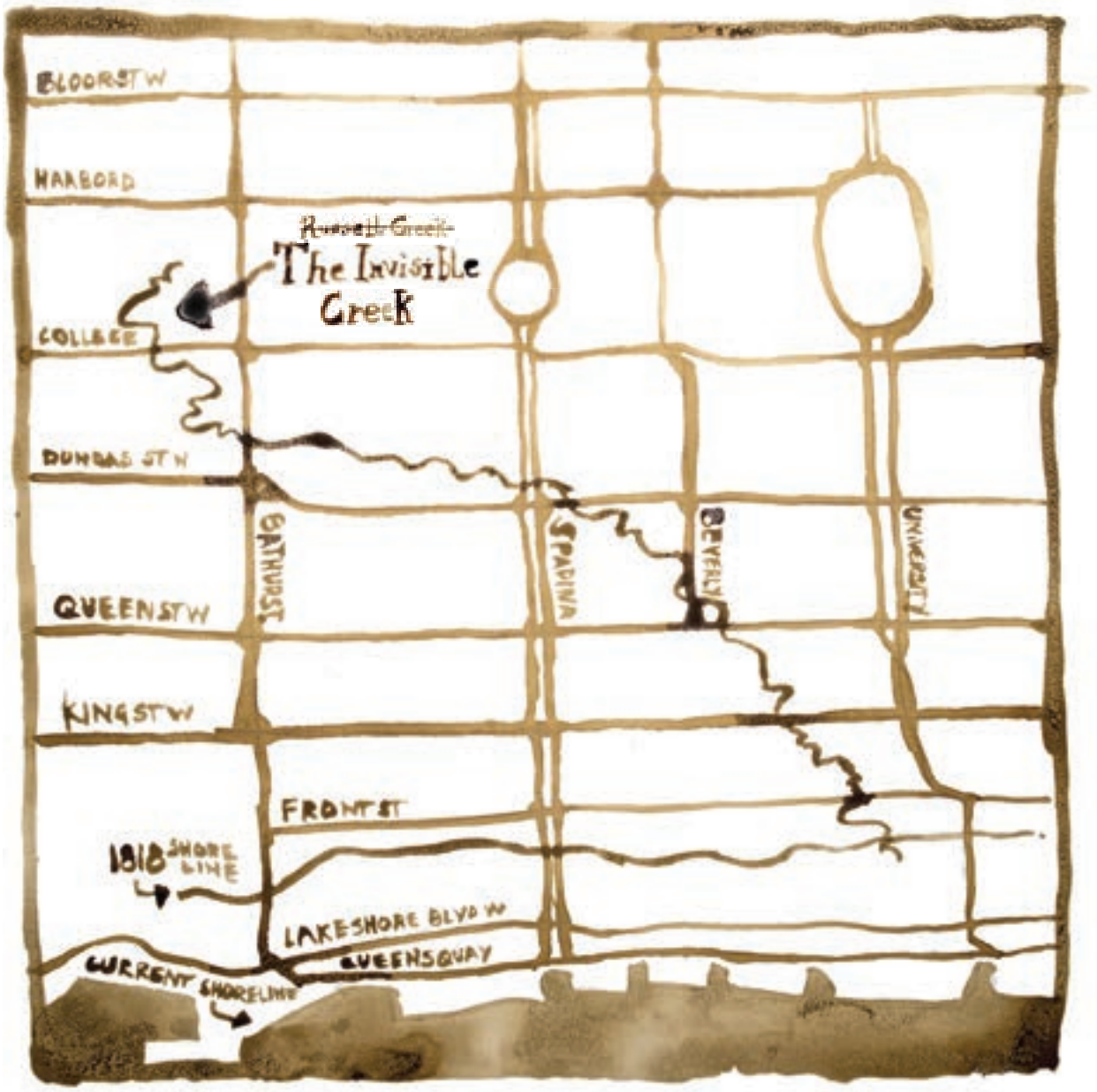

Figure 2. The path of the invisible creek in walnut ink. September 2022.

Introduction

In downtown Toronto, there is an invisible creek (see fig. 2). Not only buried, or hidden, but invisible. Invisible because the creek was not buried underground to flow through a tunnel, it was not hidden in a gully to contain pollution, but instead its being was pressured beyond the edges of perception by a human built environment. The creek is not visually perceived as a conventional creek, but it is still present and expresses agency. Nestled between two better recognized buried creeks, Garrison Creek and Taddle creek, it is known as Russell Creek, but I don't call it that.

Lost Rivers is a project that maps and provides both guided and virtual tours of the city's forgotten waterways with the aim of reconnecting people with our relations to the watershed and understanding of the city as not apart from nature, but a part of nature. *Lost Rivers* says that this creek is one of the most "hidden" in the Tkaronto/ Toronto. Part of it was buried in 1876 because it had been polluted and declared a nuisance, and the creek's were waters diverted into sewer systems defined by the city's grid. Most buried waterways in the city can be identified by changes in the landscape through a dip in the road, or by evidence of human-built infrastructure through the remains of a bridge. Trevor Heywood of *Metroscapes*, a website that documents walking environments of Ontario cities, did a walk of the creek, and tried to find these types of traces of it, and concluded that there was no longer a creek along its path.[1]

Over the past two years, I have spent time with this creek, walking its path, visiting its vegetation, collaborating with its waters and interconnected beings. It has been made clear to me that this waterway is still present. Through this research, I have brought it into my awareness by feeling for vibrations, listening for frequencies, and drawing out patterns with not only the water, but the network of connections that live with it.

In this work, I invite the invisible creek to collaborate with me. By collaboration I

1 I refer to Heywood's walk several times throughout this text, not to harp on Heywood, but because his walk is one of the few documented examples that attends to the perception of the invisible creek and its presence. Although I disagree with his conclusion, I appreciate his work.

mean “the process of shared creation: two or more individuals with complimentary skills interacting to create a shared understanding that none had previously possessed or could have come to on their own” (Schrage, qtd. in John-Stiener 222). To do this, I use two approaches. The first approach is in variations of lithographic printmaking (see fig. 3). I’m interested in lithography because the process relies on water to reveal invisible traces. I gather water from puddles along the creek, or rain water, or sweat from my own body. I use soil from sites along the creek and its interaction with water to make marks on a plate. Or I use plant material with tusche to draw and make marks. The second approach is by gathering the riparian plants that grow along the creek’s path (see fig. 4), and processing them into water based and oil based inks that I then use in monotype, water marbling or other kinds of printmaking. Together, the creek and I develop shared language via the movement, the repetition, and the rhythm of walking, flowing, visiting and printmaking. Through these processes, we gather traces of a world we have created together.

When I think about why water, why the invisible creek, I think of coming from an island in the middle of the Atlantic ocean, Ktaqmkuk/Newfoundland. I think of generations of ancestors who lived on similar islands in the Anglo-European North Atlantic. I think of being shaped by the agency of rain, drizzle and fog. The water of that island has taken part in my becoming. I think of the creeks that run through the suburbs I grew up in. The gutter puddles I played in, the ponds I fished in and the bogs I lost boots in. The three rivers tinted red with tannins and ochre on the west coast of the island that I obsessively swam in, that we still take family baths in, that salmon still run in. I think of my inherently damp constitution. The sweat that oozes from my pores to excess, running down my wrists, dripping off my face. The damp weather of Tkaronto/ Tkaronto’s summers, the heat and humidity, my skin slick with wet. The endless interpermeation of water with my being.

Figure 3. Untitled foil lithography print using tusche and virginia creeper vine to make marks, 8”x6”. October 2022.

Figure 4. Virginia creeper, tree of heaven and other vegetation in an unnamed laneway west of Markham St and south of College St. June 2022.

There is power in water to disrupt assumptions about boundaries, perspective and interdependence. Water is fluid, always in movement, and in excess of prescribed bounds. It can even disrupt our preception of control over our built environment. In my human expectations of what a creek should be, the creek appears invisible, but its waters and their influence disrupt this. The waters of the creek have an ongoing flow as the rain, snow and runoff that pours into the sewer the creek was diverted into, mixing with bathwater, dishwater, sweat, urine, and sewage, from buildings and homes (see fig. 5-10). These waters remain on the land, on skin, on fur, in mouths, in bodies, in soil. These waters are held in riparian plants that grow along the creek's banks, nurturing the vines and roots that seek out the sounds of its flow.

When I think about why the invisible creek, I think about the character it has shared with me through our work together. Its waters and their creation of, navigation of, and dispersion into interstitial spaces on the land, the texture of a printing plate or the gel of marbling size. The patience of the creek's lengthy existence is expressed through the time it takes to do its printmaking work. The tenacity of water eroding asphalt and concrete. The plants growing on, weighing down, and rotting out both century old and brand new structures in laneways. The rushing of spring rain, swelling into a flood, with the power to swallow Ferraris.[2] As the creek acts to nourish and create, it also has the capacity to crumble and destroy. It has revealed itself to me as a gentle being with a patient fury.

2 The invisible creek meets Lake Ontario's old shoreline at The Lower Simcoe Street Underpass which has been the frequent site of spring flooding and abandonment of submerged vehicles (Fraser).






Figures 5-10. Clockwise, Lane south of Dundas East of Huron, February 2022. Orphanage Mews Feburary 2022. Parking lot of St. Volodymyr Cathedral of Toronto March 2022. Laneway south of College and East of Palmerson June 2022. Wayne & Shuster Ln (still from video) June 2022. Beverely Street July 2022.

Research Questions

- How to talk about the invisible creek in a way that honours its presence, agency and influence?
- As a printmaker, what processes can I invite the creek to participate in that allow it to express its agency?
- How are those of us that are in relation with the creek, both human and other-than-human, changed by it?

Scope and Limitations

This project has a specific scope. It is an exploratory process of research-creation (Truman, 221). It asks, what do artistic processes that prioritize the creek's agency do? What knowledges do these processes foreground? What is learned when the liveliness, activity and decisions of the creek are prioritized, are emergent in the process and embodied in the practice of research? Being attuned to and pursuing emergent experiences driven by the creek is a key aspect of this research. Describing the process as a collaboration with the creek is an intentional decision that probes at the possibilities for collaboration with other-than-human beings? When working with other-than-human-beings, what makes a process collaborative and not exploitative? I carry this responsibility by reflecting on concepts and ideas in the presence of the creek and with its material, being sensitive to the creek's complementary skills and style of working and taking ample advantage of "opportunities for relaxed interactions" through regular visiting (John-Stiener, 223). That is not to say that this work has been without frustration. As Nemanis writes in "On Collaboration (For Barbara Godard)", "collaboration is sweaty work replete with tense negotiations" (218), I have been humbled by the creek's insistence on certain processes and ideas.

This project also has specific limitations. The waters of this creek run through, and alongside, deep histories of cultural and environmental erasure. They also run

through, and alongside, the ongoing labour of others who work to uncover and revitalize what has been erased. The scope of this project cannot address the vast relations that the creek maintains.

One way of addressing these limitations is through my choice of referring to the creek as “the invisible creek.” The name of the creek that you’ll find on maps isn’t the invisible creek, it’s Russell Creek, named after Peter Russell.[3] He was an anti-abolitionist who enslaved a family. I don’t want to honour Peter Russell in my work. I haven’t been able to find any other names for the creek, Indigenous or otherwise.[4] I don’t know what the creek wants to be called, but I do know it doesn’t want to be called Russell. As a white European settler, a visitor on this land, a guest of the creek, it isn’t my place to give it a name. The invisibility of the creek, and the elusiveness of its other names, speaks to the erasure of not just geographical histories, but the multiple cultural histories of Black and Indigenous peoples. In this is the tension of the precariousness of knowing, and coming to terms with what may not be for me to know, and what may not be for me to speak to. Referring to the creek as the invisible creek focuses the scope of the research on the connections of materiality, affinity and relation between myself and the creek. It foregrounds the ontological being and becoming of myself and the creek.

A second limitation of the scope of this research is that this is not a work of decolonization. In *Decolonization Is Not a Metaphor*, Eve Tuck and K. Wayne Yang make it clear that decolonization is specifically about the repatriation of Indigenous land, it is not about justice frameworks or critical methodologies (3). I want to be clear about not muddying these waters. In *An Indigenous Feminist Take on the Ontological Turn*, Zoe Todd writes that Indigenous thinking strongly influences theories of posthumanisms, one of the critical frameworks I articulate in Chapter 1.2. Todd writes that there is a tension in non-Indigenous scholars lack of depth in understanding Indigenous theories,

3 See artist Camille Turner’s work *The Resistance of Peggy Pompadour* and Afua Cooper’s poem “Elizabeth Russell Speaks of her Slave Peggy Pompadour” for powerful works about this family.

4 On the Mississauguas of the Credit website there is a document by Augustus Jones in 1796 that records the Mississauga and English names of rivers and creeks, but the name of the invisible creek isn’t included.

misapplication of those theories, and the resulting avoidance of acknowledging their influence (9). I am a non-Indigenous scholar, not an expert on Indigenous theories. I recognize that there is a tension in settler and Indigenous relations and aim to be careful not to appropriate knowledge and practices. As this research describes an approach to considering an other-than-human being as a potential research partner, working with stolen waters on occupied land, I have been influenced by the approaches of multiple Indigenous scholars and artists to considering relations. I am grateful for the opportunity to visit with these waters and this land, and appreciate the generosity of Indigenous scholars who make their knowledge available. It would be irresponsible not to acknowledge their thinking throughout this text, but I do so as an act of respect and good citational practice, not as meaningful work of decolonization.

A third limitation of the scope of this work I should address is in environmental advocacy. Artists and activists have a long history of directing attention to buried streams of Tkaronto/Toronto. A common advocacy goal is “daylighting” or re-exposing buried waterways to the open air to support ecological systems, engage communities in stewardship of watersheds, and take advantage of cultural and recreational benefits of blue spaces. Garrison Creek, having the most notable impact on the landscape, has been a major focus for this. *The Human River Walk*, organized by the Toronto Public Space Committee, occurred annually from 2005 until 2009. Human participants dressed in blue walking the path of the Garrison, with the goal of directing attention to the life and presence of the creek (Cook). The dream was, if not to fully daylight the creek, then to build a series of connected stormwater management ponds as a part of the city’s Garrison Creek Linkage Project and a prototype for re-activating other buried waterways (Brown & Storey). Small initiatives and time build towards possible futures. In 2016, the WaterHarvest structure was built in Fred Hamilton Park, one of the parks along Garrison Creek, to gather rainwater and redirect it away from the sewer system to native plants (Friends of Roxton Road Parks). Planning for the Lower Garrison Creek Park, where the

Garrison meets the old lakeshore, started in 2013, is finally slated to begin construction in late 2023 (City of Toronto).

