

# **PERMA**

Rachel Rozanski

BFA, Emily Carr University, 2017

A Major Research Paper  
presented to Ryerson University  
in partial fulfillment of the  
requirements of the degree of  
Master of Fine Arts  
in the program of  
Documentary Media

Toronto, Ontario, Canada, 2020

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## **Abstract**

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This MRP, entitled *Perma*, is concerned with environmental change in Northern Canada, and has a specific focus on the ways permafrost and water are being altered by human activity. The accompanying exhibition will present these issues in an immersive, multimedia gallery exhibition. My visual project has developed through creative practice and discourse with scientists and Indigenous land-based researchers. It investigates permafrost thaw, from the direct effects of small-scale mining to the results of large-scale climate change on Inuvialuit, Gwich'in, Dene, and Trondek Hwetch'in traditional territories. The exhibit will show prehistoric material previously preserved and the transformation of thawing permafrost, alongside the altered spaces left behind. The goal of my research is to better understand changes happening in the Arctic, and all environments, using visual investigation to explore how colonial narratives alter nature and impact our relationship with land in the Anthropocene.

## **Acknowledgements**

I'd like to acknowledge the territories that for thousands of years have been travelled, honoured and used by Inuvialuit, Gwich'in, Dene, and Trondek Hwetch'in. These peoples are the stewards of the lands on which I was able to live, work, and thrive, while making this project. I recognize that as a white settler, who has lived and worked on these and other colonized lands all my life, my privileged position has afforded me access to resources and opportunities within these spaces. It is my responsibility to actively work towards decolonization in my artistic practice and all areas of my life. This project was largely informed by Inuit who generously shared their land-based research and ancestral knowledge. I am especially thankful to have learned from Sarah Adam, Calvin Pokiak, and Pamela Gross.

Thank you to my supervisors Katy McCormick and Don Snyder for their guidance, encouragement and understanding through this entire process. Over the last two years, their insight, editing sessions and creative discussions pushed this project forward at each stage and helped me to grow as an artist.

Every day that I was able to live and study in Toronto I felt grateful to my family for their constant support. Janet and Sarah Rozanski have helped me work through every project I've ever made, talking through issues and holding the camera, bones or bear spray whenever I needed them. Barbara Meneley showed me that I could be an artist, and has helped me grow as one every step of the way. Joan and Nelson Meneley made me believe I could take on this master's degree. I've often been inspired by their strength (and sayings) when pushing through the many physical and mental challenges that have come up in making this project. Finally, I am so grateful to Parham Banafsheh who made me believe in all my craziest ideas and then brought them to life, through snow storms, mud bogs and bug swarms, to the Arctic and back.

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## **Introduction**

After a lifetime of seeing the Arctic portrayed as a vast expanse of uninhabited ice ruled by dying polar bears, my knowledge of the North was largely made up of narratives and images that I knew would be disjointed from reality. Still, it surprised me that most of what I found there, I had never seen represented at all. This disconnect between reality and common perception was clearly reflected in the reactions of viewers, my peers and professors, some of whom asked: Can you get more images of ice? Where's "the Arctic"? Images of the Arctic weren't believable enough as the Arctic. That's how strongly the idea of this region has been imprinted into many of our minds, and it shows how disconnected we can be from the reality of a place when we envision a fantasy of it.

For years one of the main curiosities behind my work has been wondering how our idea of "nature" impacts our relationship to land, and how we respond to environmental change in the Anthropocene (which is defined as our current geological era, when humans have the greatest impact on the planet). My research was on humanity's impacts that will be visible in the earth's biological and geological systems for millennia. Since 2016, I've ended up creating visual interpretations of my experiences and research through artist residencies around the Arctic in Nunavut, Iceland, the Northwest Territories and the Yukon. Through each of these, I worked with researchers who study different aspects of environmental change. Looking back, I think the reason I kept being invited to do this work through Northern residencies is because the Arctic is so urgently affected by climate change, because these issues require interdisciplinary

collaboration, and because artists and documentarians need to be a part of that in sharing different kinds of images of the Arctic.

My particular interest in environmental change in the Arctic began with a curiosity about the environment used as the symbol of climate change. I expected to see changes in weather and sea ice, but I was surprised to find that even in the most remote areas along Arctic coastlines, there are microplastics, pollutants and heavy metals in the water, in the animals, and in the ocean floor sediment. My sources confirm that the Arctic is disproportionately impacted by climate change, but the results are highly unpredictable. Often, geologic records have informed predictions about the future, but in much of this research it is now impossible to make accurate environmental predictions based on the past because nothing like the Anthropocene has happened before. New relationships and reactions are emerging constantly as new materials enter the environment.

This is the research I was most interested in, but my focus shifted once I proposed to continue that work on the Canada c3 expedition in Nunavut (2017). The projects on this expedition integrated scientific methodologies with Indigenous research methodologies (such as talking circles, prioritising community interests and sharing the gathered information). Participants included elders, youth, and scientists from different backgrounds and this combination was highly effective. Experiential knowledge was exchanged with scientific data from various fields, making the work much stronger by looking at the entire environmental system rather than its components individually. The scientists on the expedition relied on information shared by Inuit participants that had passed it down for generations. One of the most significant changes being studied was one we could see all along the coast of Nunavut.

Permafrost degradation is threatening towns, ecosystems, and global climate change. With the foundation for Arctic ecosystems thawing, the land and coastline itself is melting away.

### **Subject Description**

This multisensory exhibition will follow transformations of land and water, featuring a two-channel video, contact images,<sup>1</sup> and drawings. Examining the melting of permafrost (caused by both industry and by global climate disruption), the exhibition will show permafrost thawing and tailing into newly-created rivers, drained lakes, eroded land, and eventually the sea. My goal was to investigate the global effect of human-induced changes in climate and the environment through the deterioration I was seeing along Arctic coastlines. This project was created on Inuvialuit, Gwich'in, Dene, and Trondek Hwetch'in traditional territories. In June of 2019, I first travelled through the Yukon where I worked with scientists at the Yukon Research Centre studying permafrost thaw. Then, I spent a month in Dawson City as an artist-in-residence at the Klondike Institute of Art and Culture where I collected images of permafrost from mines. In August and September, I travelled up the Dempster Highway through the Northwest Territories to Tuktoyaktuk where I worked with people living on the land being studied.

Data gathered by Marsh and Martin shows that The Yukon and Northwest Territories have some of the world's oldest known permafrost, at up to 740,000 years. In some places it is around 1600 feet thick.<sup>2</sup> About 50 percent of Canada is permafrost, and it's thawing almost a

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<sup>1</sup> Contact Images are what I call my photographs made with a portable scanner, by pressing it directly against a surface the resulting image has a very shallow depth of field.

<sup>2</sup> William M Marsh and Martin M Kaufman, *Physical Geography: Great Systems and Global Environments* (Cambridge: Cambridge University Press, 2012), 606.

century earlier than predicted by studies looking at the effects of climate change.<sup>3</sup> Permafrost is the foundation for Arctic ecosystems and in the last ten years, thawing and “permafrost slumps” have started to dramatically change the landscape. Steve Kokelj explains that thaw slumps occur in areas of ice-rich permafrost, and are increasingly common.<sup>4</sup> Where this happens, the ground under a thin layer of topsoil thaws and collapses into a muddy slump floor (see Fig. 1 and 2, Appendix A). These can have headwalls up to 25 metres high, and can remain active for decades, continuing to expand and drain sediment into stream valleys, lakes or coastal zones. People living in Gwich’in and Inuvialuit regions with hundreds of years’ worth of historical knowledge have confirmed this, recognizing that slumping is increasing dramatically. Thawing permafrost leaves behind land cavities revealing thousands of years’ worth of history. These cavities can release gasses, fossils, bacteria, oils, heavy metals and plant matter. My work was made at sites where permafrost was exposed either in the form of climate change-induced slumps or placer mining operations,<sup>5</sup> which directly melt the permafrost to access resources, and inadvertently, fossils and gas reservoirs. Both of these processes slowly transform the land, leaving behind dripping, expanding cavities or “land ghosts.” I spent time with these spaces, their shapes, what is left behind in them, and the materials that were taken out. These show histories embedded in the earth’s oldest permafrost—and possible future histories of materials being preserved now. *Perma* documents where these phenomena have taken visible form, following details within the landscape. I wanted to visualize a response to this, but one based on different forms of research. I

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<sup>3</sup> Marsh and Kaufman, *Physical Geography*, 606.

<sup>4</sup> Steve Kokelj, “Permafrost Thaw Slumps,” Permafrost Thaw Slumps (Government of the Northwest Territories), accessed December 13, 2020, <https://www.nwtgeoscience.ca/services/permafrost-thaw-slumps>.

<sup>5</sup> “Unlike hardrock mining, which extracts veins of precious minerals from solid rock, placer mining is the practice of separating heavily eroded minerals like gold from sand or gravel” “What Is Placer Gold Mining?,” National Parks Service (U.S. Department of the Interior, 2015), <https://www.nps.gov/yuch/learn/historyculture/placer-mining.htm>.

used both data collected by scientists and experiential knowledge or oral histories of the people living on the land as a foundation for my personal research. I was interested in the emergence of programs claiming to be collaborative between these two very different research methods. I wondered how scientific and Indigenous research languages work together, where their priorities and methods overlap or differ, and their methods of working with environmental conflicts or histories.

In addition to core samples I documented at the Yukon Research Centre, I collected permafrost samples of my own from mining or slump sites to better understand the material in a more tactile way, and to create an embodied representation of that matter in my work. The layers of the earth show an archive of its history, representing each period and its environmental changes. What is being altered now will show our time in history and our relationship to ecology. Where Canada's permafrost is thawing, it will show land completely transformed by human-induced climate change. As it drains into waterways, it compromises drinking water with heavy metals and changes the chemistry of rivers, lakes and the ocean. It is explained in *Evidence and Implications of Recent Climate Change in Northern Alaska and Other Arctic Regions*<sup>6</sup> that the Arctic system is more sensitive to climate change than others, and is undergoing accelerated change. The authors conclude: "The accumulated evidence of changes among many components of the Arctic terrestrial system provides a diverse but consistent set of indicators of regional and global warming."<sup>7</sup> My focus is on permafrost degradation in part because "the broadest impacts to the terrestrial Arctic will occur as a result of changes in permafrost occurrence and distribution."<sup>8</sup> The Arctic climate has substantially warmed since the

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<sup>6</sup>Larry D. Hinzman et al., "Evidence and Implications of Recent Climate Change in Northern Alaska and Other Arctic Regions," *Climatic Change* 72, no. 3 (2005): 272, <https://doi.org/10.1007/s10584-005-5352-2>.

<sup>7</sup>Hinzman et al., "Climate Change in Northern Alaska," 287.

<sup>8</sup>Hinzman et al., "Climate Change in Northern Alaska," 287.

1800s, and “Long-time residents in the Arctic support this view from observations based on local knowledge.”<sup>9</sup> One of the things that became very clear from discussions with elders living in at-risk areas is that the quickly changing climate and different elements of the Arctic ecosystem can’t be studied in isolation from each other. Climate change affects the temperature of permafrost, but also affects peat cover and plant life, which is what insulates and preserves permafrost. When permafrost thaws, it releases additional CO<sub>2</sub> into the atmosphere, accelerating climate change. This is one of the many ways that the ecosystem feeds back into local climate. “No single piece of the system is independent, and to fully understand even a part of the system, we need to understand the whole.”<sup>10</sup> The Anthropocene requires us to adapt to how quickly and completely everything is changing; thus, research practices based on isolating and specializing may not be the most effective. Many institutions, in the North especially, have begun to try to implement more collaboration with local communities and interdisciplinary research. In studying environmental histories, we are dependent on Indigenous ways of knowing and being, gathered from lived experiences over thousands of years. I reached out to both researchers from Indigenous communities and from scientific institutions, interested in how these research languages work together, where their priorities and methodologies overlap or differ, as well as their methods of working with environmental conflicts or histories. Through this MRP, I hoped to explore how our idea of “nature” influences ecology, and how that is reflected in research.

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<sup>9</sup>Hinzman et al., “Climate Change in Northern Alaska,” 287.

<sup>10</sup>Hinzman et al., “Climate Change in Northern Alaska,” 287.

## **Research Framework**

### **Contextualizing the Anthropocene**

In my artistic practice, I have visited remote northern areas for several years with a focus on environmental change in the Anthropocene. In this paper, I am referring specifically to human impact affected by industrialism and colonialism. Kent G. Lightfoot et. al. address this in *European colonialism and the Anthropocene: A view from the Pacific Coast of North America*, stating that the global expansion of European colonialism “resulted in unprecedented changes in ecological processes and the health and vitality of indigenous floral and faunal populations across the globe...[W]hat was revolutionary about the early modern world system was the magnitude and scale in which it operated and the degree to which local environments were fundamentally transformed.”<sup>11</sup>

When the term “Anthropocene” is used to lump together all of humanity, it dismisses the colonial powers that instigated the large-scale environmental change warranting the term, the same powers that violently dispossessed Indigenous land and continue to disallow the land-based practices that would be beneficial to humans and our environment. Kathryn Yussof explains in *A Billion Black Anthropocenes or None* that “The Anthropocene might seem to offer a dystopic future that laments the end of the world, but imperialism and ongoing (settler) colonialisms have been ending worlds for as long as they have been in existence. The Anthropocene as a politically infused geology and scientific/popular discourse is just now noticing the extinction it has chosen to continually overlook in the making of its modernity and freedom.”<sup>12</sup> The Anthropocene is a

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<sup>11</sup>Kent G. Lightfoot et al., “European Colonialism and the Anthropocene: A View from the Pacific Coast of North America,” *Anthropocene* 4 (2013): 101, <https://doi.org/10.1016/j.ancene.2013.09.002>.

<sup>12</sup>Kathryn Yusoff, *A Billion Black Anthropocenes or None*. (Minneapolis, MN: University of Minnesota Press, 2018), 5.

geological era, but also one that is unavoidably political, as its emerging and its definition is still evolving. To say it is a problem “we” (as humanity) have created and must solve together would be to ignore that the climate crisis is a result of settler-colonialism, and that it often disproportionately affects the colonized.

This “we” negates all responsibility for how the wealth of that geology was built off the subtending strata of indigenous genocide and erasure, slavery and carceral labor, and evades what that accumulation of wealth still makes possible in the present—lest “we” forget that the economies of geology still largely regulate geopolitics and modes of naturalizing, formalizing, and operationalizing dispossession and ongoing settler colonialism.<sup>13</sup>

Dominant ideas of “nature” often follow a fantasy narrative that does not necessarily fit in with our current reality, but the fantasy narrative is still often the goal.

## **Research Methodologies**

Permafrost degradation is a circumpolar concern, but I was interested in Inuvialuit, Gwich’in, Dene, and Trondek Hwetch’in traditional territories within the ostensible borders of the Canadian state. Living as a settler in this country, I made it a priority to research this topic in the context of current and historical contexts of Canadian settler colonialism, exploring how these affect the environment and its management in Northern Canada.

Colonial imaginaries shape the reality of our environment. The word “nature” has come to replace the word ecology when they have very different meanings. As Timothy Morton explains in *Ecology Without Nature*, ecology is about understanding the connections and relationships between things, while “nature” is a romanticised fantasy that was inspired by ecology. He discusses the idea of “ecology without nature” and explores different ways of representing nature through writing and imagery, and discusses how art can impact the

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<sup>13</sup>Yusoff, *A Billion Black Anthropocenes*, 4.

environmental future by changing expectations of nature. His examination of how the Western world has created a non-ecological space inspired me to further explore the idea of conservation beyond just a sense of environmentalist hopelessness. He argues that the image of nature we hold and promote hinders our ability to think environmentally. Human imagination largely decides what environments end up looking like—when those decisions are driven by the colonial fantasy of nature, it can be seen through the form of land alteration and pollution, but also by confining and constructing “nature,” choosing if and where it exists, what species survive or die, and how they are used. One example of how this takes form is in western environmentalism. This is often based on the idea that nature must be preserved (or is already lost). This notion is based on the concept that humans are and must continue to be separate from “nature” if nature itself is going to remain intact. Indigenous methodologies and land-based practices prove otherwise, but these don’t fit into the colonial fantasy. One example of this happening in the Arctic is the ban on seal hunting that was fought for viciously by environmentalist organizations. In her film *Angry Inuk*, Alethea Arnaquq-Baril shows how they destroyed the sealing economy that many Inuk were dependent on. “Anti-sealers have carefully developed the image of commercial sealing as a massive and evil operation, and they say it’s inherently inhumane... they say fur is shame and a frivolous luxury, but Inuit defy that argument ‘cause we eat the meat, and fur as a warm coat is not a luxury, it’s necessary for day to day survival.”<sup>14</sup> The seals being hunted are not endangered, and every part of the animal is used. This is an extremely sustainable and ethical economic practice, especially when compared to the way animals are raised for meat.<sup>15</sup> But the image of the seal is easy to exploit for profit, and Inuit were not included in the discussion. This is a form of ongoing settler-colonialism, by choosing a fantasy of nature over the realities of ecology, and