The narrative that dominates these Garrison Creek projects, due to their grounding in civic action, shapes thinking about water through the modern hydrological cycle. They position water as a resource to be managed and used for the benefit of citizens, or as a site of ecological stewardship and habitat restoration. Not all artists who work with Garrison Creek take this approach. For example, Saulteaux artist Robert Houle's untitled bronze installations in concrete along the path of the Garrison, with maps and animals, link the buried waterway to Indigenous stories of relation, land and place (Nagam, 199). Houles' installations are used to navigate the creek, but point to memory and relations beyond the cityscape. Maria Thereza Alves' *Garrison Creek* is an installation with a historic photo of the Garrison when it was still above ground, and a pile of bags filled with earth gathered by participants. She writes that the creek, before its burial, "was never consulted on whether they wanted to be dismissed from history" (Alves). Alve's work reignites the Garrison as a being with agency.

For me, Garrison Creek is tied to the important labour of activists who continue to work towards its ecological revitalization. In *Listening for Lost Creeks* Isabel A. Moore writes on Eirin Moure's poetry about the anti-anaesthetic and Garrison Creek with the intention of maintaining that things (creeks) can be in relation with other things, without human presence (706). "Anti-anaesthetic… the numbing "anaesthesia" of civic law and order… those persons or things that have been forgotten, marginalized or buried may yet be recollected by art and aesthetic tactics that push against the centre's pull" (707). I have chosen to work specifically with the invisible creek because of my spatial relation to it, but also because it allows me to disengage from the depth of civic action that the Garrison Creek commands. Concepts about working in collaboration with other-than-human beings, and acting on those concepts as I have done in this research, recognizes the relations the invisible creek maintains with other beings.

This research is not only about making not-numb, or developing an awareness of vitality of matter and the networks of animate beings at the edges of perception, but activating these concepts by working in collaboration. Daylighting, or uncovering, the creek to revitalize ecosystems, although important, is not the goal of this research. This research recognizes the invisible creek as the being that it is in the present, rather than an anticipatory projection. It is an appreciation of the creek for the ongoing acts of maintenance and care that the creek already performs. I have not only been made not-numb by the invisible creek, I have been animated by it.

Thesis Structure

In Chapter 1, I position myself as a person with multiple invisible disabilities, working through a lens of cripistemology. Cripistemology is a combination of crip theory and epistemology, the theory of knowing, to emphasize disability as a site of knowledge. I explain how experiences with chronic pain brought me to thinking about vulnerability, invisibility and interdepenence. This is the headwater of how, and why, I came to know the invisible creek. Following the flow of these themes, I connect this cripistemology to posthumanisms, and articulate how posthumanisms have shaped my thinking about relation with the waterway. I then look at the work of several other artists who work in collaboration with other-than-human beings. This informs how I have thought of and navigated my relation with the creek.

In Chapter 2, I explain the walking methodology I have used to guide this research. Elements of rhythm, repetition and movement guide every step of this research. Sensory inquiry, slowness, and visiting. The push and pull of collaborative work, response and reciprocity. I share the work of other artists who use walking methodology in ways that have influenced me.

In Chapter 3, I look at the steps and processes of the material making. In Walking and Remapping, I share aspects of the research process that engages with archives,

citizen science and embodiment. I descibe a collaborative walk that was instrumental to the processes that became my focus. In Pigments, I articulate my approach to reciprocal foraging and how this balances the responsibilities of collaboration. I also discuss how pigments emphasize temporalities and ecological connections in research by describing the riparian plants I work with, their interconnection with the creek, and their influence on the work. In Printmaking, I describe how working with experimental processes of printmaking allow me to collaborate with water and be attentive to the agency, desires and intentions of the creek. In this I describe what the creek has taught me through foil lithography, a variation on kitchen lithography, as well as water marbling, suminagashi and monoprinting.

In Chapter 4, I conclude by articulating the research contributions of this work and by addressing my research questions. In this I share how world making with the creek has been a journey of discovering one approach to living well in precarity.

Chapter 1 Critical Framework

1.1 Cripistemologies

Crip theory, coined by Robert McRuer and Merri Lisa Johnson, lies at the intersection of disability studies and queer theory. Like queer theory, crip theory reclaims the term “crip” as a label of pride. It interrogates neoliberal compulsory ablebodiness and ablemindedness. Cripistemology, a combination of “crip,” from crip theory, and “epistemology,” theory of knowledge, emphasizes the embodiment of disability as a site of knowledge. My approach to relating to the creek is a kind of posthuman cripistemology, using disability as a site of knowledge to get to know an other-than-human being.

In early 2020, before I started graduate school, I was struggling with chronic pain and an endometriosis diagnosis. Then the pandemic happened and the cracks in our healthcare system were laid gaping. I came to feel that engaging with a medical system that is not only neglectful and unyielding, but also precarious and crumbling, was an ineffective weight to bear when it came to focus in my art practice. There are issues that connect deeper than individual experience, and they emerge in the themes that compel my research. Themes that come from experiences with multiple disabilities. Invisibility and perception. Vulnerability, interpermeation, interdependence. How to live well? How to find pleasure and joy in times of pain? How to create change, how to create possible futures?

In *Sick Woman Theory*, Johanna Hedva also writes from a place of chronic pain caused by endometriosis. She asks “what modes of protest are afforded to sick people?” She says she started writing it “as a way to survive a reality I find unbearable” (Hedva). She calls out capitalism for constructing sickness as a binary opposite to wellness, for defining who deserves care, but only temporary care. This temporary care refers to the window of time permitted to a person to be “cured” of their disability, after which they are perceived as a burden or less-worthy of care. In *Feminist, Queer,*

Crip, Alison Kafer writes about curative time or “a curative imaginary, an understanding of disability that only expects and assumes intervention but also cannot imagine or comprehend anything other than intervention” in contrast to crip time, a reorientation to time that creates a flexibility of expectation of pace, scheduling or linear progression (27). Thinking with crip time frees me from expectations of the creek to perform as a creek, or an imagined futurity in which the creek flows free in some kind of alternate landscape, but allows for the creek to be perceived as an interconnected and ongoing being in the present. In times of capitalist ruin, environmental emergencies and chronic crisis, cripistemologies offer some tools for building possible pathways for survival (Danylevich and Patsavas). I would like to imagine that thinking through a crip lens offers not only a means of survival, but creates space for wonder and pleasure in difficult times.

In *Agency Without Mastery: Chronic Pain and Posthuman Life Writing*, Leigh Gilmore articulates that certain types of recent chronic pain writing offer posthuman alternatives to conventional languages of pain, such as clinical and trauma theory based, “including a being that is not absorbed into the self, a presence that coexists in and with and through the self, and in which the self “embodies” in ways that challenge what “embodiment” means in humanist terms.” In 2018, in a diary on my own pain, I wrote “A heavy weight inside my stomach, feels like a rolling rumbling hairy creature, a bundle of slumbering anxiety, all flesh and hair and teeth. The animal inside me, idly gnawing. Appendages easing into my organs. An insatiable desire to nourish and grow and be. I am as furious about my neglect as the animal inside me is about theirs” (Norman). My experience with pain challenged how I thought of the self, the boundaries of my body, and the agency of parts of my body that no longer felt like only my own.

In this time before the pandemic, before I met the invisible creek, I walked the shores of Sunnyside beach and the ravines of High Park. I collected natural patterns, and wondered about the similarities between patterns in the body and patterns in

the world. I read Alexis Shotwell's *Against Purity: Living Ethically in Compromised Times,* a response to Anna Tsing's conference *Anthropocene: Arts of Living on a Damaged Planet,* and took on ideas about the porosity of bodily boundaries, being co-constituted with the world, and creating a future for living well in a world full of change. For this research, I have revisited this text. The title, *Against Purity,* comes from the concept that there is no pure state to return to, that human bodies are continuous and interpermeated with uninvited other-than-human material, and our histories, presents and pasts are similarly soaked in complex entanglements that individuals cannot absolve themselves of. She argues for the concept of interdependence as a basis for understanding compromise, and writes that instead of aiming for purity "we should act in the present in a way that cares for the harms involved in being alive and that tries to open different futures for all of the beings and relations we are with" (Shotwell, 135). In the work with the invisible creek, the aim is that through attending to the interdependence of relations it supports, including myself, there is the creation of openings for not only other possible futures, but other possible presents.

In *The Mushroom at the End of the World,* Anna Tsing writes that the anthro- in anthropocene creates a barrier to "collaborative survival" (20). That the sense of precarity and vulnerability in late capitalism is an opportunity to disrupt the drive for progress, growth and expansion and instead make time to practice the "arts of noticing," to recognize the multispecies interconnections and world making we live with, in both "harmony and dissonance" (Tsing, 24). She uses matsutake mushrooms, the fruit of an underground fungus that get nutrients from trees and provide the trees with other nutrients, and examines this in context of the disturbed landscapes of logging forests, the people that forage for the mushrooms, and the social and political connections within. This foraging is an example of a practice that exists outside the drive for progress. Tsing writes "to live with precarity requires more than railing at those who put us here" (3). Working only from a place of chronic pain, wanting to create change in systems I felt powerless

to advocate even for myself in, held so much anger for me that it was not generative without being dangerous. The potential of collaborating with an other-than-human being, ostensibly separate from myself but not without relation, shifted my perspective on what change can look like and what change can do.

In *Animacies*, Mel Y. Chen writes from a site of chronic illness, diagnosed with "multiple chemical sensitivities" and "heavy metal poisoning" (197). She notes that it is recognized that illness can result in undesired periods of rest, pauses in time, pauses in life. She states that "for those with the privileges of food, care and physical support, this pause can also become a meditation (if forced) on the conditions that underlie both illness and wellness, that is, the biopoliticized animacies that foretell what may become of a changing body, human or not, living or nonliving" (20). She describes how her condition impacts her by illustrating the experience of a walk in the city, the hazards and choices she has to navigate due to the "porousness of the body" (201). When she returns home, she lays on her couch. Throughout the text she repeatedly references the animacy of her couch, the intimacy she has because of her illness: "the couch and I are interabsorbant, interporous… these are intimacies that are often ephemeral, and they are lively; and I wonder how much they are really made of habit." (203). She writes that "thinking and feeling critically about animacy encourages opening to the senses of the world, receptivity, vulnerability" (237).

I outline Mel Y Chen's personal encounters with intimacy and animacy to help illuminate how, and why, I came to know the creek. At the start of the pandemic, just before I began my studies, I moved to downtown Toronto. I had lived in the west end for almost a decade and relied heavily on High Park and Sunnyside Beach for walking, for intimate relation with place. The invasive phragmites on Grenadier Pond, the towering yellow flowers and puzzling dog strangling vine in the Spring ravine. A specific pile of fallen trees in the duck pond that for some reason I called my nest. Suddenly I was living in a new neighbourhood amongst the complex isolation of COVID-19 lockdowns.

Public transit wasn't safe because of COVID. I couldn't access familiar places that let me stretch my legs between periods of rest, that made me feel calm. I realized I had to get very intense about developing a relationship with this new place, even though it was not geographically far from where I had been. I had heard of Garrison Creek, and was interested in it, and did some work with it, but it was too far for me to reliably or consistently walk with my chronic pain. But on Lost Rivers, there was also the invisible creek, only two laneways away, its path a meandering journey to the grocery, the pharmacy, the studio, and the lakeshore.

A desire for the waters of this creek to be recognized parallels my own desire for invisible illnesses to be recognized.[5] Like disability, the waters of the creek and the definitions of its boundaries are fluid. Early in my research I encountered Eve Tuck's *Breaking up with Deleuze* in which she critiques damage narratives, which is based on the false idea that if evidence is provided to external authorities, support will come and harm will stop. For Tuck, this is in context of damage-centred research in Indigenous communities in the United States, and she questions the efficacy of this kind of research and the legacies that these narratives leave. She advocates instead for desire-centred research as a tool for subverting damage narratives, that desire-based research seeks out complexity and rejects simplified analysis of communities as ruined. In *A Glossary of Haunting*, Tuck writes "[desire] is productive, it makes itself, and in making itself, it makes reality" (648). Damage narratives are a tempting path but pathologizing myself, and pathologizing the land, are not a sufficient motivator for change. The invisible creek is not a metaphor for invisible illness, but is an other-than-human being whose liberation is interconnected with my own. In working with the creek as a collaborator, a space is created for us both to be present and to articulate some of what we know about ourselves. Through a desire for other ways of being, our work together contributes to the creation of realities full of other possible worlds.

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5 Although, through this research I have realized that recognition is not necessarily what either of us desires, but rather space to thrive and time to do the maintenance work of care.

Disability and chronic pain manifest as decisions in process rather than being explicit in the work. Many of my choices are defined by managing pain and energy and overwhelm, managing how I move through the world. I am articulating my understanding of cripistemology to share how I came to posthumanisms. How thinking with disability brought me to thinking about boundaries of the body, interconnections, interpermeations, and interdependence of ecosystems. How chronic pain brought me to thinking about other-than-human animacies and compelled me to collaborate with the creek.

1.2 Posthumanisms

I first came to posthumanism in an academic context through Maria Puig de la Bellacasa's *Matters of Care: Speculative Ethics in More than Human Worlds*. Bellacasa is interested in interconnectivity, relationality, non-human beings, and troubling or unsettling the idea of care as "good" or apolitical. Thinking with Latour's matters of concern (30) and Haraway's relational ontology and situatedness of knowledge (69), Bellacasa directs attention to doings and the impact of meaning making and relations. Using Joan Tronto's definition of care as, "everything we do to," (4) she writes about care not as morality, but as attunement to affective interpermeation, and the impact of the way that attunement is written or spoken about.

This early encounter with ideas about posthumanism, in the context of care (in Bellacasa's case, in context of caring for soil), influenced how I thought about my relationship with the creek. When I tried to describe the creek to friends, family and colleagues, I struggled with putting the reality of its presence into context. When describing it to audiences that might not be familiar with Tkaronto/Toronto, I had to articulate that the creek is buried, hidden, invisible, downtown, in concrete, but also lush, vibrant, and lively. When I spoke about the creek in a dismissive way, to make clear its invisibility, I heard Bellacasa in the back of my mind. I was betraying the affective interpermeation the work was responding to. I was betraying my attunements. Situating the creek in its urban reality while maintaining clarity about its presence, agency and influence requires a constant sensitivity to care.

In *What is Posthumanism?* Carey Wolfe articulates posthumansim as a theory that comes both before and after rational humanism. Rational humanism is an Anglo-European framework that works in universalisms, separates humans from animals and nature, and is disconnected from the materiality and embodiment of the human. Posthumanism comes before humanism because it opposes this fantasy and accounts for this materiality and embodiment. It comes after humanism because it is a response

to a historical moment of decentering the human, which in turn is a response to theories about the anthropocene. Wolfe references Rutsky to say that this is more than an extension of dialectical human vs other, or control versus lack of control, but based on “mutation that is ongoing and immanent” (xviii). When something is immanent, it comes from within, rather than transcendent, which comes from beyond or outside.

This understanding of posthumanism helped to reframe my thinking about the creek’s participation in our material experiments. I had been thinking about experimental printmaking processes as studying and testing parameters within my control to manage the success of a print, for example printing plate material, substrate, and acids used to etch. I thought of the creek’s material participation as being out of my control, but in thinking through posthumanism, this was our area of collaboration. The interaction between myself and the waters of the creek, and my observations of the actions of the creek as it did its work and took time to evaporate, was a mutual participation. There was no human vs other, or control vs lack of control, but a working together. The changes that happen on the plate come from within the materiality of both myself and the creek. There was no one without the other, in these processes, there was only together.