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<sup>14</sup> *Angry Inuk*, directed by Alethea Arnaquq-Baril (Qikiqtaaluk, National Film Board of Canada, 2016), Online, Accessed July 21, 2020. [https://www.nfb.ca/film/angry\\_inuk/](https://www.nfb.ca/film/angry_inuk/).. 0:15:45

<sup>15</sup> Arnaquq-Baril, *Angry Inuk*, 0:17:25.

continuing to displace Indigenous people from land-based practices in the process. Rather than looking at the system as a whole, people wanted to “save the seals,” inserting themselves into a reality from which they are in fact disconnected. We are so often fed imagery of Arctic sea ice and the polar bear as symbols of climate change, of these being both endangered and pristine, majestic and untouchable, but also doomed and melting into nothingness. We are often working to “preserve” things that don’t make sense anymore in altered landscapes, because the reality is actually about preserving a fantasy.<sup>16</sup> Parks and preserves are now mostly human-dependent, containing species that can no longer survive naturally in altered environments, but focused on keeping humans out. In this way, “nature” continues to become further divided from human society in our minds and in practice.

In the Anthropocene, humans have the greatest impact on the planet’s biological and geological systems, but this fact is not compatible with the Western idea of “nature.” Human presence is so integrated into every ecosystem that trying to sustain this fantasy, trying to separate human impact from nature is becoming less and less effective. “Environmentalism is often apocalyptic. It warns of, and wards off, the end of the world”<sup>17</sup> And how could it not be, when the idea of “nature” is dying? How can we work towards productive change and ecological thought in the Anthropocene if we are trying to restore a fantasy that never existed and becomes harder to imagine every day?

I would argue the Anthropocene is an example of human imagination as an ecological force. It’s an example of how a small percentage of the people on earth reshaped it, began a new geological era, redefined “nature” and reshaped it in our minds. The Anthropocene has been hundreds of years in the making, it’s come out of a specific value system and cultural mindset.

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<sup>16</sup> Timothy Morton, *The Ecological Thought* (Cambridge, Massachusetts: Harvard University Press, 2012).

<sup>17</sup> Morton, *The Ecological Thought*, 98.

Apocalyptic notions associated with the Anthropocene leave us feeling hopeless, when these notions can actually show just how much impact our thinking can have. They could be a powerful tool to look at our current impact as an example of what we could potentially do. Art imagery can help us to visualise the less-visible aspects of our present and potential futures on a more than human timeline. It can impact the environmental future by changing how we perceive it. In trying to restore “nature” rather than taking preventative measures, environmentalism is often trying to respond to something that has already happened. Many of these attempted solutions aim to separate things that can’t be separated, or undo things that can’t be undone. I am interested in how ideas of “nature” influence ecology, and how visual language, interdisciplinary and indigenous-led research in the Arctic can function to challenge existing perceptions.

### **Interdisciplinary research**

I visited the Yukon Research Centre (2019), and previously the High Arctic Research Centre (2017) because they claim to be shifting the nature of their research to focus on more collaborative and community-based goals. Malin Ideland explains that science (and environmentalism) is culturally connected to the West, which influences its goals, priorities and methodologies. “Power is exercised through making up ways of thinking and talking as scientific or reasonable... power and knowledge are thus inseparable categories and operate together in the making of truth.”<sup>18</sup> Science opening its doors to more collaborative and interdisciplinary work is exciting and urgently important, but can other truths be considered valid within its current framework? I’ve been interested in how institutions approach collaborative

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<sup>18</sup> Malin Ideland, “Science, Coloniality, and ‘the Great Rationality Divide,’” *Science & Education* 27, no. 7-8 (2018): 783-803, <https://doi.org/10.1007/s11191-018-0006-8>.

work with artists like myself and with Indigenous communities when the ethics, theoretical framework and methodologies used by Indigenous people are different from theirs. Though many collaborative programs have been proposed, meant to fuse these two forms of research, I wondered whether this work is possible while science is structured in a way that does not acknowledge different forms of knowledge. Presently and historically, scientists have relied heavily on the knowledge shared by people who have lived on that land for thousands of years. However, this does not mean it's necessarily made official or considered official archival information. Because of this, collaborative work is rarely truly collaborative, as "scientific" knowledge and processes are still given more value, and "collaborators" are confined to working within a limiting system of knowledge. Dallas Hunt explains that "[T]he multiple inaccuracies in the written archival text highlight the importance of oral histories, not only as alternatives to the inconsistencies in the narratives settlers often tell of themselves, but also as valuable historical texts that make claims to spaces of belonging that assert long-held notions of Indigenous community."<sup>19</sup> This is especially true in the North where there is a relatively small and short history of settler presence, so Indigenous peoples' experiential knowledge and oral histories are heavily relied upon to track environmental change in the past and present.

Shawn Wilson argues in *What is Indigenous Research Methodology?* that "Indigenous research needs to reflect Indigenous contexts and world views: that is, they must come from an Indigenous paradigm rather than an Indigenous perspective."<sup>20</sup> He discusses the importance of experiential and intuitive learning, exchanging research within the community and using

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<sup>19</sup> Dallas Hunt, "Contesting Settler Colonial Archives through Indigenous Oral History," *Canadian Literature*, no. 230-1 (2017): 25-42, <https://doi.org/https://doi.org/10.14288/cl.v0i230-1.187955>.

<sup>20</sup> Shawn Wilson, "What Is Indigenous Research Methodology?," *Canadian Journal of Native Education* 25, no. 2 (2001): 175-179.

methods that help to fulfill our obligations and goals as researchers. These are some of the goals I have worked towards in research for my visual project.

## **Methodology**

### **Production process**

Research for my MRP is based on several primary questions, namely: How do we look at and study nature in the Anthropocene? How does the way this research is conducted affect the way it is perceived? How could these concepts be approached in a way that might help people expand their understanding of and relationship to their environments?

I decided to focus on permafrost degradation in the Yukon and Northwest Territories because these regions are accessible by road, because I was curious about the research in those areas, and because they have some of the most extreme permafrost degradation in Canada. I spent from June to October (2019) and then March to May (2020) in the Arctic. I travelled through Whitehorse where I worked with scientists at the Yukon Research Centre, then went on to spend a month as an artist in residence in Dawson City. From there, I drove up the Dempster Highway to Tuktoyaktuk, shooting all along the way.

After learning about the extent of permafrost degradation from people across the coast of Nunavut and seeing it firsthand in 2017, I was compelled to learn more about how it was affecting the Arctic and the world, and how it is currently being addressed. I started reaching out to permafrost researchers, and was lucky to speak with some of the most prominent in Canada. Steve Kokelj and Trevor Lantz spoke with me about their research, predominantly done in the Northwest Territories. I learned how to spot signs of permafrost degradation by watching for

hints in the landscape such as slanted trees, unsettled earth or roadways, tundra shrubification and certain geologic features. Both Kokelj and Lantz are authors of papers that refer to specific sites I had planned to visit, but I found many more along the way. They each expressed to me that they felt one of the most important things I could do is to understand how permafrost degradation affects *everything* completely—the water, plant life, animals, the entire system. So that is the research I pursued, seeking out more conversations with people who have watched those changes happen.

At the same time, I reached out to two journalists who live in the Northwest Territories and have focused on topics relevant to my MRP. Weronika Murray is a photographer who lives and works in Inuvik and Tuktoyaktuk. She collaborates with permafrost researchers out of the Aurora Institute, photographing permafrost degradation. Having worked in the community of Tuktoyaktuk for years, she was able to suggest certain people for me to talk with and some of the overall concerns and frustrations. Jimmy Thomson writes for the *Narwhal*,<sup>21</sup> focusing on environmental and Indigenous issues. He was able to share some insight on different institutions around Canada that claim to be integrating Indigenous research methodologies, steering me away from some that he felt are not meeting their obligations to communities.

In Dawson City, I documented the direct effects of intentional permafrost thaw through placer mining. The still shots and contact images included in my exhibition were captured during my first residency at the Klondike Institute of Art and Culture (KIAC) in July 2019. I found most of the mine locations by looking at satellite maps of the area. Using a raspberry Pi (a basic miniature computer) and battery attached to a flatbed scanner I was able to make the scanner portable, bringing it to locations where permafrost was exposed. The mine I visited most often

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<sup>21</sup> Jimmy Thomson, *The Narwhal*, accessed July 31, 2020, <https://thenarwhal.ca/>.

was different every day, and always alive and actively dripping. Giant chunks of rock and ice would fall from the “cave” ceiling, and fossils or semiprecious stones were often visible. Whenever I would visit, I would smell the methane carried over on a cold wind long before I could see the permafrost releasing it. The freshly exposed ground ice is often only solid for hours or days at a time, which made for an interesting result when using the scanner, which captures images very slowly. Each image takes about 15 minutes to make, and I had to account for technical difficulties that would constantly come up. As the images were collected, the permafrost would often melt onto the scanner, leaving watermarks. After each image, the scanner had to be wiped clean to take another (see Fig. 7-10 Appendix B). At the Yukon Research Centre, I only had one chance to collect an image of each core sample, because of how long it takes and how fast they had to be refrozen to remain preserved. Driving north up the Dempster Highway to Inuvik and Tuktoyaktuk, I visited the locations of permafrost slumps that I had found from the Yukon Research Centre and from academic papers. These thaw slumps, I saw, were some of the largest in the world, reaching “...up to 40 ha in areas with headwalls up to 25 m high, and can remain active for decades.”<sup>22</sup> I was still shocked to find each one continuing to grow after years of activity, and to find additional new slumps that have not yet been publicly documented. I could see the drastic changes in the biome, even between my drive up the Dempster Highway and back down. Accessing these slumps often meant hours of hiking across tundra, and taking care not to get too close as the ground around them has often become a layer of topsoil empty underneath, drained of permafrost. The slick mud that drains out of the slump acts in similar ways to quicksand, dangerous and almost impossible to walk through. It is so unpredictable from one step to the next, that at times I would take a step and go in up to my thigh. I travelled with camera operator and cinematographer Parham Banafsheh, who captured

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<sup>22</sup> Kokelj, “Permafrost Thaw Slumps.”

most of the moving video shots in 4k using a Canon c200 on a steadicam. With this we were able to film our experience simply walking across the land as we did, but the stabilizing effect of the steadicam gives the feeling of hovering low to the ground smoothly rather than making the viewer aware of the camera. This meant we were able to recreate an intimate interaction with the land, which I felt was the most important aspect of the video (see Fig. 6, Appendix A).

In Tuktoyaktuk, I began focusing on permafrost degradation along the Arctic coast, where it is disintegrating faster than can be recorded. This accelerated change is quickly putting coastal communities in danger and raising new concerns. Along the shore, four different methods have been used to try and slow the degradation, some of which appear in the video piece. Giant blocks of concrete were embedded into the ground, but now the earth is eroding out from around them. Next, boulders and manufactured rocks were poured all along the coastline, with sheets of metal between them and the shoreline. The storms are so strong they were moved away from the shoreline and deeper into the ocean. Geotextile fabric was then placed all along the beaches, covering them up completely to the edge of the town's homes. It was torn apart and spread around the coast almost within a week. One of the biggest concerns about erosion in Tuktoyaktuk is that it is now approaching the town's graveyard. Everyone I spoke to mentioned this: unearthing the bodies will bring grief to the whole community, but there's likely no other option.

In March 2020 I returned to Dawson as an artist in residence at KIAC again. I was primarily working on drawings to include in the exhibition, while revisiting placer mining sites. On the Yukon River, cracks had begun to open up as the ice melted earlier than expected. I photographed these and stitched them together to use in the video. In April, I revisited the placer

mine and documented it with a DGI Phantom drone. In these drawings, I hoped to visually interpret what can't be represented in digital mediums, allowing for images that are abstract but also visceral. While the video and contact images are literal impressions, the directness of mark-making can bring attention to time-based, textural and isolated details within the subject matter. These drawings show my personal experience of interacting with the subject matter, accentuating certain pieces of earth that I spent a lot of time with. I watched these objects transform from solid earth supporting the arctic ecosystem to liquid sludge, draining into waterways and evaporating. As chunks of permafrost would thaw, rocks and fossils would emerge from them and be left behind. Cracks that form in the earth where the land is about to slump can split trees and leak gas. Watching these things happen is surreal, but trying to represent how alive and active that earth is felt impossible to do in one or even two mediums. Drawings can isolate objects removed from the land and the spaces left behind to focus on tiny site-specific details rather than large-scale phenomenon. While this is a global concern, the fossils and rocks I drew were frozen in thousands of years' worth of permafrost specific to those parts of the Yukon and Northwest Territories, with significant differences in the geology even between each location.

## **Main Participants**

My own artistic research was experiential and personal but is founded on knowledge shared by scientists and Indigenous land users. Much of the information I gathered leading up to this project came out of discussions with scientists, journalists, and Inuit. In approaching each of these I would explain the premise of my MRP and how their teachings might inform that work. These dozens of informal conversations gave me the opportunity to learn from and discuss my questions about this topic, which eventually led to my two primary formal interviews at the

Yukon Research Centre and in the community of Tuktoyaktuk. Although these are not directly a part of my exhibition, they greatly informed my research and visuals.

At the Yukon College Research Centre, I mainly corresponded with and then met permafrost researcher Fabrice Chamel, who is monitoring permafrost disturbances across the Yukon and into the Northwest Territories. He regularly visits sites that are thawing and helps collect core samples at each. He allowed me to make contact images of these core samples, showing the vastly different materials that make up the permafrost from each region. These are kept in a freezer and labelled, but the land they are from could easily thaw within the next 50 years. I was interested in visiting the Yukon Research Centre because they claim to work collaboratively with Indigenous communities. Their website states, “Our research draws on western science and Indigenous knowledge to share innovative, northern solutions with our communities, the North, and beyond.”<sup>23</sup> I wondered if this was done successfully, and to what extent their permafrost research was collaborative. Chamel’s team is attempting to map the most endangered areas, so that remote communities such as Old Crow and larger cities like Whitehorse can begin to prepare for the oncoming changes. These decisions about what infrastructure to prioritize are made in collaboration with the community, but I did not see firsthand how collaborative the research being performed for it is. Of all the institutions I contacted, members of the Yukon Research Centre were the most open to speaking with me, and many of them took the time to do that on multiple occasions. The Research Centre is also beginning to create maps that show where the permafrost sediment travels through waterways, only barely starting to understand how these can dramatically change the biodiversity and safety of the water itself.

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<sup>23</sup> “Our Research,” Yukon University, accessed July 16, 2020, <https://www.yukonu.ca/research/our-research>.

Sarah Adam is an elder living in Tuktoyaktuk whom I was fortunate to meet and learn from. I had interviewed other community members, but she became the person that taught and influenced me the most. One day as a storm was approaching, her husband, Sandy, looked out and saw my collaborator and I working nearby and brought us a plate of freshly-caught salmon, inviting us over to dinner. We spent the night listening to their stories and from then on, I spent a lot of my time in Tuktoyaktuk with them. Sarah's childhood home stood on permafrost that is now gone, and her current home is hanging off the edge of the land, ready to follow the last one into the ocean. The kitchen window looks out directly onto the ocean with no ground below, and when a storm comes, waves wash over it. With each storm, more of the permafrost is worn away and ground ice is exposed all along the town. Sarah's home was meant to be moved in a year because government-collected data led to inaccurate predictions about how soon it would be necessary. She was so frustrated at their dismissal of her situation, she showed me pictures of the shoreline erosion she had taken over 10 years. It had receded around 60 feet. She is one of several people who taught me the most about how all aspects of that environment have changed and why they are entangled to the point that they can't be studied individually: the plant life, the tundra turning into marshes or drying out, and all species either adapting to it or not adapting fast enough to survive. We hear a lot about the dangers of melting ice, but Sarah and Sandy spoke about the dangers they deal with from the melting land, which are affecting them every day. The way they teach their children how to survive on that land is so different from what they were taught because it has changed so much. The timeline predictions surveyors and researchers have given them were very inaccurate, and because they reacted so slowly, Sarah's home and others are likely to fall into the ocean before getting moved.