Feminist new materialisms is an area of posthumanism that attends specifically to matter. Karen Barad argues that matter has no predefined traits, and is always in a process of becoming. It temporarily develops qualities through relation with other matter. For example, ink and paper becomes a print through its relation with each other. This relation is an entanglement, relations between matter is co-constitutive and always becoming. Thinking with feminist new materialisms, Braidotti works with Deleuze and Guittari’s concepts of the virtual, actual and immanence. I understand the virtual as potential, the actual as the present, and immanence as ongoing becoming within. Braidittoi redefines the virtual (potential) as affirmative ethics, emphasizing interdependence and forces that sustain, persevere, nourish relations. In *Walking*

Methodologies, Springgay and Truman discuss Braidotti's affirmative ethics in context of participation as "a mode of thinking-doing that is anticipatory and creative rather than destructive" (71). They emphasize that affirmation is a critical mode, not a soothing one, and is an opportunity to engage with generative complexity at the edges of perception.

Braidotti's affirmative ethics is related to the argument I've been trying to make with my material research, that by focusing on the affirming nature of the relation between the creek, the plants and myself, there is a disruption of the parallels of pain the creek and I share. Here, there is also a connection with Eve Tuck. There is a path of desire at the edge of perception that is not easily made smooth. In *Breaking Up with Deleuze*, Tuck states that "The theory of change is flawed because it assumes that it is outsiders, not communities, who hold the power to make changes". Instead of advocating for policy, societal recognition, or external change, attending to the relations between myself and the creek is an act toward affirmative change. In reading these theories together, I'm indebted to Zoe Todd's writing, which references Vanessa Watts on managing the risks of perpetuating colonialism while working with posthumanism (9).

Vanessa Watts writes that from Haudenosaunee and Anishanaabe cosmology comes the theory of Indigenous Place-Thought,which contrasts with Anglo-European onto-epistemological divides. Indigenous Place-Thought says that humans and non-humans are of the land, and that the land is capable of expressing its sentience through humans and non-humans, and that thought and place are not and cannot be separated (21). Watts writes that "To be animate goes beyond being alive or acting, it is to be full of thought, desire, contemplation and will" (23). A posthumanist framework can act as a path to "heal the manic drive to dissect the togetherness that we perceive'' (Bellacasa, 33). Thinking with Indigenous Place-Thought has been an integral aspect of understanding how to tap into that togetherness and work with an other-than-human being. Not only is the creek animate and agential, but it has thoughts and desires. These thoughts and desires are expressed both through the movement of the waters in

the creek's interconnected beings, but also in how it animates me in our collaboration through the sharing of ideas, decision making processes and even casual visiting. With Indigenous Place-Thought, I can acknowledge that I do not fully know, or claim to be the voice of, the creek's thoughts and desires, but that they are present, have influence, and emerge through the process of the work.

There are several artists who work in collaboration with other-than-human beings who have guided me as examples in thinking-with and making-with ideas of, or adjacent to, posthumanism. Thomas Little, who works with inks and slime moulds, Michael Flaherty, who weaves with the tides of the ocean, and Laura Grier, who works with the intimate relation between herself and a lithography stone.

Thomas Little of Rural Pen Inkworks is best known for making inks from guns, dissolving them and taking them out of circulation. His work, *Mother Lua*, demonstrates his research in working with physarum polycephalum, slime mould, in print making. *Mother Lua* is a print of Lua Mater, an Italian goddess who soldiers burned weapons in her honour, as a madonna icon (Little). In *Mother Lua*, the slime mould is fed with cakes of oatmeal mixed with red iron powder, and grows across a water dampened print. The ink on the print is "black iron valerian root ink," black ink made from guns mixed with valerian root to repel the mould, but the mould has a rebellious spirit and draws where it wants (Little).

Artist Heather Barnett, who runs *The Slime Mould Collective* as an online network for sharing information on working with slime moulds (20), writes that the aim of working in collaboration in this way is to highlight awareness of other living systems that live with us and to explore ways of being "open to different ontological perspectives" (34). In working with slime moulds, as Little does, an artist not only has to feed and care for them, but also understand their motivations, needs and desires. Those motivations, needs and desires do not always match what is anticipated, but that is the beauty of

collaboration. When the slime moulds that Little works with express their rebellious spirit, or when the invisible creek is reserved in its mark making, there are ideas and desires being expressed that generate an affective response.

On the question of impact, longevity and commodification in the context of a precarious and environmentally damaged world, Little proposes working with slime moulds as his personal solution in creative practice (Little). These are questions that come up often when working with foraged pigments because botanical varieties are not intended to last forever, they change and fade over time. They are temporally charged. Working with other-than-human beings with vastly different temporal perspectives, like slime moulds or a waterway, builds on this. It shifts the thinking about printmaking from concerns about outcome and the life of a print after creation, to the relations, beings, and becomings that emerge within the processes of printing.

Tidal Weave by ceramic artist Michael Flaherty is a loom built using ceramic objects so the rising and falling of the tide can move the loom's operating parts. In an article in Eastern Edge, Flaherty writes that the work is exploring the research question of "How can makers (such as craftspeople) carry on in an era of ecological catastrophe?" Between tides Flaherty returns to the loom and contributes to the weaving himself. In this, Flaherty is working in collaboration with the ocean, celebrating the ocean's additions of seaweed, living creatures and felting of the woven fabric.

Like Little's work with slime moulds, *Tidal Weave* is an exploration of slowness. Flaherty's art practice is craft-based, with an emphasis on appreciation for the time and labour it takes to hand-make objects. In projects like this one, through working with the environment, Flaherty is interested in making "at the pace the earth works at" ("Artist in Residence"). Working with The Invisible Creek is similarly an exploration of slowness. This slowness opens opportunities for thinking critically about what doings, what ideas, the creek contributes as it works on prints, or as we visit together. However, the approach

of Flaherty and the approach the creek and I have taken are different. Flaherty works generally with the environment and does not articulate a specificity of place, or working with a specific body of water.[6] It is not a key aspect of *Tidal Weave's* concept. Flaherty is more interested in directing attention to the environment we live with, and probing at the doings of alternatives to industrial modes of production.

Sahtu Délįnę First Nations artist Laura Grier's work, *Yədíı Kwə*, is a series of lithography prints that show Grier's relationship with the lithography stone she works with. Through ritual, ceremony and performance, Grier shares with the stone her experiences and survival strategies as a human. In "Yədıı Kwə Daıʔá Gots'é Náts'ətə: The Story of Indigenous Spirit Printmaking and the Living Rock Spirit: Yədıı Kwə," Grier (in the voice of Kwə) writes "this collaborative relationship. is so much more. this union is about us exposing our spirits to one another. with hopes that others may see the spirits that live in all things. when you start to see us, it is hard to un-see us" (18).

It is difficult to articulate the influence of Grier's work on my own. Her approach to lithography and sensitivity to process gave me the confidence to follow my intuition of choosing materials based on affinity. I was fortunate enough to audit a stone lithography course she taught, in which she shared her expertise in working with tusche and also supported me in risky experiments. But it was her articulation of relation and collaboration with Kwə in her writing that I frequently came back to in my work with the creek. The relation that Grier has with Kwə is different than the one I have with the creek, as they share everything in a deeply emotional and spiritual way. The creek is somewhat reserved with me, and through our collaboration we worked to build trust, but it still has boundaries on what it will share. However, Grier's work gave me faith in the belief that the level of relation, intimacy and friendship that I feel with the creek is tangible and real.

6 I do feel place is still inherent in the work, even if it isn't always articulated. In "Artist in Residence", Flaherty explains that the weaving of *Tidal Weave* done in Ireland couldn't happen in Newfoundland because of a difference in the extremes of tides between the two places.

Figure 11. Willow trees in Bickford Park on the path of Garrison Creek. April 2021.

Chapter 2: Methodologies

Before I came to know the invisible creek, I first met with Garrison Creek. This was long after I got to know the duck pond in High Park, with its mounds of decaying branches piled up like a secluding nest. Alexandra Nahwegahbow encouraged me to get to know local waterways to connect with the land, and Garrison Creek is the first place I went, following the path as outlined by Lost Rivers. I listened for the creek through a manhole, was mesmerized by clusters of willow trees in Bickford park (see fig. 11), and brought home a rock to grind up and use as pigment in an artwork on decolonial practices, land and physical therapy. Garrison Creek is grand, but some distance from me, and the invisible creek was closer. More in direct relation with me. Easier to visit with chronic pain. How could I learn to recognize the invisible creek? Garrison Creek's willows showed me the way.

This is how I came to walking as my primary methodology for research-creation. Walking methodology attends to place, sensory inquiry, embodiment and rhythm. It is informed by Isabelle Stengers' "politics of slowness," which allows for opportunities to ask critical questions when different levels of awareness are engaged. The sensory and affective parts of walking methodology bring focus to the corporeal and material aspects of the research (Springgay). I wanted a methodology that attended to sensory concerns beyond the visual, and was already thinking-with sensory ethnography (Pink). Walking methodology relies on a framework of feminist new materialisms and posthumanism in a way that is relevant to my critical framework. The critical backbone of walking methodology demands an engagement with intersections of identity, specificity of place and situatedness, and movement.

I have been influenced by artists Camille Turner and Dylan AT Miner, artists who have engaged with walking research-creation practices on sites adjacent to the creek.

Camille Turner's works, *The Resistance of Peggy Pompadour* and *BlackGrange,* cross the path of the creek in multiple ways. *The Resistance of Peggy Pompadour* is

a sonic walk envisioning a meeting between Gloria, a contemporary black woman, and Peggy Pompadour, who was jailed after resisting enslavement by Peter Russell, the namesake of Russell Creek.[7] BlackGrange is a one-time performance and self-guided walking tour that uncovers histories of the African diaspora in the Grange neighbourhood through which the creek's path travels. Turner uses methods of walking to "make physical the experience of ephemeral pasts" (xiv). Chen, discussed in chapter 1.1, describes the intimacies she feels with her couch as ephemeral as well. It is a fleeting and difficult to grasp intimacy that Chen questions when it is not actively engaged and takes the form of a memory. The practice of walking the path of the creek is not only a manifestation of the time we spend together, but it brings to the fore the very embodiment of our relation. Turner uses walking methodology to anchor the ephemerality of the past in the specificity of place, to feel the vitality of matter that was present at the time of these histories, and to enact the continuity of resistance. My approach differs from Turner's slightly, because my interest is in working with the ongoing presence of an other-than-human being, but the histories of the land and the memory of place play a not insignificant role. My understanding of the creek grows as we move together through the space we share. I feel the bodily affect of the vitality of the creek, and through this, our ephemeral intimacy is made physical.

Dylan Miner's *To the Landless* is an artwork and walk through Chinatown and Kensington Market, which crosses the path of the creek, and explores contentions between anarchists Lucia Gonzáles Parsons and Emma Goldman, imagining them meeting and talking. The participants of the walk visit with these activists by carrying their memory through conversation about settler colonialism, capitalism, patriarchy and immigration (Miner). In this work, Miner also demonstrates a methodology of visiting, a means of reclaiming time outside linear capitalist notions of productivity. Miner writes, "we must be cautious to focus not on what is being made, but rather on

7 Russell Creek is the recognized name of the invisible creek, but is a name I resist because of this legacy.

the actual process of making and with whom we are doing this work," and emphasizes that through visiting there is a making-process in the creation and maintenance of community. This methodology of visiting has had an influence on how I approach my relation with the creek, and allows me to recognize that our primary making together is not through inks and prints, but through the making-process of maintenance and care of an interconnected community of human and other-than-human beings.

Figure 12. (Top) Willow, looking north of Habord St and Markham St, June 2021
Figure 13. (Bottom) Willow, looking north of Habord St and Markham St, July 2022.

Chapter 3: Process and Results

3.1 Walking and Re-mapping

Just north of the intersection of Harbord and Markham street, there is a willow tree that bends over the road. In the fall of 2021, its branches and leaves reached down and lingered on the concrete and asphalt, allowing them to brush gently over the bodies of pedestrians and the roofs of cars (see fig. 12). It has since been pruned back, but the tree is still a mesmerizing sight (see fig. 13). Willow trees are indicators for underground water. They require large amounts of water to thrive, and are used to manage wet areas in landscaping, sucking up small ponds through their roots. Their roots are dangerous and disruptive, upsetting foundations of buildings and easing their way into pipes as they follow the sound of water.

The first official guide I followed to get to know the invisible creek was *Lost River's Russell Creek Walk*, created by Peter Hare. The guide offers an estimation of the path of the creek, designed to be easy to follow and near historical and architectural points of interest. The guide is confined to the grid of easily recognizable, and walkable, city streets. Hare notes that there was an article in the *Toronto Leader* on February 29, 1876 titled "Covered drain to be constructed on Queen Street to replace the gully now existing between Spadina and Beverly," and that this could date the burial of the creek. Sewage from houses at this time flowed into nearby waterways, so many of the creeks were converted into sewers to contain the waste. Garrison Creek is a good example of this, as there are places in the city where you can listen through manhole covers and hear the rush of the water. But the invisible creek wasn't converted into a sewer. Instead, the sewers around this creek were laid in a grid that followed the streets. This makes sensing the path of the creek more of a challenge.

The second tool I used to get to know the creek was *Lost Rivers of Toronto's Disappearing Rivers* tool. It is an interactive map that has sliders that allows users to see when different buried creeks in the city were last recorded on a map, overlaid on a

Figure 14. (Top) Willow in laneway west of Markham St and south of College St, June 2021.
Figure 15. (Bottom) Willow trunk compared to width of Honda Civic, June 2021.

modern Toronto map. It shows that the invisible creek, or Russell Creek, was last seen on a map in 1901. This was a more detailed representation of the creek, not confined to the city's grid. This map shows that the creek started near Ulster and Markham, just south of the willow at Harbord and Markham. As I walked this path of the creek, I saw there were many more willows. More indicators of underground water. Just south of College, in a laneway west of Markham Street, there is an enormous corkscrew willow that grows behind an open garage (see fig. 14, 15). After two years of marvelling at it and attempting to estimate its size in comparison to the vehicle parked in front of it, I finally had the opportunity to get close and measure it to calculate its age[8] I found it is roughly 56 years old. Corkscrew willows have a typical lifespan of 30-40 years(Martin), it is remarkable to me that this tree can thrive in an urban environment in this way. I believe this is thanks in no small part due to the support of the invisible creek.