I had planned to visit Tuktoyaktuk and Sarah again in March, but the borders closed due to Covid-19 shortly after I arrived in Dawson. Because of this, most of the work I had planned to do was cut short. However, I feel fortunate to say I was able to accomplish most of what I proposed. I drove up blindly, even after all the research and preparation I didn't know if I would find anything at all, and by June of 2019 I felt sure I was in over my head. But unfortunately, it was easy for me to find permafrost degradation everywhere I had set out to and more. Deciding to shoot the video on a steadicam did give the effect I had hoped for, but may not have been worth what it cost the project. It severely limited our access to locations, and made shooting on uneven and dangerous terrain extremely difficult. The set up could never be spontaneous; it would often take hours of hauling and assembling hundreds of pounds' worth of equipment. I don't know if another method could have had the same effect, but it was probably the most challenging one I could have picked and I would not choose it again because of the opportunities that were missed. Many of the sites I had researched previously were not close enough to the road to use the steadicam. For example, my collaborator and I hiked to the second widest permafrost slump in the world, which was incredible and horrifying to see, but the footage was taken on a tripod and so the results were not very effective. Most visual evidence of permafrost slumps is taken as distant aerial panoramas, this is done to understand the size and impact of the slump, but in many ways has the opposite effect on viewers. It gives a disembodied representation that doesn't convey the reality of immense land masses collapsing, it doesn't show the gaping cavities that feel alive or their impact on ecosystems and people. For this reason, I was very reluctant to use a drone even close to the earth. I wanted to replicate my experiences as closely as possible through direct imprints and video of the land, giving tangible and sensory evidence of such a vast global issue. We expect earth to be stagnant, so distant shots do not

convey the experience of being so close to the active material. I hoped these choices would add to the sensory impact of the work, to help viewers understand this phenomenon more personally in relation to themselves through my documented experience.

## **The Installation**

My MRP will result in a multimedia immersive gallery exhibition that includes a two-channel video projection, seven large-scale drawings between 4x6 and 8x10 feet, and a series of ten backlit 18x12-inch contact images. Each medium will function on a different level, to show three aspects of active land changes, carrying the viewer through the space. The exhibition will be held at A Space Gallery, in Toronto. The gallery is divided into two spaces: one side will contain the video piece and contact images, and the drawings will be spot-lit on the other side.

In the first room, the 15-minute two-channel video will continuously loop, giving the viewer an experiential sense of the landscape by moving across it, showing the layers of earth and its quick thawing. The two channels will interact, at times showing two layers of the earth, at others using blackness on one screen to focus on particular moments. The footage follows the journey of travelling north, following land and water to the ocean. It is accompanied by atmospheric sound recorded in those locations.

Along the wall or raised on the ground in the same area as the projections, I will show a series of twelve contact images. These resemble microscopic images, a database of sorts documenting both core samples from the Yukon Research Centre and my own found samples. With the extremely shallow depth of field, the photos end up resembling microscopic images. These will show the smallest details within the landscape, collections of objects of study. These

will be on one large light panel, gently backlit, generating less light than a regular lightbox. This will allow the blacks in the images to stay black, and for the colours and bright areas to have a slight glow. This box will have a frame and can be hung either directly on nails or hung with nails on a wire.

In the second room, I will have five large-scale black-and-white charcoal drawings between 8x9 feet and 8x13 feet (or sized to fit the space). The video gives the overall experience of travelling through the space and the contact images give a close-up abstracted impression of the earth. I felt the best way to recreate the sensorial experience of my interactions with thawing permafrost would be through the direct mark-making of my drawings. In doing this, I was able to feature elements within the landscape, separating them from expansive walls of ice and mud. I consider these documentary works, and situate them within the long history of drawing used as a documentary media. In many ways, these drawings are less abstract than my video and contact images. While permafrost degradation is an abstract subject in itself, the drawings are highly representational depictions of it. The video contains elements and shots that my collaborator and I manipulated to a high degree, while the contact images have such a shallow depth of field that the subject is completely altered into an almost unrecognizable form. Each of these mediums were used to take direct impressions of the land, but left it abstracted in different ways. I would argue that my drawings are equally direct and effective as documentation of my experiences.

To limit text on the walls, I will be creating a booklet that viewers can take with them containing captions and information about the work's concept, including a brief explanation of permafrost and of the different processes shown that melt it.

## Documentary Relevance

I have been looking at artists who work within research-based, interdisciplinary, or ecological practices. With this project, I hope to situate my work among these topics in a way that has not yet been shown through existing documentaries or exhibitions. I will be discussing four artists who inspired decisions I made in this project: Roni Horn, Natasha Naveau, Kelly Jazvac, and Taryn Simon. Each of these artists has been involved in collaborative work, creating studies and documentation of environmental change using different methodologies. They contribute to a larger discussion about how artists can and must be a part of research into environmental change in the Anthropocene.

Roni Horn created a site-specific installation in Iceland reflecting on the fragility of immense ice bodies entitled *A Library of Water*.<sup>24</sup> With the help of local scientists, she collected ice core samples from different locations across Iceland. In the gallery, the ice was put into 24 glass tubes that reach from the floor to ceiling, where they are topped by windows that light the specimens naturally. When they were first installed, viewers could watch the specimens melt to leave behind different kinds of earth deposits.<sup>25</sup> I was inspired by the temporal nature of this work; it shows material that has been frozen for decades melting in a short time period, and then living out the rest of its existence in the gallery as water. Along with this, Horn also created a library of audio recordings where people in surrounding areas discuss environmental changes they have seen.<sup>26</sup> This project is strong because of the multiple layers of evidence demonstrating

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<sup>24</sup> Jillian Steinhauer, "A Library of Glacial Water in Iceland," Hyperallergic, July 30, 2015, <https://hyperallergic.com/226116/a-library-of-glacial-water-in-iceland/>. 25.

<sup>25</sup> Roni Horn, "Archived Glaciers at the Library of Water," trans. Maeve Hanna, *Esse Arts + Opinions*, no. 89 (2017): 76-79.

<sup>26</sup> "Vatnasafn / Library of Water," Artangel, accessed July 30, 2020, <https://www.artangel.org.uk/project/library-of-water/>.

a larger concept. The primary element of the installation is the subject matter itself: visible pieces of glaciers that are disappearing or gone. As time goes on, core samples like these will be their only physical remains. The audio recordings share people's personal interactions with the glaciers and that environment, evidence of change through experiential knowledge that will build to create a detailed record over time. One of my greatest challenges in this project was trying to express the active nature of permafrost. In person, it feels absolutely alive, thawing to release smells, falling rocks and bones, and the rivers of muck that drain slowly from it like lava. I didn't think any one medium could convey those things. A still image for example could easily remove the dramatic nature of permafrost thaw to show only static mud. Like Roni Horn, I decided to use multiple mediums to convey different elements. The different components of *Library of Water* come together to transport that experience into the gallery, and enhance it through her installation choices.

Artist Natasha Naveau shows how land-based teachings and Indigenous research can be brought into institutions and presented as an immersive multimedia installation. *Shkakamikwe Kido* was an exhibition held within an Anishinaabe-style teaching lodge built inside Ryerson University. Using saplings and canvas, she built a space that viewers could enter to see the 3-channel video projected onto the domed walls of the lodge. These were accompanied by recordings of oral teachings and ambient sound. This work revitalizes Indigenous practices that contribute to our understanding of relationships in an ecosystem that includes humans. Teachings are given in whatever language the speaker chooses, and presented in a teaching lodge. This work shows that land-based teachings do not need to conform to a Western research framework, or be adapted for a Western audience, in order to be valid or effective. By taking these teachings into Ryerson University, she politicizes the work and reclaims that space through place-making.

Her meditative 3-channel video lingers on different components of the environment being discussed. When I went to shoot my video, this inspired me to slow down, to focus on details up close and allow multiple channels to keep it engaging. Naveau's work is conceptually strong, but is then brought to life through the layers of depth installation and place add. First the viewer enters an institution to access a teaching lodge that opposes that institution's values. The division between these is clear, and so the viewer can easily understand that they are entering a new space with a different set of teaching methodologies. The teaching lodge walls alter the shape of the videos, and our understanding of projections. Unlike projections on a flat plane, it is tactile and experiential.