From here, I scoured the city's archives for historical maps, detailed fire insurance maps, birds eye view illustrations that might show the creek (see fig. 16), potential photos or illustrations of the creek. I identified the building plots the creek had flowed through to get a sense of the path of the creek. I traced the size of the gully of the creek along Bellevue Avenue as it appeared on Browne's *Bellevue Estate* map and compared it to the size of the building plots (see fig 17). The building plots in this area are 50 feet wide (Hudson, 8), and I estimate the gully to be about the same width, with the waters about 1/5 that, about 10 feet.[9]

8 It was 280" around, with a diameter of 89", the age is calculated by multiplying this by the growth rate of a corkscrew willow tree (Purcell, Martin),

9 This is not really an accurate way to get the sense of the size of the creek, the interest of the map maker is not in depicting the creek but in selling building plots. However, the only other information I could find to base the historic size of the creek on was the fact the Spadina Brewery used its waters to make beer in 1837, meaning the creek at this time was large enough to support some industry (St John).

Figure 16
Plotting historic creek presence using Gross' 1876 *Birds Eye View of Toronto*. Street names added by me. Small circles trace the path of the creek. Bottom circle highlights the area around Spadina and Beverely where the creek was reportedly buried in 1876 (Lost Rivers). Top circle highlights an area in Kensington Market where the creek is drawn in the image. Not all of the creek was buried at this time, and the area around Palmerston and College had not been built up yet.

Figure 17
Plotting the path of the creek through Kensington Market using Browne's 1869 *Bellevue Estate* map and Google Maps. I identified the building plots on the Bellevue map and how they correspond to existing buildings in the area to get a sense of a possible way of navigating the creek. Blue line represents the path of the creek, pink line represents a rough possible walking path. Includes rough estimation of creek gully width relative to building lot size.

Using historical maps (Philphotts, Fleming, Dennis, Brown, Fisk), the *Lost Rivers of Toronto's Disappearing Rivers* tool and *Google Maps*, I traced multiple paths of the creek onto my own map (see fig. 18).[10] On the accuracy of recording the paths of Tkaronto/Toronto's historical waterways, Wendy Smith writes "waterways shift constantly at the mercy of storms, ice, and heavy winds — so it's not a surprise that mapmakers working in different decades drew different waterway paths." This tracing of the movement of the creek over time makes me think of the agency of the waterway, and the agency that it continues to express.

In walking the creek, I know I can feel its presence, but I find myself contining to come back to Heywood, mentioned earlier as walking the creek and stating there is no longer a creek along its path, who writes that "there might be slight minima on the landscape… [that] seems to be for local drainage. It all just slopes down with the street grid, into sewers that go to the lake." How much of the presence that I feel is based on memory rather than the materiality of place? How much influence does the creek have on the landscape? Does the slope of the creek still influence the flow of water on the land? Are the waters that gather in gutters and puddles still the waters of the creek? To investigate this, I followed Dan Coe's tutorial on creating a relative elevation model (REM) in geographic information system software based on a digital elevation model (DEM) of the area. The DEM is a relief map gathered by lidar, a type of laser imaging, that shows geological information about the form of the land that would be otherwise difficult to see because of structures and vegetation. Coe explains that DEMs measure elevation from the downstream portion of the river, whereas REMs measure elevation from the centrepoint of the waterway. In *"I Can't Get No Relief—Mapping Flat Places,"* Coe demonstrates REMs makes it easier to understand the impact of waterways, including historic waterways, on surrounding areas of the land even in relatively flat

10 The work of Nathan Ng and his *Historical Maps of Toronto* website was invaluable to this research. He articulates his motivation for the website as a desire to make the public domain maps found in archives more technologically available and as an additional access point for realizing these maps exist. It was beyond helpful to me in identifying, navigating, and downloading useful maps.

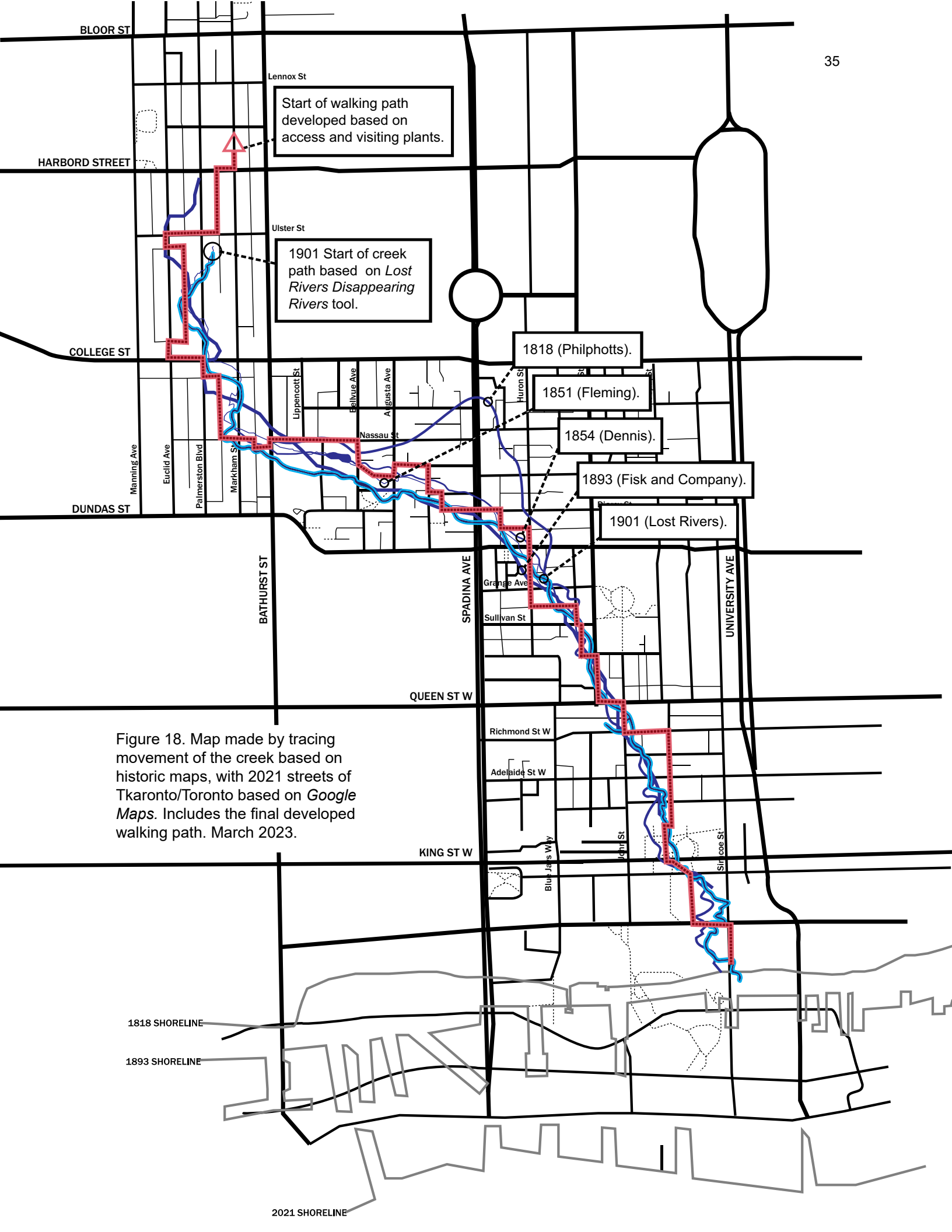


Figure 18. Map made by tracing movement of the creek based on historic maps, with 2021 streets of Tkaronto/Toronto based on *Google Maps.* Includes the final developed walking path. March 2023.

areas.[11] I downloaded a DEM tif file of the area from Equator Studios, with the lidar data sourced from Ontario Ministry of Natural Resources and Forestry, identified the high and low elevation points of the path of the creek, and applied a colour ramp (see fig. 19). With the contrasts of the colour ramp the variations of elevation made by the creek are faintly visible. I then processed the DEM file into a REM file, drawing the centreline of the waterway based on my research of the paths of the creek and the changes in elevation I could see in the DEM (see fig. 20).[12] This makes the elevations changes caused by the creek stand out in contrast to the surrounding areas. From this, I learned that the creek still has a clear impact on the landscape, and that the slope of the creek does influence the flow of water on the land. This supports my argument that the water that gathers along the path constitutes the present waters of the creek, and that the creek continues to support interconnected ecological beings. However, it does seem that the southern portion of the creek, where the city is more built up,[13] has fewer variations in elevation.

These historic and data based mapping exercises expands my perspective on how and where to sense the invisible creek, but my primary means of sensing is through walking. Throughout this research, I have been walking the creek. At first, my walking focused on getting to know plants that grow around it. Learning how to identify plants using phone apps like PlantNet and iNaturalist, that allow you to take a photo of a leaf or bark or a fruit and provide suggestions on what they might be, which you can then share with others. I developed an affection for certain plants, like mulberries with their multilobed leaves and burdock for the way it grows up through cracks in the concrete to be great bushy tall beings. I learned how to make lake pigments (Kebelmann) and walnut ink (Logan). I built a rough a binaural sound recorder, and walked through a summer storm, and listened to the water that was becoming the creek. I followed

11 Not that Tkaronto/Toronto is flat. Besides the ravines and waterways carved by receding glaciers, the elevation gradually rises moving north from the shoreline of Lake Ontario to meet the ancient shoreline of Lake Iroquois at Davenport Rd (Bonnell).

12 I first did this process in April 2021, but recreated it to get the images for this document.

13 As well as built down with multiple below ground parking garages.

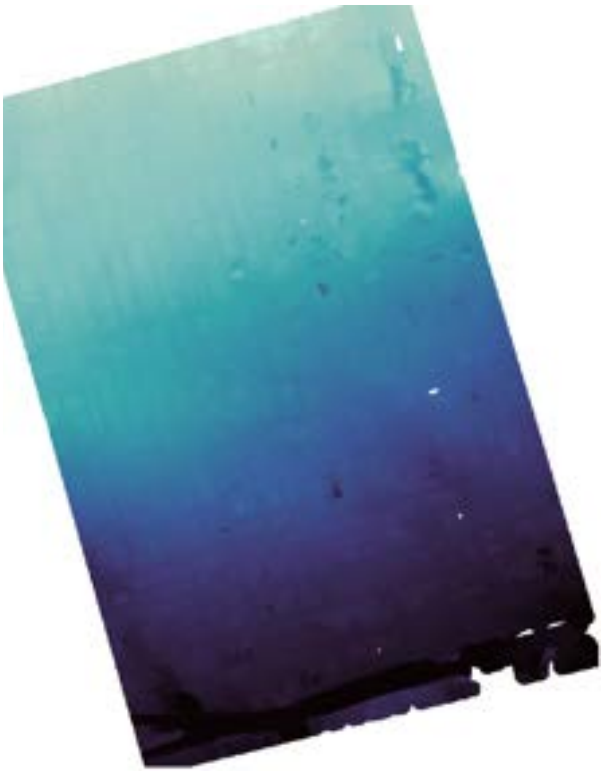


Figure 19. Digital elevation model (DEM) of the area around the creek with colour band applied showing faint variations of changes in elevation caused by the creek. March 2023.

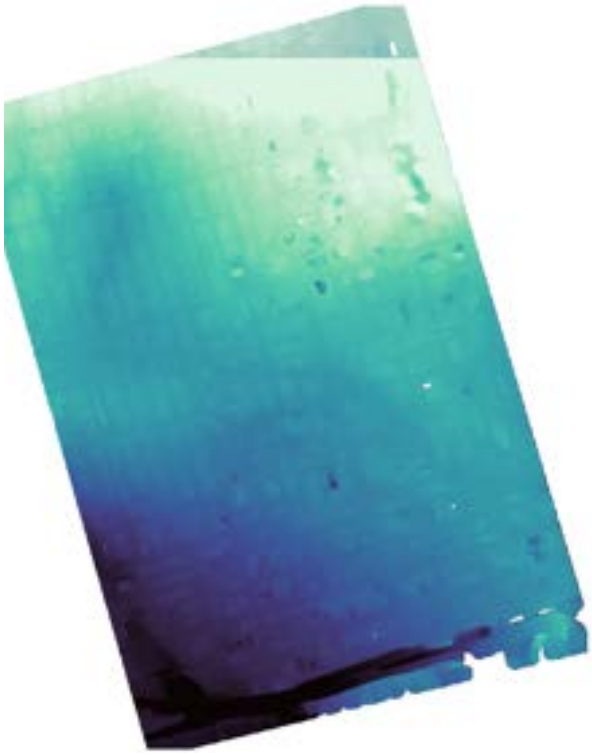


Figure 20. Relative elevation model (REM) of the area around the creek with colour band applied. Here, the elevation is relative to the centreline of the path of the creek, altering the contrast of the colour bands and making the changes in elevation more apparent. March 2023.

CLEAR Lab's recommendation of using open science hardware and built myself a DIY Microscope (Yoshinok). This early research was very much a time of wonder and joy and play. Uncertain about where my research was going, full of missteps, but enjoying the process. Becoming familiar with my new surroundings, developing a relationship with place, and clumsily getting to know the creek.

In the alleyways east and west of Palmerston, where the creek lounges, curving back and forth across the road, there are great masses of riverbank vines. I had never seen a wild grape before. I squeezed the fruit and let the juice drip down my fingers. This, too, was the water of the creek. The willows and the grapes were holding it in their bodies, holding it in their memories. I thank the creek for sharing itself with me. From here, I narrow my focus, and start researching riparian plants: Plants that grow along riverbanks and creek beds in Southern Ontario. Fortunately, many of these plants are also ones that thrive in disturbed landscapes and along roadsides, and I found that many, but not all, are abundant in the alleyways along the path of the creek.

To gain context of this perception of abundance along the path of the creek, I visited two other sites with riparian plants, Mimico Creek in Etobicoke and Snake Island, a part of the Toronto Islands.

Mimico Creek is longer and larger than the invisible creek, but in comparison to the Humber River and the Don River, two other sites I considered, it seemed relatively similar. Mimico Creek has its own fraught history with altered landscapes caused by settlement, but much work is being done to revitalize its ecosystems ("Etobicoke & Mimico Creek"). Near the bridge on The Queensway, grape vines climb tall electrical pylons with staghorn sumac at their base. North of the bridge is a pedestrian bridge that connects the residential area on the east to Jeff Healey Park on the west. The view facing south shows a wall with residential yards to the east, with a large willow tree gracefully draping its branches (see fig. 21). The view facing north shows vegetation leaning in from the east, with rocks and treefall, and light reflecting off the flowing water

Figure 21. (Top) Mimico Creek from pedestrian bridge facing south. November 2021.
Figure 22. (Bottom) Mimico Creek from pedestrian bridge facing north. November 2021.

(see fig. 22). The vegetation on the west side of Mimico Creek is dense with small paths through it, there are mushrooms and common buckthorn growing. I visited this site to get a sense of the possible size of the invisible creek, and to get a sense of what is made absent with the creek's burial. Looking at these pictures, I feel a selfish loss about the calming effect of conventional waterways, and the distance I have to travel to access a space like this. I feel a loss for the invisible creek and the ecosystems it struggles to support in its dense urban environment.

Snake Island is an island on the north side of the Toronto Islands. It's relatively small but more naturalized when compared to the bigger islands. The north end of the island has a small beach with an excellent view of the Toronto harbour. The vegetation on this island is dense, with a single path through the centre of it from the south to access the beach on the north. The walking path is tight, wide enough for one person only. Goldenrod, buckthorn, virginia creeper, willow and riverbank grapes are everywhere. Fall grapes vines scaling the tallest of trees. Deep red virginia creeper with vibrant foliage, looped and looped and looped around branches, draping softly over others, lazily covering the ground. Little blue fruits, in clumps, in clusters, hanging daintily or bunched around a branch (see fig. 23-26). I venture to taste one, picking a fat grape. Thick skin, sour taste, bulky seed. I visited this site to get a sense of how the plants I recognize on the path of the invisible creek grow without the limitations of the human built environment, and am struck by how literally entangled they are when they are permitted to grow together. When looking at these pictures I feel a degree of joy and hope. I recognize that the echos of this entanglement in the plants that grow along the invisible creek are inherent in their beings, that they are able to find the water that the creek gathers.

Figures 23-26. Photos from Snake Island. Clockwise: Grape vines climbing a tree. Virginia creeper. Riverbank grape fruits. Grape vines draping on trees, crawling as ground cover. October 2022.

Two colleagues from my cohort, artists Naomi Boyd and mihyun maria kim joined me in a collaborative walk. Based on the map with tracings of the creek's movement over time, I prepared and a map to guide us along our walk (see fig. 27). It has a legend that indicates where the willow trees and riverbank plants grow, as well as landmarks for orientation and points of interest as elements of counter-archive. We walked the creek in two sessions, north of Queen in the first session and south of Queen in the second, for about three hours per session. I guided them along the walking path I had developed that was closer to the path of the creek, with the help of riparian plants, down streets and through alleyways, parking lots, and parks. I shared with them my knowledge of the creek and the plants I had been visiting. Naomi shared with us their own making-while-walking practice by braiding day lillies and showing us how to identify them, and told us about their family history in the neighbourhoods around the creek. Maria discussed the feelings of loss and longing as she related to the creek, and and her shift in perspective of the urban context, "the knowledge of us walking on this creek made me perceive this place as being lush." We each visited the creek individually after our walk, and created a collaborative miroboard map documenting our walk. We created a collection of individual zines, each focusing on a different area and aspect of the creek (see appendix A).

This collaborative walking project came to be about the layers of encounters along the waterway. This walk held a lot of firsts. It was the first time any of the cohort had met in person, classes were still being held online. I still felt mentally confined to a geographic bubble, and limited by chronic pain, so I had not yet walked the creek south of Queen. This part of the city is more overbuilt, with few alleyways for riparian plants to grow in. Empty lots were parking lots, well paved over with asphalt. We sought out signs of the creek together. Dips in concrete, echos in architecture. In Simcoe Park there is a granite sculpture, perhaps a seating arrangement, with no plaque, that we pondered could be a homage to the creek (see fig. 28). There is a bronze plaque of the original

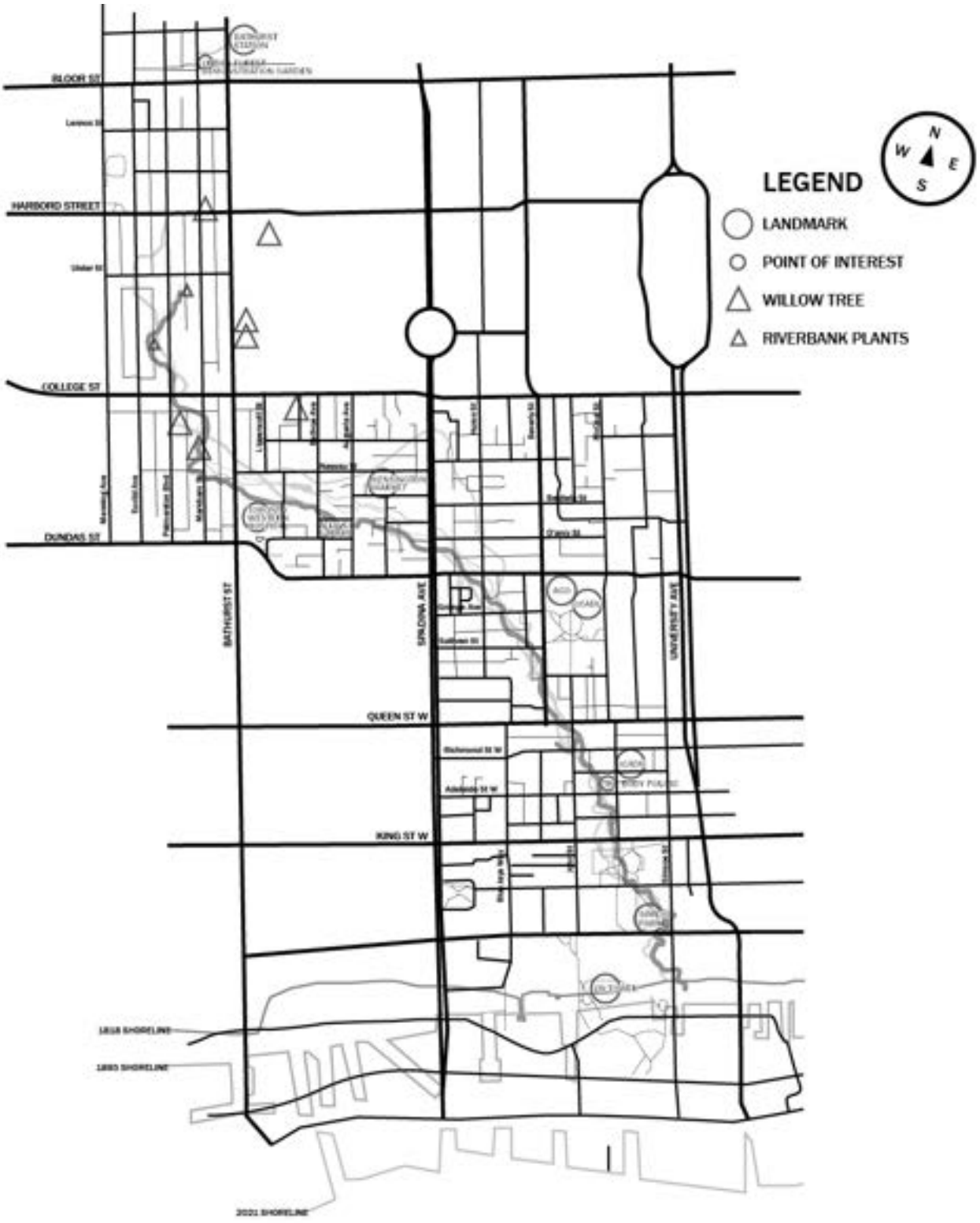


Figure 27. Early development of creek map, with legend for points of interest and vegetation to help guide Naomi, maria and myself along our walk. October 2021.

Toronto shoreline with the buried creeks included (see fig. 29). At Front Street and Simcoe Street, there is a general information sign and map, discussing the site of the third parliament buildings. It includes a painting by John George Howard of the buildings with a bridge, with children and dogs playing in the invisible creek flowing underneath (see fig. 30).

In the lower Simcoe Street underpass, there are two murals by Métis, Anishinaabe, and Danish artist Tannis Neilson. The western wall, *'N' gekaajig kidowog (My Elders Said)*, is dedicated to Indigenous Elders in Toronto, and the eastern wall, *Gchi-twaa-wendan Nibi (Honour the Water)*, is dedicated to water and the water walkers such as Grandmother Josephine Mandamin (see fig. 31). In an interview with Erica Commanda, Neilsen says that the underpass flooded the night they started the mural, that the flood was a reminder that water is a force of nature.

The Lower Simcoe Street Underpass is at the site where the creek meets the original shoreline of Lake Ontario. The waters that gather here are waters that would have been the waters of the creek before settler development, and I believe continue to be the waters of the creek. That this flooding is an expression of the creek's resistance to settler colonialism and capitalism's perception of control. It is fitting that there is a mural here that honours the water, Grandmother Josephine Mandamin and the water walkers. Mandamin was an Anishinaabe elder and activist who walked the perimeter of the Great Lakes to bring awareness to environmental pollution of waterways and water quality rights in Indigenous communities (Gursoz). In Anishinaabe cosmology water is a living being, so during the walks, when Mandamin crossed a stream, she stopped to offer the waterway tobacco to honour the water. When I count the times I cross the creek in a day, I think of her work. As the settlement of Tkaronoto/Toronto expanded north, the invisible creek and other waterways were treated by settlers as a resource for industry and a path for waste to flow through. This careless treatment of water had an impact on residents by contributing to the spread of cholera, and in 1847, the

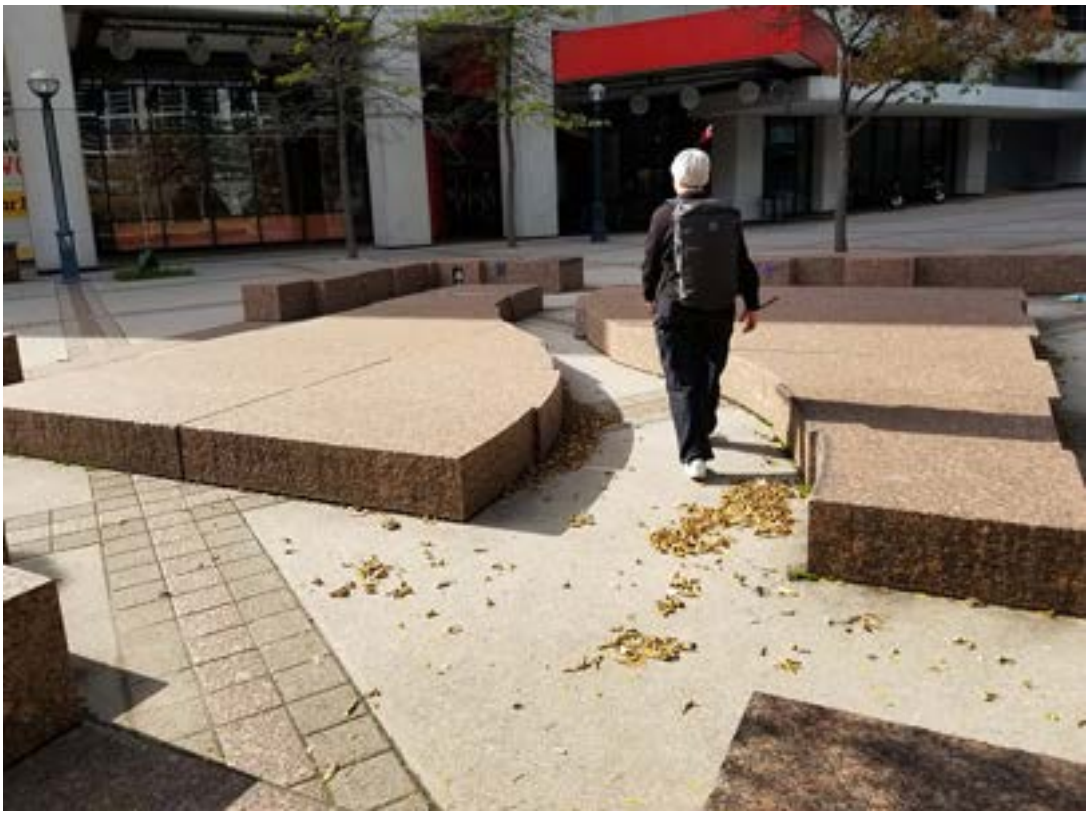


Figure 28. (Top) Naomi with sculpture, a possible homage to the creek. October 2021.
Figure 29. (Bottom) Bronze map with waterways and shoreline. October 2021.

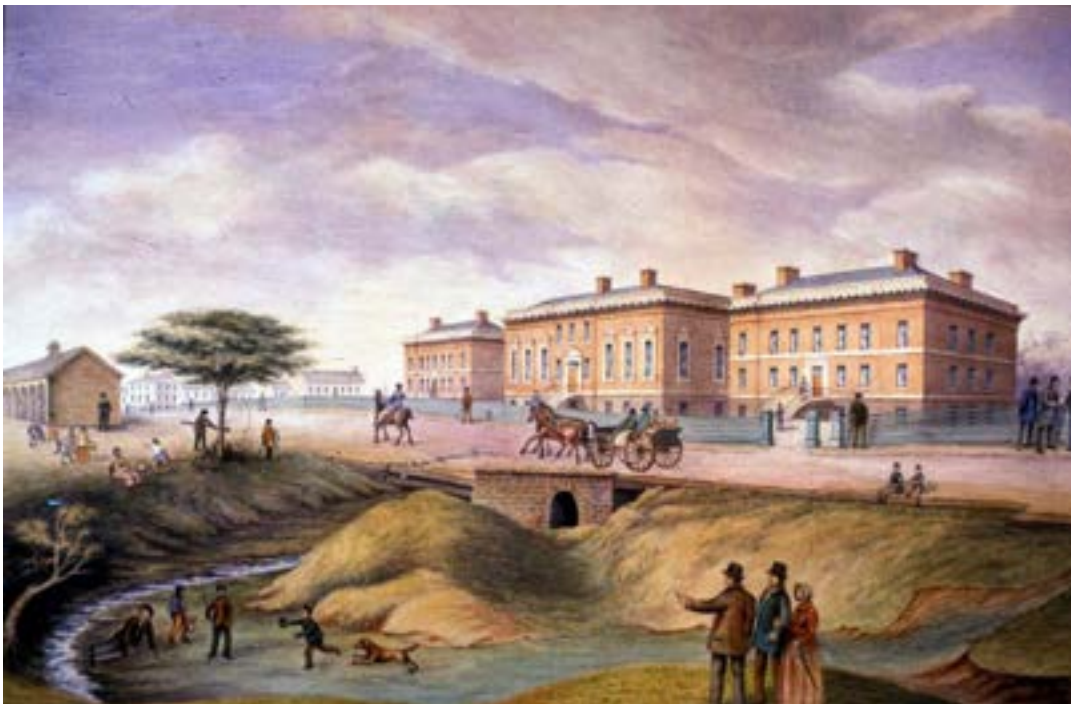


Figure 30. (Top) *Third Parliment Buildings of Upper Canada* by John George Howard, a painting of the creek running under a bridge between John and Simcoe Street in 1834. An image of this painting is displayed on an information board at Front and Simcoe St.

Figure 31. (Bottom) Mural on the eastern wall of the lower Simcoe St underpass, *Gchi-twaa-wendan Nibi (Honour the Water)*, by Tannis Neilson. October 2022. (Still from video).

Protestant Orphans Home was built near Sullivan Street, on the path of the creek, now Orphanage Mews (Lost Rivers). The waterways were buried in part to attempt to contain the impacts of this carelessness. This treatment of water is still ongoing, with extractive industries polluting the water, poisoning the land and Indigenous communities. When water is thought of as a resource, as a tool of capital for progression and growth, it is a dangerous path. As the climate destabilizes, there will be a reckoning. The flooding of the underpass, built too low at the site where the creek and the lakeshore meet, is a small sample of this reckoning. The solution that is needed is not in building infrastructure of pumps to remove the water from the underpass when it rains (City of Toronto), but a cultural shift of ways of relating and being in the world.