Kelly Jazvac takes an interdisciplinary approach, working directly with scientists to collect and study samples which she displays as sculptural objects. She explains along with other authors in *Embracing an Interdisciplinary Approach to Plastics Pollution Awareness and Action* that her "Plastiglomerates" are rocks that have plastics integrated into them; they situate us in our environment realistically without having to embellish or humanize the art objects.<sup>27</sup> These provide strong evidence of the validity of the Anthropocene epoch, and also artistically illustrate possible futures. Jazvac is a part of the Synthetic Collective, which is a strong example of an effective interdisciplinary group involving a wide range of collaborators, including artists, scholars, and scientists. They work in the Great Lakes region, focusing on plastic pollution. They explore the ways plastic travels, following its lifespan, examining it as a pollutant, an art material, and a geological sample.<sup>28</sup> Each of these artists uses data to create a heightened level of understanding for viewers living in the Anthropocene. They successfully make environmental disasters and changes experiential and tangible, without glamourising or romanticizing them.

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<sup>27</sup> Sara L. Belontz et al., "Embracing an Interdisciplinary Approach to Plastics Pollution Awareness and Action," *Ambio* 48, no. 8 (2018): 1-12, <https://doi.org/10.1007/s13280-018-1126-8>.

<sup>28</sup> Belontz et al., "Embracing an Interdisciplinary Approach," 1-12.

With these in mind, I aimed to explore whether existing collaborative projects in the Yukon and Northwest Territories are successful, and to create collaborations of my own.

The visual styles Taryn Simon uses to document objects and spaces are simple and beautiful, but take on a completely different presence when paired with the conceptual context in which she creates them. Her book *Paperwork and the Will of Capital* contains scanographs of horticultural samples reconstructed from bouquets that were present at significant political events.<sup>29</sup> In doing this, she looks at the setting or staging of places of power and the performance of it. Individually, they seem like commonplace things, but collectively they tell a story about a country's political systems. I am interested in how Simon creates these detailed, catalogue-like studies of flowers to draw in the viewer, inviting them to explore these beautiful images, then leading us to being struck by their heavy geopolitical context. Similarly in her project *An American Index of the Hidden and Unfamiliar*, Simon collects images of American places and objects that are largely inaccessible to the public.<sup>30</sup> These are often things that are portrayed using certain imagery to tell a story, which Simon contradicts by showing them as simply and accurately as possible. My contact images are done in a similar style of cataloguing, referencing a history of scientific illustration and idealised documentation. With these, I hope to evoke a similar reaction to the one I have when looking at Simon's scanographs: a feeling of closeness to the material, a sense of its tactile presence and curiosity about its origins.

Each of these artists informed how I might visually represent massive earth-based processes, a task I found daunting. What drew me to them in particular was the sensory and phenomenological impact of their work. Their projects are heavily research based, but this research is converted into something visceral for viewers to connect with on multiple levels. The

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<sup>29</sup> Taryn Simon et al., *An American Index of the Hidden and Unfamiliar* (Göttingen, California: Steidl, 2008).

<sup>30</sup> Simon, *An American Index*.

experiential nature of Naveau and Horn's works allows the viewer to go through their own learning process, exploring audio, visual and spatial components of embodied research. Despite the years of research that went into *Perma*, the result is a visceral experience emulating my own, showing how I interacted with land through creative practice. I made creative decisions that abstracted the subject, limiting the field of view in the video to manipulate the viewers' experience. The footage that hovers close to the ground is somewhat hypnotic and eerie, it lulls the audience into a meditative state. Having that limited field of view is frustrating, so the brief moments that show a wider context are jarring and more powerful because of it. The audio paired with it is atmospheric and subtly uncomfortable. Transitions of season and place are made more distinct through the sound.

In presenting this work, many viewers have primarily had an immediate emotional response that was strengthened by the more intellectual groundwork. Visualizing the subject dynamically in this way was one of my exhibition goals, which is also why I explored permafrost degradation through different mediums and scales. Simon and Jazvac play with subjects that are small but powerful representations of large-scale concepts. This play on scale is something that I have always been interested in, especially with broad subjects such as climate change and permafrost thaw. Looking at elements of these ideas on a very small scale allows us to put them in relation to ourselves. My contact images are direct imprints of pieces of earth that are disappearing, much like Simon and Jazvac's photographs, they are isolated in the image. Just as Jazvac's plastiglomerates act as evidence of the Anthropocene era, my contact prints represent land that is now gone as a result of climate change. The small scale of these prints makes them feel like precious specimens, while the large-scale drawings hint at the enormity of permafrost

slumps in relation to ourselves. The shrinking and growing of scale throughout the video piece plays on this sensory phenomenology as well.

## **Conclusion**

I first travelled north wondering how the imagery I'd been fed showing the Arctic as the symbol for climate change compared to reality. I kept being pulled back because I saw very real issues and exciting research around them that wasn't being represented among these images. This is one example of an environment that becomes a fantasy in the Western imaginary, which can then be used to manipulate when the general population's understanding of it is limited to a small selection of images. Many of the Inuit I've met have commented on the strangeness of the money being spent on "saving" polar bears when they are not a vitally important part of the ecosystem, and when trying to keep them alive in an environment they can't necessarily survive in anymore makes them a greater danger to people and may ultimately be impossible. The extinction of polar bears is one example of things that will likely always get more attention than permafrost degradation, which will alter every component of Arctic ecosystems and have a significant effect on global climate change.

The ways "nature" and ecology are represented has a huge impact on the way we perceive them. Art can impact the environmental future by changing expectations. I hope to situate myself among artists working to visually represent the Anthropocene but with a focus on rapid changes happening in Arctic Canada. The concept of "nature" as it exists in the colonial imaginary interprets ecology as stagnant and separate from humanity, which is far from the truth. In discourse about our current environmental crisis, it is important to "counter the dominant

narratives of state- and civic-sponsored archives and chart new ways forward by presenting alternative stories.”<sup>31</sup> This can be done in a number of ways, but in research around the north specifically it is vitally important to consider Indigenous oral archives and land-based knowledge as valid archival material.

Working through visual mediums to document and understand ecology in the Anthropocene is something I have done where I grew up in BC and have continued to do everywhere I’ve gone. I have chased after opportunities to collaborate with researchers in various fields looking at the impact of humans on the environment, building a sort of archive of nature in the Anthropocene. I hoped to provide a layer of visual evidence based on research that is accessible and experiential, bringing issues to the forefront that are often lost under dominant symbols of Arctic climate change. Hunt asks, “What are the stories one tells in dark times? How can a narrative of defeat enable a place for the living or envision an alternative future?”<sup>32</sup> Crises open up the need and desire for interdisciplinary collaboration and different modes of investigative research. I believe it is important for artists to be involved in this critical discourse, to examine issues and to envision alternatives. “Artists and art writers often work with scientific evidence, but they can also work speculatively, and in so doing, help audiences make sense of environmental contamination.”<sup>33</sup> In this way, creative practices existing within environmental research have the potential to help reimagine nature in the Anthropocene.

Word count: 8, 791

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<sup>31</sup>Hunt, “Contesting Settler Colonial Archives,” 25-42.

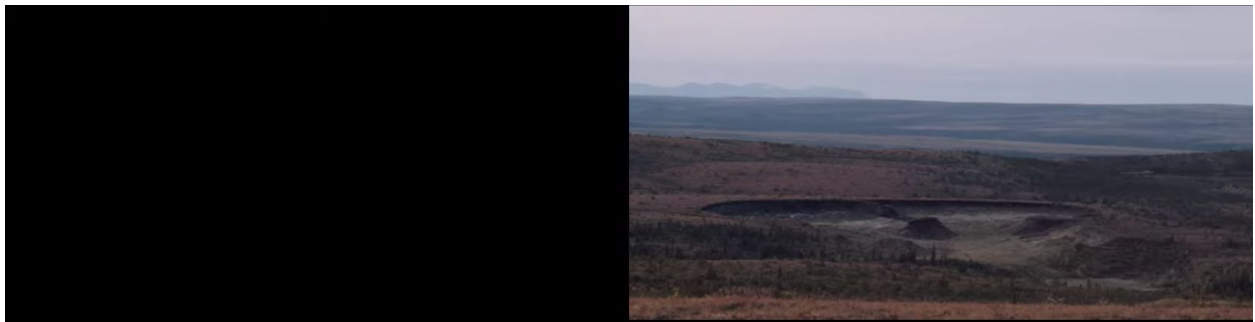
<sup>32</sup> Hunt, “Contesting Settler Colonial Archives,” 25-42.