3.2 Pigments

The approach I take to pigment making is influenced by Tilke Elkins' *Wild Pigment Project*, which provides resources on pigment making, a guide for reciprocal foraging and collects artists who work with pigments in a directory of "pigment people". Elkins defines wild pigments as botanical, mineral and waste stream, including those left in urban environments by humans such as cigarette butts and rusty nails. Reciprocal foraging, as defined by the *Wild Pigment Project,* is a guideline foraging for pigments in a way that is respectful to the land, communities and health. It emphasizes several key points; recognition that the land is alive and foraging is reciprocal, awareness of place-specific treaty-defined stewardship responsibilities and Indigenous laws of the land, dialogues built with place through sensory observation over time, and a commitment to gathering only what is necessary for a specific project. Elkins also suggests giving thanks to the land through celebration, meditation, or a biodegradable offering of personal/cultural significance, and emphasizes the importance of sharing the knowledge gained from working with pigments.

In my practice, I forage in urban environments for material to use in pigment making as well in printmaking, and I take on Elkin's recommendations for reciprocal foraging in foundational ways. The concept that the land is alive is integral to this project as it is in collaboration with the invisible creek. Foraging as an exploration of collaboration draws from Tsing's writing on matsutake mushrooms, and in my practice it acts to disrupt linear conceptions of progress versus ruin and instead engages with the recognition of multispecies world making (22). The material I gather for pigments is based on plants that grow along the creek, that live as interconnected beings with it, and through foraging material and working with them I participate with the creek in making worlds. *The Dish with One Spoon* wampum agreement describes my responsibilities as a treaty person, based on it I recognize that the land is shared, and that this collaboration with the creek is an act of generosity on the part of the land. It

is my responsibility to gather as to not damage plants and ecosystems, only take what is needed in the time I can use it, and to leave abundance for others. In practice, this means I am attentive to the appropriate times to gather different materials, only gather what can fit in a ziploc bag, and pay attention when the squirrels tell me I am taking too much. It also means that if a plant is present on the creek, but not abundant enough to gather, I gather from a different site where it is abundant, even if away from the creek. Regularly visiting the creek through the walking practice described in chapter 3.1 is how I build dialogue with place. I have been walking the creek for almost two years, through the cycles of seasons, well beyond the intention of foraging. I give thanks to the land in a private practice, and share what I have learned through publishing this document and public exhibition. Following these guidelines contributes to the work of ensuring that the collaboration between myself and the creek is not extractive. It creates space to recognize the labour that the creek does to support the vegetation that grows along its path without appropriating that labour, and attends to the ongoing well-being of the relations it nurtures (Neimanis, 220).

I understand the power of pigments to be not about colour, but about the materiality, the world they come from, what they reveal about connections, ecologies and temporalities. These are living inks. The bottles they are stored in have eye droppers to dispense them. Over time, the sugars in the ink coagulate and thick mass is sucked up by the eyedropper. I use lemongrass essential oil to manage spoilage, but mould still grows on the surface of the ink and inside the eye droppers. This can be prevented, but allowing it to happen is a reminder of the ongoing liveliness and agency of the material.

For this thesis work, the way I choose what plants to work with is based on a few criteria. Ideally, they are non-invasive riverbank plants that grow along the path of the creek or nearby, and are abundant enough that I can responsibly forage them. This criteria gives me parameters to work within, but it is also flexible, and in some areas I

Figure 32. Ink swatches. Clockwise from top: Riverbank grape ink. Copper oxide ink. Buckthorn berry ink. Virginia creeper fruit ink. Goldenrod ink. Walnut ink. Trumpet flower ink. Willow bark ink. Staghorn sumac ink.

do deviate out of curiosity. The plants that adhere to this criteria are willows, riverbank grapes, trumpet vines, virginia creepers, and goldenrods. Sumac and buckthorn drive me because of their rarity along the path of the creek. I also experiment with black walnut and copper oxide. These inks results in a range of colour, each with their own characteristics (see fig. 32).

Willow (see fig. 31)
Gather sites: Multiple sites along the path of the creek, also willows on the Toronto Islands

As willow trees are indicators for hidden water, I imagine them sucking up the water of the creek and holding it in their beings. I imagine that, when these trees fall, they will release the waters of the creek, and those waters will seep through the cracked foundations of the buildings nearby. The private yards that impose themselves as boundaries to the willows and my visiting will become soggy, with basements mysteriously flooding as other buried creeks in the city do.[14]

Riverbank grapes (see fig. 32)
Gather sites: Laneways east and west of Palmerston Boulevard. Railway corridor near Christie and Dupont. A donation from a neighbour.

The grapes I met along the invisible creek are concentrated around Palmerston where the creek bends back and forth. The creek is leisurely here, wallowing in comfortable bends, luxuriating to and fro, and nurturing soggy grounds. When the fruits start dropping on the concrete, they leave splatters and attract wasps. A squirrel chatters at me from the powerlines overhead, a vocal reminder about my responsibility to share the abundance, to only take what is reasonable, and that others rely on this member of the ecological network to feast.

14 To the east of the invisible creek is Taddle Creek, which is recognized in neighbourhood lore for its flooding of basements (Chernos).

Figure 34. (Top) Willow at Harbord and Markham St. June 2021.
Figure 35. (Bottom) Grapes in Wayne & Shuster Ln. September 2021.

Trumpet vines (see fig. 33)

Gather sites: Laneway west of Markham Street, south of College. Roadside east of Spadina, north of Dundas.

Unlike many other plants I am working with, in which material is gathered at a specific time, the flower of the trumpet vine are gathered continuously over the summer season as the vines release them to the ground. I visit every few days for two to three months. Trumpet flowers are named for their shape, and are bright orange at the bowl and brassy yellow in the throat. They turn a dark red the longer they are on the ground, becoming slightly sandy, and are always accompanied by a few ants. Not enough ants to say surrounded by, but common enough that, with repeated visiting, picking up flowers, and picking ants out of flowers before putting them into ziploc bags, they are notable. These ants are a demonstration of the network that exists with the creek. The vines likely had mealybugs living on them. Mealybugs secrete a substance called honeydew. Ants love honeydew, so ants love mealybugs, and they gather nearby to protect the mealybugs, and the trumpet vines, from threats.

Virginia Creeper (see fig. 37)

Gather sites: Multiple laneways.

Virginia creeper is a vine that grows abundantly along the creek and makes cold, hard concrete cool and lush. Admittedly, I was advised not to make ink from this because it is somewhat toxic, but I was so taken with the plant that I felt compelled to. Its sap and fruits contain oxalic acid that can cause kidney damage when consumed by humans. When experimenting with the ink a year after I had made it, after it had some time to concentrate, I found that the ink grew into a three dimensional shape where it had puddled as it dried. One of the jars I kept it in had a metal lid that deteriorated and had tiny spirals of rust emerging from it. This is the oxalic acid crystallizing, it feels like a carry over from the persistent character of the plant.

Figure 36. (Top) Trumpet vines in laneway South of College St, West of Markham St. July 2022.
Figure 37. (Bottom) Virginia creeper in laneway South of College St, West of Markham St. June 2022.

Goldenrod (see fig. 38)

Gather sites: Multiple laneways.

Goldenrod is second only to virginia creeper in its abundance along the creek. It is a herb that grows up to 3 feet tall, often in clusters. In the fall its yellow flowers go to seed and burst into brown fluff. It does well in disturbed landscapes, sometimes supporting the creation of more ecologically sound environments. It sprouts up even in the cracks of asphalt. It is one of the few kinds of vegetation that can be found even in the overbuilt environment around Richmond and Duncan Street. When creating ink, the pleasant smell of it stayed with me throughout the day. I found I was carrying goldenrod in my nose down the elevator, to the food court, through my lunch in the park. Small particles of the creek being held at the edge of my awareness.

Staghorn Sumac (see fig. 39).

Gather sites: Absent from the invisible creek, some gathered from Mimico Creek.

Every venture along the creek, I carried the thought of sumac with me. It thrives in disturbed landscapes and can be found in abundance along busy roadsides and railway corridors. When I read this, I was certain I would find sumac along the invisible creek. This was not the case. Every time I thought I found sumac, instead, it was a tree of heaven. The tree of heaven is an invasive species that overtakes areas with fast growth, root suckers and chemicals that slow the growth of other plants. North of the headwaters of the creek is a small patch of fragrant sumac, but I could not confirm any sumac otherwise. I did make ink from some gathered at Mimico Creek. I scarred the seeds with hot water and distributed them along the path of the creek, hoping they would take root and I would see sumac entangled with the other beings of the creek. This is a form of guerilla gardening, an attempt to establish local plants that are absent from the creek in a vacant plot of land along its path (Harden and Bromley-Dulfano). In thinking of reciprocal relations with the creek what could I do, other than following

Figure 38. (Top) Goldenrod in Via dei Giardini Ln. August 2022.
Figure 39. (Bottom) Staghorn sumac at Mimico Creek October 2021.

reciprocal foraging practices, to give back? The sumac did not take root, maybe it was not the place for it.

Common Buckthorn (see fig 40).
Gather sites: North of the creek's headwaters at Palmerston Square, railway corridor near Christie and Dupont.

Buckthorn, like the tree of heaven, is an invasive species. During this research, I found it hard to be mad about invasive species. In "Invaders," Sarah Glidden discusses the term non-local beings rather than "invasive," emphasizing that these plants didn't choose to be here, it's natural for them to disperse, and over time plants will naturally come to some kind of balance. But some non-local beings reduce biodiversity and upset the systems of local species that adapt to live with one another. In an urban context, such as downtown Tkaronto/Toronto, it's hard to be mad about a species like the tree of heaven once you realize how big they get, how many of them are, and their contribution to the city's green canopy, which is important for reducing heat island effect. Anna Tsing writes that to "to appreciate the assemblage, one must attend to its separate ways of being at the same time as watching how they come together in sporadic but consequential coordinations" (158). This research isn't about ecological conservation, but being attuned to the relations of the creek, so I accept non-local beings in this collaboration and the generative tensions that they contribute.

Black Walnut (see fig. 41).
Gather sites: Wales Ave in Kensington Market

Black walnut ink began the process of this pigment exploration, it was my first venture in making ink. The tannin filled husks of fallen walnuts is a solid introduction to inks and modifying them with additives like iron. Easy to gather in abundance, the nuts can be removed and given back to the land for animals to eat. I used MapTO's

Figure 40. (Top) Common buckthorn near Palmerston Square. September 2022.
Figure 41. (Bottom) Walnuts being made into ink. October 2021.

interactive Fruit Trees of Toronto map to find walnut trees near the path of the creek. This ink, although temperamental, showed me the potential of collaborating with the creek through water marbling with water based inks.

Copper Oxide (see fig. 42).

Gather sites: Recycled materials

This is a departure from the vegetation, I think of it as representing the human element in relation with the creek. This ink is made using copper scraps soaked in vinegar and salt over time. Copper can be foraged along the creek by chance from the ground during a house renovation, or from appliances left to be picked up by the city garbage disposal. It brings to mind the plumbing that carries water to and from homes. It is a toxic ink with a strong chemical smell. I have enjoyed watching it develop, but have been reserved about experimenting with it extensively.

Figure 42. Copper oxide brewing. February 2023.

3.3 Printmaking

Returning to the centre of the research, the question of what processes allow the creek to express its agency through printmaking stands at the forefront of my mind. Walking, foraging and pigment making practices are some of the ways in which I get to know the creek, and are a path through which the creek can share ideas and participate in making, but in terms of making processes, my research interest is specifically in printmaking. My experience with printmaking is primarily through DIY screen printing and publishing zines, approaches that value co-opting traditional processes to make them accessible and facilitate the sharing of ideas. During this research, my interest has diverged from this in a way that connects to thinking and living through precarity. This research began during the COVID-19 pandemic, as I felt the effects of social isolation and collapsing supply chains, I wondered what processes do printmakers have access to when they cannot go to studios to use shared equipment, when suppliers can't ship out specialized materials? Approaches like DIY screenprinting and zine publishing didn't feel like processes the creek could participate in. This brought me to my primary focus on foil lithography, an accessible and sustainable approach to lithography, and a process that I found allowed the creek to directly influence the process through tusche.

To thoroughly explore the creek's participation, I experiment with additional accessible and sustainable printmaking processes. Developing oil based inks allowed me to bring the interconnected world-making of the creek through pigments to foil lithography. Water marbling demonstrates an insistent response from the creek in a process that I feel is both compelling and humbling as an artist. A process of suminagashi on the site of the creek explores the influence of the energy of the site of the creek.

Before engaging in this research I did not know much about lithography. My background is in graphic design, and my exposure to lithography was through the commercial process of offset lithography, the primary way mass publications are printed today.

As I learned more about traditional and alternative lithography, I became interested in the roles water and invisibility play in the process. Lithography works on the principle that water and oil do not mix. A greasy substance is used to make marks on the plate. This greasy substance usually has a pigment in it, but that isn't what makes the mark in the print: the grease is. The plate is buffed with gum arabic, and is then etched using an acid. These processes make the non-grease areas hydrophilic. Water is attracted to these areas, and repelled from the drawn areas. The marks made on the plate are then wiped away, made invisible, only to be revealed again with water. The water creates a barrier on top of the non-drawn areas, and when oil-based ink is rolled onto the plate, it only sticks to the areas without water.

Because lithography is a process sensitive to grease, it is also sensitive to the oils of the body. If you touch a plate with your bare hands while working on it, it will leave a smudge that is invisible until you process and ink up the plate. My affinity with the creek is related to the tension between presence and invisibility, speaking to my experience with invisible illnesses. Experiences with medical imagery testing have given me a criticality of privileging the visible, because of this I am sensitive to the tactility of this process and the attention to relationality with material it allows. Following Bellacasa, through this touch I am accepting the "invitation to participate in [reality's] ongoing redoing and to be redone in the process" (117).

I was drawn to lithography because of Louise Wallendorf's surf lithography process. Wallendorf places the plate at the edge of a body of water, and allows the plate to dry leaving behind residue of sediment and salt. She then adds tusche–a mixture of tallow, grease and pigment–to dry on the plate at the site. The emphasis on the

relationship with water in surf lithography was interesting to me and I wanted to see how this could be applied to the invisible creek. How do you gather water from an invisible creek? I gathered water from puddles along the path of the creek to evaporate on the plate as Wallendorf does, in order to engage with this question.

In thinking of my relation with the creek, I am also thinking of the water that is diverted into the city's sewage system. Out of concern for the future of my materials, and thinking about precarity, I experiment with accessible, less toxic lithography processes. Kitchen lithography, developed by Emilie Aizier in 2011, uses cola to etch a plate made from aluminum foil. Lemon etch lithography, developed by Carolyn Muskat and Emma Sattler in 2020, addresses technical challenges in Aizier's process to allow for tonal variation by buffing in gum arabic. There are artists, such as Valerie Syposz, who achieve tonal depth with kitchen lithography by using multiple plates to create layers, but successfully working with tusche requires tonal variation on a single plate. Tushe is interesting to me not just because of its use in Wallendorf's surf lithography, but because of its reliance on evaporation, its relation with the plate, and its similarities to the behaviour of the creek. The plate's surface is made rough, which allows the material of drawing materials to adhere to the raised areas of the material. The tusche is placed on the plate and allowed to evaporate. The grease settles in the groves, the low areas, of the plate and creates lines of reticulation.

In doing this research, I engage with variations on these less-toxic lithography processes, and refer to my approach as foil lithography. Kitchen lithography and lemon-etch lithography both use aluminum foil, but are named for the acids they use to etch. In my process, I choose materials to work based on affinity and the potential they either do, or do not, bring for collaboration with other-than-human beings. The grease in tusche comes from sheeps tallow, and gum arabic is the sap of an acacia tree, both potentially collaborators. I engaged in experiments with stone lithography but found the character the stone brought in its materiality was too strong (see appendix B).

Lithography stones are made from limestone, which is made up of corals, shells and fossils, the vestiges of sea life. As I watch the smoke rise from the nitric acid etch, I find it impossible not to think about the remains of this sea life being burned away when working with stone, and feel the non-organic qualities of aluminum foil helps maintain my focus on the agency of the materials leaving marks on the plate, rather than the plate itself.

This focus of agency of material on the plate brings me back to the water of the creek. In *Bodies of Water*, Nemanis says “what counts as water is changeable, and that water has a history. It is a substance, but it is also an idea” (15). What counts as a creek is changeable. What water on the land would form the creek if it was allowed to emerge? What are the waters that constitute the water of this creek? Heywood, mentioned earlier as walking the creek and stating there is no longer a creek along its path, writes that “there might be slight minima on the landscape… [that] seems to be for local drainage. It all just slopes down with the street grid, into sewers that go to the lake.” Why wouldn’t the waters that gather in gutters and puddles count as the waters of the creek? Not satisfied with this assumption, I wondered if the slope of the creek was still present in the landscape, if the slope of the creek still influenced the flow of water on the land. Using lidar data and following Carto’s tutorials on creating relative elevation models described in chapter 3.1, I found there is variation of elevation along the path of the creek. From this I conclude that the water that gathers in areas of low land along the path of the creek, including the water that gathers in gutters and puddles, is still the water of the creek. It is the creek taking form, creating a new path at the edges of perception. I am driven by this expression of the creek’s agency. In this material research, I have learned that my interest in tusche is related to allowing for the same kind of watery agency the creek expresses on the land, but on a microscale.

After gathering water from the creek, I introduce it to the plate in two primary ways:

For the first way, I mix it with tusche in varying dilutions. Tusche is usually mixed with distilled water, so the mineral and biological content of the creek's water has an impact on the tusche's behaviour. The grease and pigment of the tusche disperse unpredictably. I use plant material gathered from the creek, like grape vines, to draw the tusche on the plate (see fig. 43). The tusche and water puddles and flows together. The plate is then left so the water of the creek can flow and evaporate as it does its work. The water evaporates and the creek remains in the air to observe. The plate is then etched, revealing the traces of how the water carried the grease and left it to rest in the grain of the plate (see fig. 44).

For the second way, I arrange material gathered from the creek such as leaves, stones, or soil on the plate and allow the creek's water to flow over the plate, contributing to the arrangement of the materials (see fig. 45). The water is given time to evaporate, and then tusche is applied to the plate. The tusche gathers around the materials, arranged by both myself and the creek. Once the tusche is dry, the plate is etched. I found this to be the most compelling process, although I did not anticipate the result. The creek is selective in its mark making, leaving ghostly traces for the print.

Lithography requires oil based ink to work. How could I unite a process of experimental printmaking with the pigments? This led to experiments with extracting oil soluble pigments from plant material. After gathering the material, I laid it out on tinfoil sheets to allow the moisture content to evaporate. I then ground the material and soaked it in heated burnt plate oil #3, a thickened linseed oil used for the base of lithography inks. This achieved a subtle tinting of the burnt plate oil. Different plant types and different parts of each plant create different variations of colour. The pigments that are drawn out with oil are not the same as the pigments that are drawn out with water. After creating drawdown swatches of each oil based ink, I selected buckthorn berry to test with foil lithography. For comparison, I created several variations of this ink. One of

Figure 43. (Top) Process of using water gathered from the creek, mixed with tusche, with a grape vine to make marks on the plate. October 2022.
Figure 44. (Bottom) Resulting foil lithography print. 8” x 6”. October 2022.

Figure 45. (Top) Soil and plant material after the water of the creek has rearranged them. October 2022.
Figure 46. (Bottom) Resulting foil lithography print. 8” x 6”. October 2022.

buckthorn berry oil based ink, one of lake pigment made from buckthorn berry mixed with the buckthorn berry oil based ink, and one of lake pigment made from goldenrod flowers mixed with standard burnt plate oil #3. The buckthorn berry oil based ink, in an experiment using snow gathered from the creek on the plate, was able to convey subtle details and tonality of the plate (see fig. 46-48). The lake pigment oil inks require more experiments. When exposed to light, over a few months, the buckthorn berry oil extraction prints fade from a pale yellow to a blush pink.Sometimes this change is described as fading, but it feels like a transformation. It reflects the ephemeral nature of working with natural inks, they are not intended to stay the same forever. Even dry on the page, they continue becoming.

Water marbling is the process that I have found to be the creek's favourite. Water marbling is based on the traditional Turkish process called erbu. Ink is floated on a bed of gel called a size. The gel is made from powdered carrageenan or sodium alginate, derived from algae, another possible collaborator. As I worked with carrageenan, I thought of the algae that grow in Lake Ontario. Inks are floated on the size, when paper is laid on them it picks up the inks and it is left to dry on the page. In this research I was interested in a specific water marbling technique that creates a pattern traditionally called sunspot or tiger's eye, but I call it dendritic marbling because of the natural branching pattern it creates. I encountered this early in my research by accident from experimenting with walnut ink and cold carrageenan size. The waterbased inks I developed are difficult to use in water based printmaking techniques like water marbling or suminagashi because the inks disperse into the water, but for some reason the dendritic pattern was achievable. A way around this would have been to use lake pigments, a process in which the pigment from the inks is precipitated out by binding them to alum allowing them to dry in granular form, but I wanted to continue to use the water based living inks that carry the character of the

Figure 47. Gathering creek water from melting snowbank. February 2023.

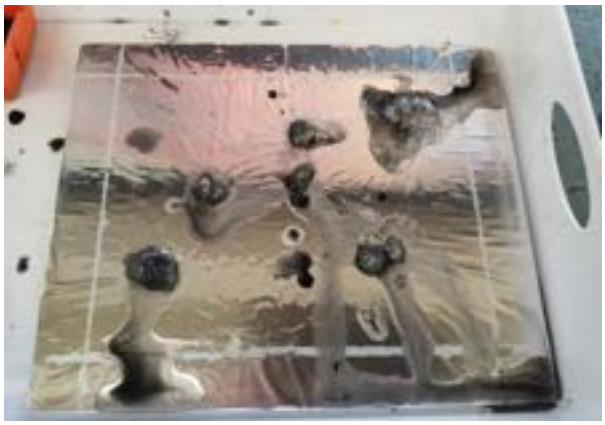


Figure 48. Tusche applied to snow on plate. February 2023.

Figure 49. Print with buckthorn berry oil based ink. February 2023.

plants from the creek. Josef Halfer's *The Progress of the Marbling Art*, describes the process of marbling in a level of detail that helped me reproduce the dendritic results. The cold temperature of the carrageenan is important, the cells of the size swell but maintain their integrity. These cells are sensitive to the acid and sugar content of the inks, over time it will cause the cells to burst and release their water content which dilutes the inks, so the work has to be done quickly. I found the creek responded similarly to this process as it does with tusche. Adding ink to the size allows the creek, in the form of the ink, to find interstitial spaces between the cells of the size, to spread and create space for itself. In this process the creek moves as it does on the land, but at a speed that is perceptible by the human eye. As the print is picked up on the page, the ink continues to disperse in the mucilage picked up with it, blurring the edges. The process of this was compelling, there are many changes in the appearance and movement of the ink (see fig. 50-52). Knowing that there would be blurring as it dried, it felt like an echo of the intimacy I have with the creek as I walk its path. The creek shows me things that are only available as the process is happening, and what is left on the page is only an ephemeral trace of the experience.

Suminagashi is a Japanese technique of water marbling. In it you use brushes to float ink and a surfactant on top of water. The surfactant–ox gall or dish soap–creates rings of negative space between the ink and a pattern emerges. The process of suminagashi is meditative and puts one into a flow state. This kind of printmaking is sensitive to the environment, to wind and breath. I used sumangashi to collaborate in two ways. First, with walnut ink, but I found it wasn't very effective, because the ink dispersed in the water. The second way was by practicing suminagashi on multiple sites of the creek in an audio/video experiment (see fig. 53-54). I was inspired by Leeay-Aikawa's research with sound, inner peace and collaboration with nature through suminagashi in her performance video *Suminagashi as Visual Nāda in High Park.* Whereas Aikawa was investigating vibrations of sound and silence, I was interested in

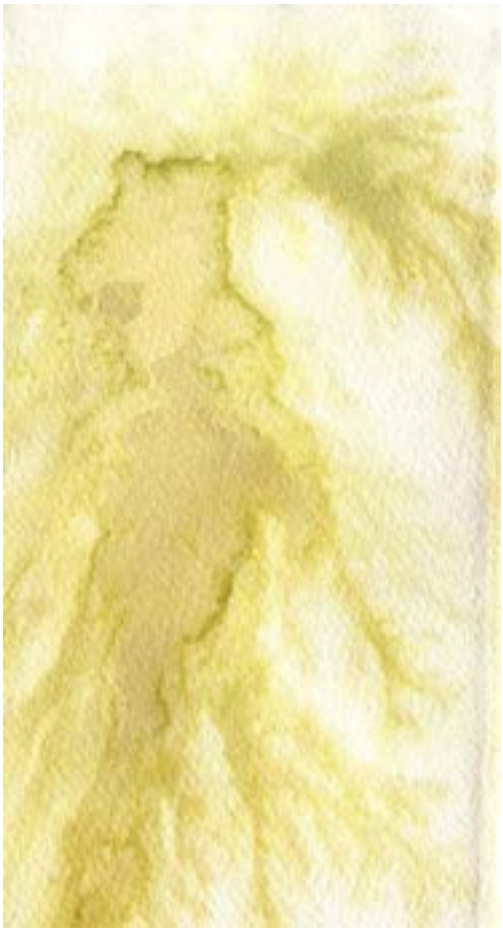


Figure 50. (Top left) Buckthorn berry ink on carrageenan size, dendritic marbling. November 2022.

Figure 51. (Top right) Print after ink is picked up from size, still wet. November 2022.

Figure 52. (Left) Resulting print after drying, the ink has dispersed and blurred as the print dried. This process of printmaking has an ephemeral intimacy. November 2022.

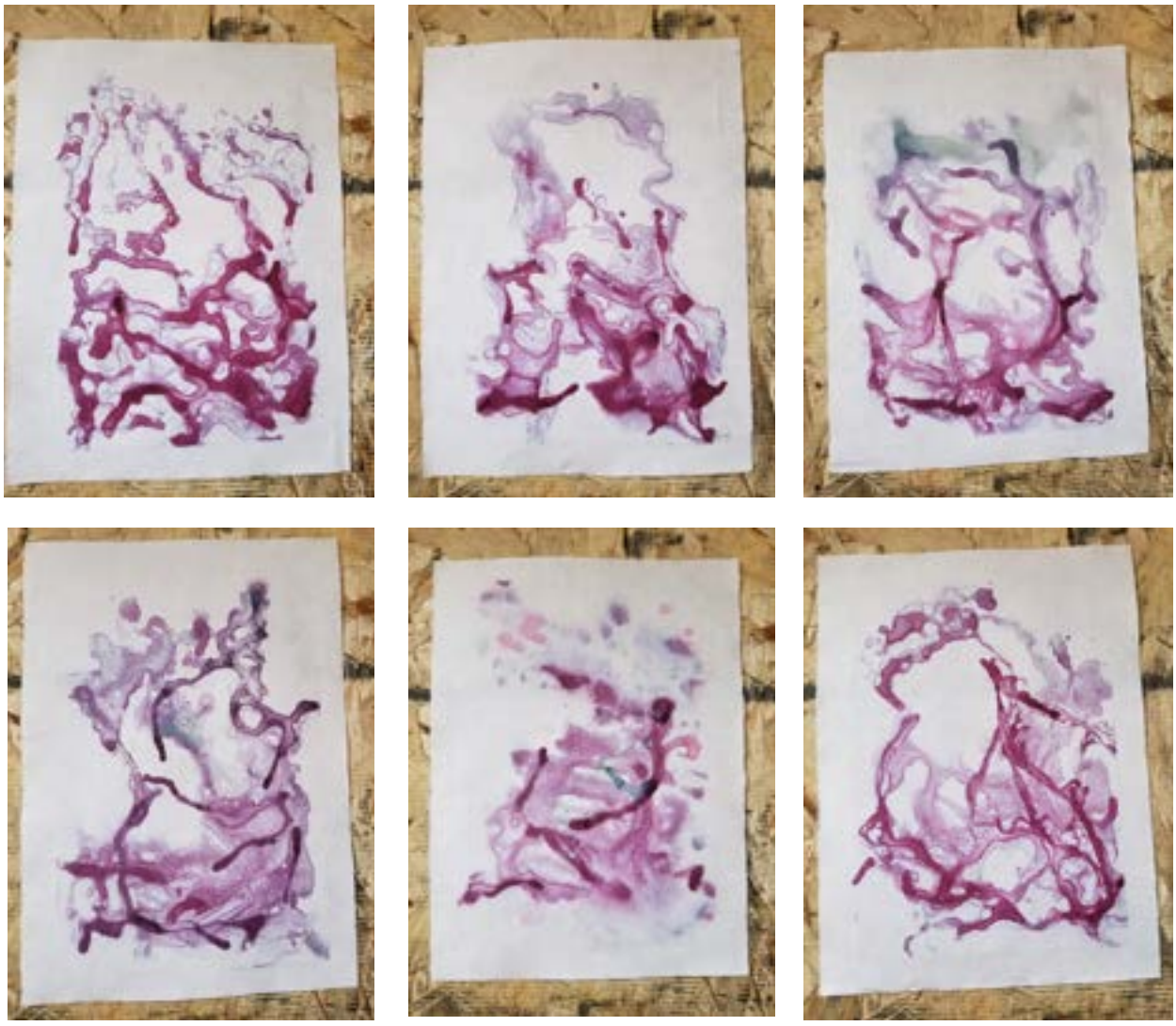
Figure 53. (Top) Still from audio/video experiment of doing suminagashi on sites of the creek. October 2021.
Figure 54. (Bottom) Resulting suminagashi print. 7” x 4”. October 2021.

finding a way of communicating being-with the environment of the creek, the impact of repetitive visiting, and the movement and energy of place. The prints that emerge are a result of this being-with.