<sup>33</sup> Belontz et al., “Embracing an Interdisciplinary Approach,” 1-12.

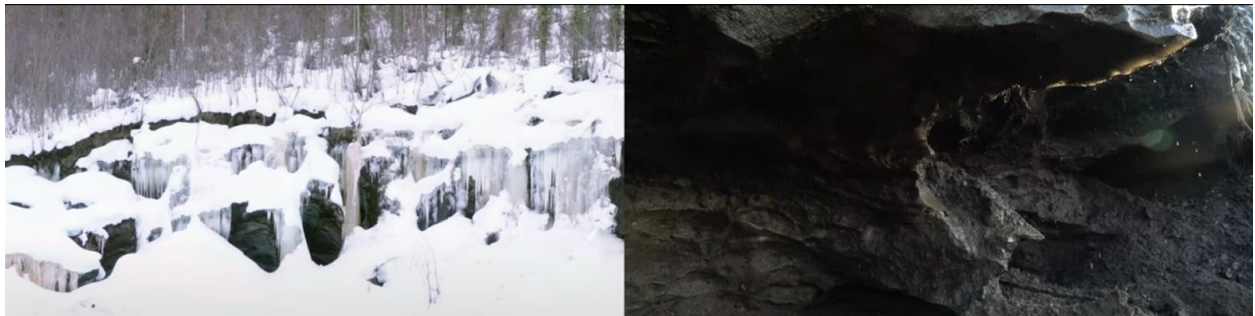
## Appendix A - Video Stills



(Fig. 1) Video still of permafrost slump



(Fig. 2) Video still of permafrost slump



(Fig. 3) Video still of placer mine in winter and summer



(Fig. 4) Video still of shoreline erosion in Tuktoyaktuk

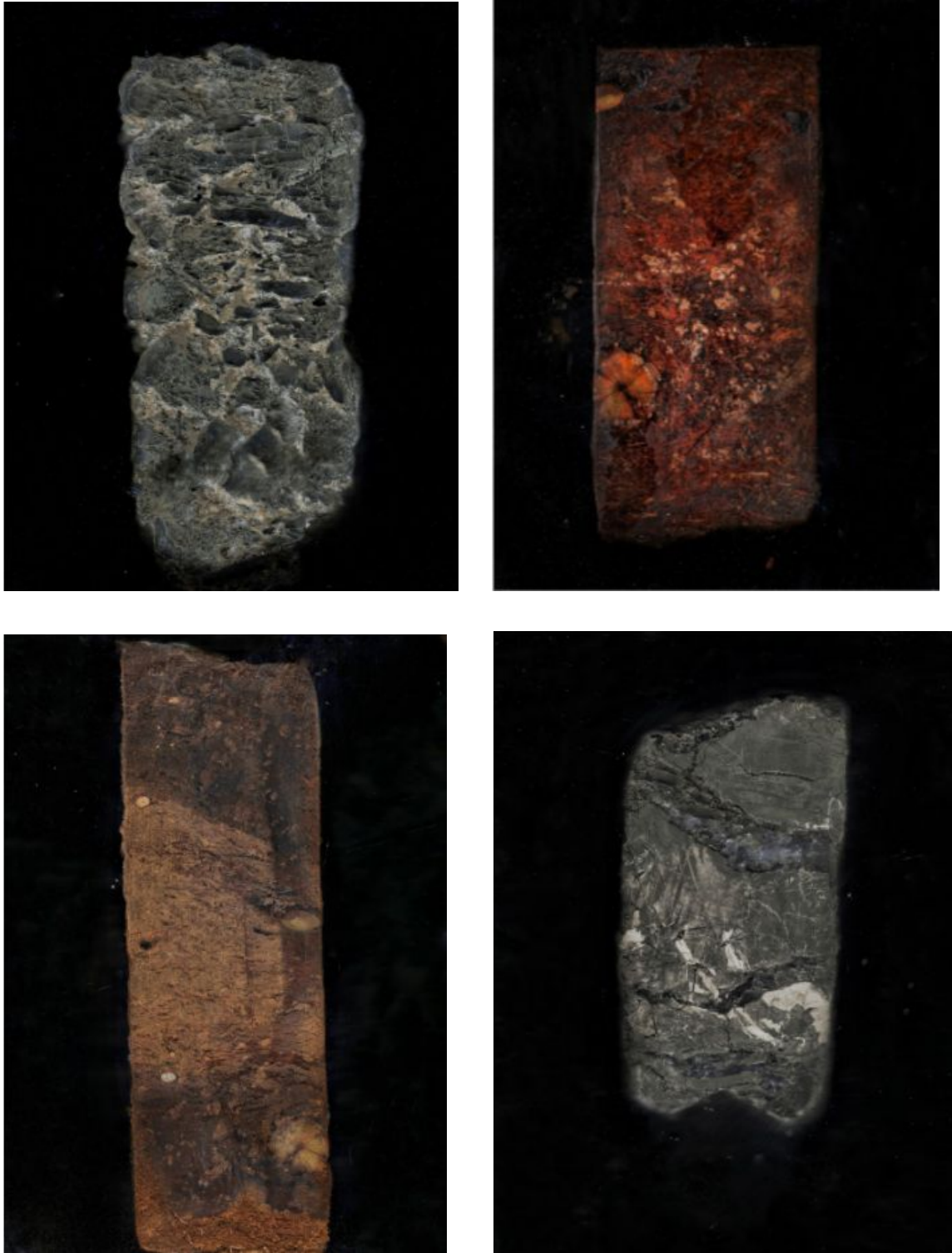


(Fig. 5) Video still



(Fig. 6) Video still of tundra and the permafrost underneath it

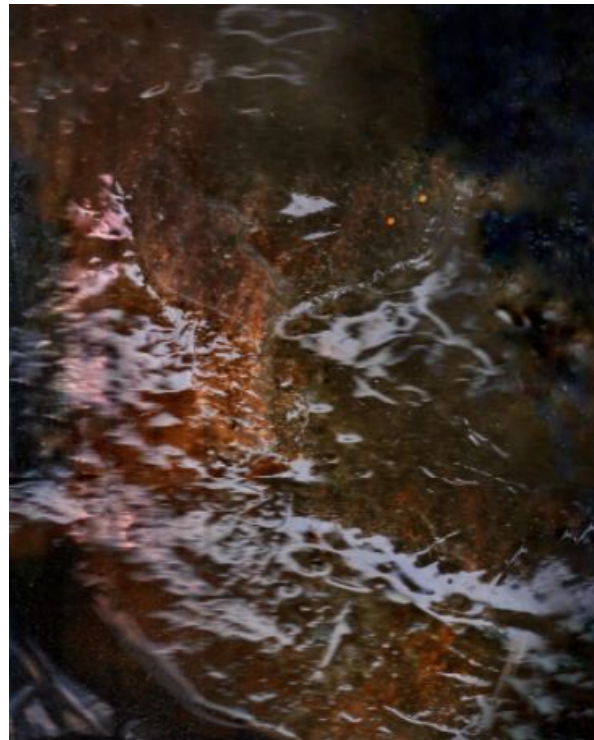
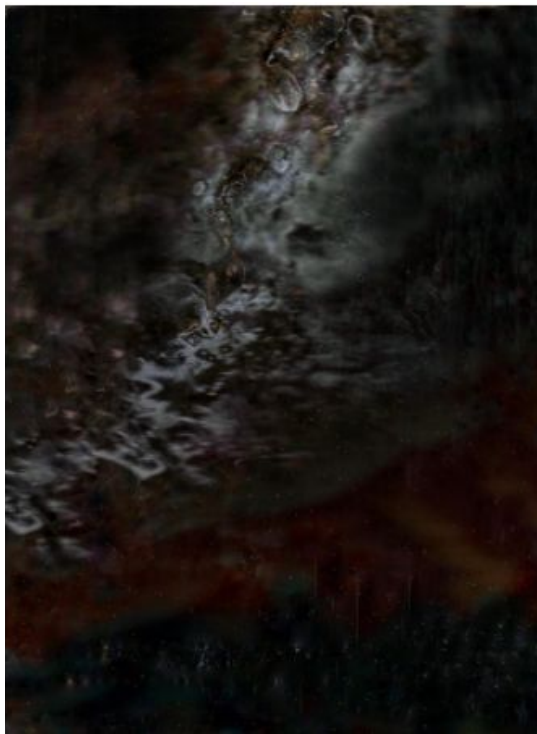
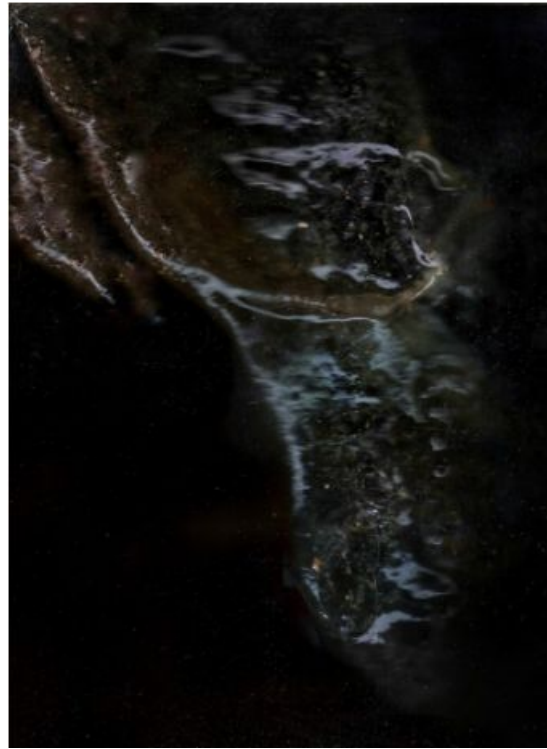
## Appendix B- Contact Images