I also experimented with monoprinting as a process for the creek to express agency in. I applied grape ink to clean Plexiglass plates and sped the drying time with a small electric dryer. This moved the ink around and created vine-like structures (see fig. 55-60). The colour of the grape ink was varied using lemon juice, an acid, to make a vibrant pink and washing soda, a basic, to make a blue. I then took damp rice paper and hand burnished it against the plate, picking up the ink in a monoprint. A year later the ink on these prints has faded slightly. I return to this approach to create swatches of the inks and interactions to display them in the exhibition. I found this process did not allow for much agency from the creek in comparison to tusche in lithography or the dendritic printing in water marbling.

Through this walking, pigment and printmaking research I have learned that the creek has an ongoing presence in the landscape. It influences the flow of water. These waters are the ongoing waters of the creek. These waters support the interconnections of other than human beings such as riparian plants and the ecosystems they support. This is the creek participating in multispecies world making. By visiting these riparian plants through my walking practice, I have gotten to know the creek and some of the worlds it makes possible.

By inviting the creek to printmaking processes, I have learned many lessons from the creek. First, the importance of patience and respect for the amount of time things take. The creek has a temporal perspective that is outside of my grasp. The creek has been here longer than me and will continue to be so long after I am gone. The creek is displeased with its burial but also in no rush to be recognized. Things take as long as they take. Bellacasa writes that we “make [time] through practices” (175),



Figures 55-60. Grape ink monoprints with PH shifts altering the colour. 6” x 8”. March 2022.

and that “making time for care time” has the potential to disrupt dominant future-focused temporalities (177). I am mindful that I can adapt by making-time and that this is a valid form of resistance.

Related to this is the importance of making time for maintenance, care and rest. The casual time spent together is valuable, this is where the relaxed sharing of ideas can happen. The time spent resting, even with no ideas, is valuable too. Periods of rest are essential parts of not only the process, but also of being. It is necessary to be able to perform the care of maintenance of communities. Recognition and maintenance of the interpermeated nature of my being, the interdependence that relied on to exist, is vital. This is where the creek shows me that there is hope, even in precarity.

Connected to making time, is creating space. Through the making research, I have found that creek is an expert in finding interstitial spaces and resting in them, as in lithography, and if there are none, it will create them to disperse into, as in water marbling. The flexibility of the size used in marbling allows the creek to demonstrate this knowledge in a timespan perceptible by me.

Although the creek, in its watery being, is fluid and disrupts boundaries, it also maintains them. The prints in which the traces it leaves are limited, as in the soil lithographies and dendritic marbling, are where I feel the creeks character is strongest. It is reserved in the knowledge it will share. Not everything is for everyone to know, it has boundaries about what knowledge it will share and when.

Chapter 5: Conclusion

I leave the studio and walk down the street. The creek passes through the southwest corner of an asphalt parking-lot-turned-event-space, the location of a future public park. Between the dumpsters, chain link fences and cigarette butts, the decaying stalks of goldenrods rest. New goldenrods are begining to emerge, they will grow tall, extending sprightly green leaves to the sun, roots burrowing to the water of the creek that seeps through cracks and into the soil.

This research contributes to understanding the potentials of collaboration with other-than-human beings. In chapter 2.2, I describe other artists, Little, Flaherty and Grier, who engage in this research. This research has similarities to their approaches in that it is based not in outcome of the work but in the relations, beings and becomings that emerge in the process of making. It has differences because it of the complexity of the invisible creek, its relations and the nature of its influence being pushed to the edge of perception. Neimanis writes “collaboration, from a post-humanist perspective, does not cling to the rocky outcrops of identity, but instead constantly creates and recreates itself and its co-labourers as a part of the currents and waves of the seas” (217). By recognizing this, and the role the creek plays in multispecies world making, using collaboration to describe the work the creek and I do together demonstrates an approach to change that comes from within, change that generates hope for the creation of other possible worlds, even in precarity.

This research also contributes to knowledge about Tkaronto/Toronto’s buried waterways. I can’t find the source for where I read this, but the city park strategy has a mandate to strive towards recognizing its buried waterways. The areas where the creek has limited impact on the elevation of the landscape, the most downtown areas, is where there is the most gestures at public creek recognition. The creek runs through Simcoe park, with some recognition of the creek through the display of John George

Howard's painting and possibly the granite sculpture mentioned in chapter 3.1. The creek runs through the park surrounding Roy Thompson Hall. There is a lot at 230 Richmond that is in the very early stages of development into a park. I have used avoiding policy and advocacy as a strategy to bring attention to the ongoing nature of the creek and the relations and world's it builds, but park policy is one of the convoluted tools that is available for creating space for the creek to be its full self. Garrison Creek and Mimico Creek demonstrate that over time it is possible to build towards revitalizing waterways, the invisible creek is no exception.

There is further research that must be done first is in finding the name of the creek. I have referred to it as the invisible creek because it has been pushed to the edges of human perception, but that is not its name. I do not think it's name should be based on human limitations of perspective. Russell Creek is not its name either. I am not familiar with naming practices, but as far as I understand, to rename something its community must be consulted. This means the neighbourhoods surrounding it, the relations that it lives with and the Indigenous communities that know this land. This would create less tension in dedicating public works to it. However this is not the only goal. Finding the name of the creek could lend it some relief in its precarity. In Miyazaki's animated film Spirited Away, a witch takes away the names of characters to gain power over them so they will do her bidding. The film culminates when Sen, the main character, remembers that she had met her friend Haku before. Haku is a river spirit that Sen lost her shoe in when she was young. She remembers that his real name is Kohaku, and he is the spirit of a river that has been buried and built over by apartments. With remembering his real name, he is freed from the witch. The imposed name of Russell Creek, and the creeks otherwise namelessness, is a limitation on the creeks being. Resolving this is a path for future research that will require community effort.

How to talk about the invisible creek in a way that honours its presence, agency and influence?

This question stemmed from the early stages of this research when I was using dismissive language to give context for the creek, its erasure, and the imposed limits of settler colonial perspective. It became important to stop this, it was disrespectful to my collaborator. By instead insisting on the creek's ongoing presence and influence, a path was opened for the creek to fully participate, and a path was opened for myself to fully acknowledge and sense the relation that I feel and am compelled by. This prevented limitations of research explorations, and helped me focus the scope of the research on the creek's ongoingness, and the becoming that we share in the work. Starting from the knowledge that the creek is an ongoing being, and that the challenge was to find a way to honour that, prevented me from worrying about having to prove It with concrete evidence, although I found that it is true based on the changes of elevation it causes in the land, and the support the flow of its ongoing waters provides to the vegetation it is interconnected with. Referring to the creek as the invisible creek helped me navigate the limitations of perception in the built environment. Honouring the creek's presence, agency and influence also manifests through my practices of walking and visiting with it, and the responsibilities I have to it as managed through reciprocal foraging. Acknowledging its role In multispecies world making is a key aspect of honouring the creek.

As a printmaker, what processes can I invite the creek to participate in that allow it to express its agency?

Related to the previous question, in printmaking I was concerned with what is the natural behaviour of the creek that can be expressed in printmaking. I found that through lithography and tusche, and water based inks and dendritic marbling, there are processes through which the creek can act as it does on the land and share its

knowledge about making-time and creating space. These knowledges are important for grappling with how not to become hopeless in times of chronic crisis, climate change, and precarity. In addressing the potential of working with an other-than-human being as a collaborator, there is a recognition that there are communities of beings that adapt to live with humans, and through rethinking being and our relation to them there is the creation of openings for other possible worlds. Tsing writes about the limitations of scalability, and the importance of noticing the doings of assemblages, the approach I have taken with the creek is one approach that builds towards cultural change that relies not on the scalability of a singular approach, but on on the polyphonic assemblages of many.

How are those of us that are in relation with the creek, both human and other-than-human, changed by it?

It feels premature to discuss how I have been changed by my relation with the creek. I have been unmade and remade, constituted, coconstitued. The waters of the creek seep through my skin and into my being. At the end of this project, I have said over and over again, I am so glad not to be doing this alone. This research began during the social isolation of COVID-19, in a drive to find community when human community could not be accessed. I have never been doing this research alone, I have always had the creek. It has been boundlessly generous and wise, and in its wisdom, it is reminding me it is time to make time to rest.

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Appendix A

Russell Creek Pt. One: Headwaters

Figure A1: (Top) Cover. October 2021.
Figure A2: (Bottom) Spread one. October 2021.

Figure A3: (Top) Spread two. October 2021.
Figure A4: (Bottom) Spread three. October 2021.

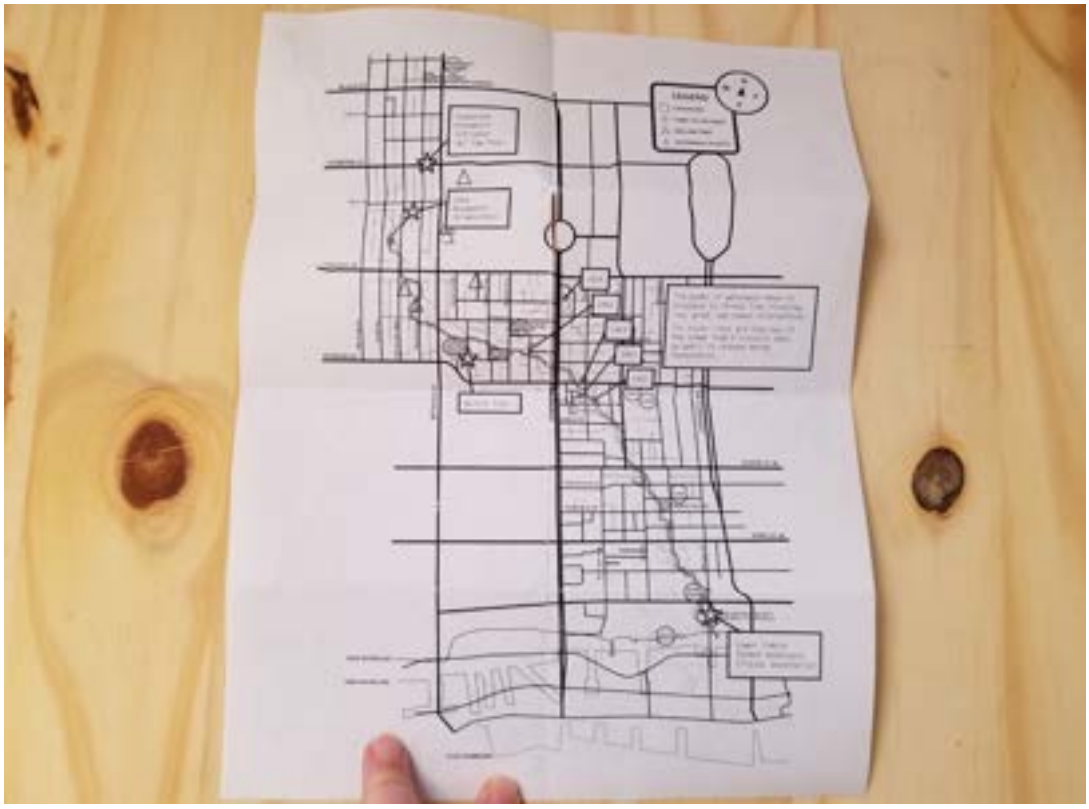

Figure A6: Interior map. October 2021.
Figure A5: Back cover. October 2021.

Appendix B

Stone Lithography

Figure B1. Soil and gravel from Orphanage Mews on the path of the creek west of the Grange. June 2022.

Figure B2. Stone tilted to create flow. Water added to create movement, allowed to dry. Tusche added and allowed to dry overnight. June 2022.

Figure B3. After tusche has dried. June 2022.

Figure B4. Soil and gravel wiped away. June 2022.

Figure B5. Roll up with lithography ink. June 2022.

Figure B6. Final print. Second layer of tusche mark making with willow, virginia creeper, and grape leaves. June 2022.

Figure B7. Jars of creek water from late winter, water from summer rainstorm, sweat gathered from my body. June 2022.

Figure B8. Leg sweat. June 2022.

Figure B9. Tusche mark-making using creek water from late winter, water from a summer rainstorm, sweat gathered from my body. (Reversed). June 2022.

Figure B10. After first etch. June 2022.

Figure B11. Second etch + roll up. June 2022.

Figure B12. Final print. June 2022.

Appendix C

Exhibition Documentation

Figure C1: View of exhibition in Ignite Gallery, looking east. This image shows the three elements of the exhibition: *Gathering Traces*, an installation of the outcomes of the experimental printmaking processes engaged with in collaboration with the creek, *Slow Flow*, an audio/video installation of walking the path of the creek, and *World Making of the Creek*, an installation that brings together the world making of the creek with reciprocal foraging practices and pigment making. April 2023.

Figure C2: View of exhibition in Ignite Gallery, looking west. This image shows *Gathering Traces*, an installation of eight 3.5 ft x 4 ft frames, each with sixteen 8” x 6“ and 10” x 8” prints. There is a total of 128 prints. Hanging from fishing line, both the prints and the frames respond to bodies and movement in the space, reflecting the animacy of the creek. On the right is a plinth with assembled copies of the zine *Russell Creek Pt. One: Headwaters* (see Appendix A) for visitors to take home. April 2023.

Figure C3: *Slow Flow,* a 2.5 hour audio/video installation that shows walking the creek in two parts. First part of the video takes place in the fall of 2022 and follows the path from the north near Bathurst and Harbord to the lower Simcoe Street underpass. Second part of the video follows the same path during the winter of 2023, this time walking from the south end of the creek to the north. The audio that accompanies the video is a looped recording of a buried waterway, Moutray Stream. April 2023.

Figure C4: *World Making of the Creek* is an installation that honours the creek's ongoing presence and expresses gratitude for its support of multiple networks of interpermated beings. This installation displays the swatches and bottled inks made with willow trees, riverbank grapes, trumpet flowers, virginia creeper, goldenrod, walnut trees, sumac, buckthorn and copper oxide gathered through reciprocal foraging practices. Also included are jars of water gathered from the creek, as well as branches from willow trees.

Figures C5-C6: *World Making of the Creek* details. April 2023.

Figures C7-C8: *Gathering Traces* details, frames one and two. April 2023.

Figures C9-C10: *Gathering Traces* details, frames three and four. April 2023.

Figures C11-C12: *Gathering Traces* details, frames five and six. April 2023.

Figures C13-C14: *Gathering Traces* details, frames seven and eight. April 2023.

Figures C15: Artist statement and zine display on plinth. April 2023.

Appendix D

Accompanying Video Files

Title	Length	Date	File Name
Slow Flow	00:00:56	April 2023	Norman_Josephine_2023_SlowFlow.mp4
Exhibition Walkthrough	00:01:30	April 2023	Norman_Josephine_2023_ExhibWalk.mp4
Prints Movement	00:00:04	April 2023	Norman_Josephine_2023_PrintMove.mp4