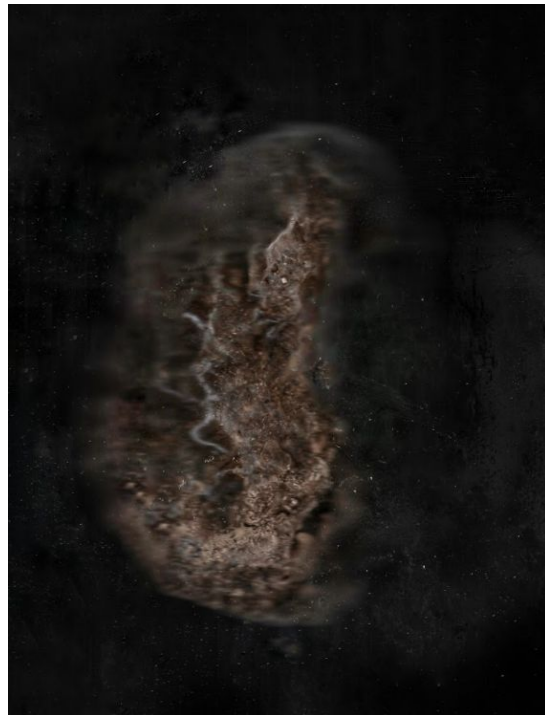
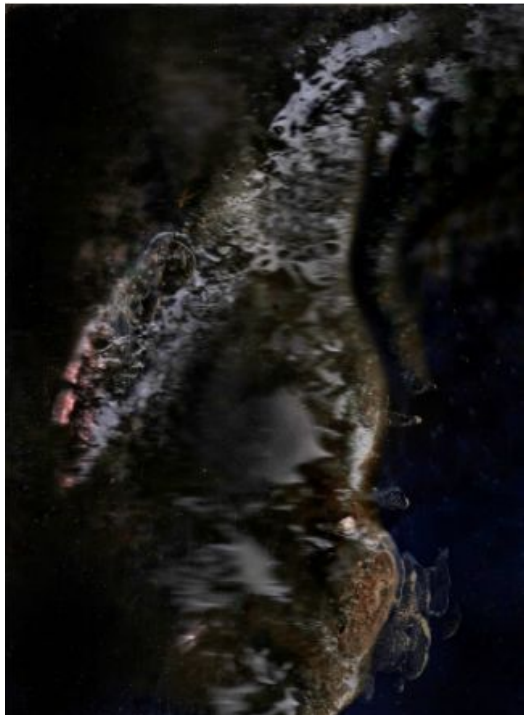
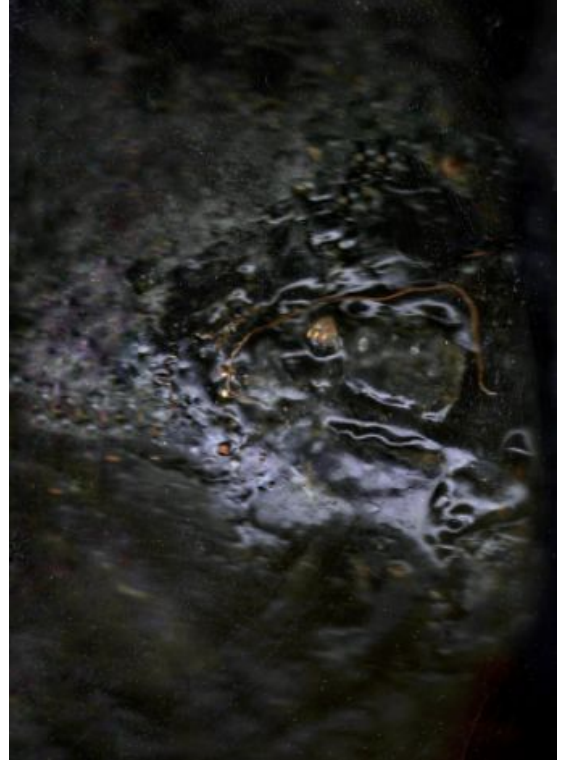
(Fig. 7) Contact images of permafrost core samples from the Yukon Research Centre



(Fig. 8) Contact images of permafrost core samples from the Yukon Research Centre



(Fig. 9) Contact images of permafrost found at placer mines

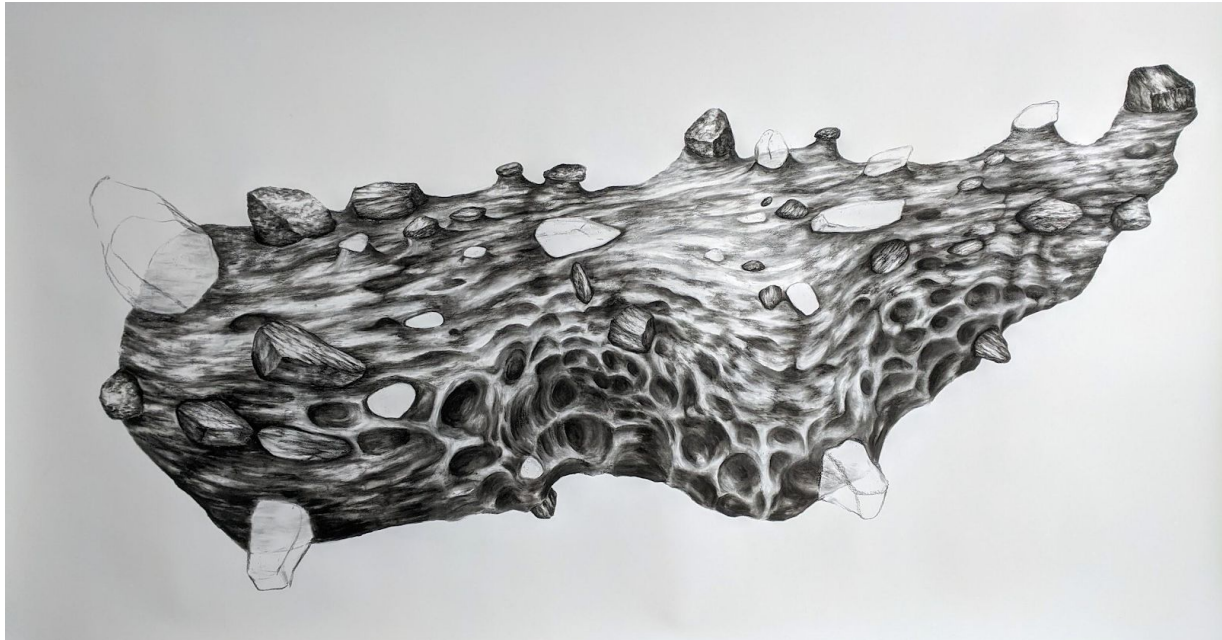


(fig. 10) Contact images of permafrost found at placer mines

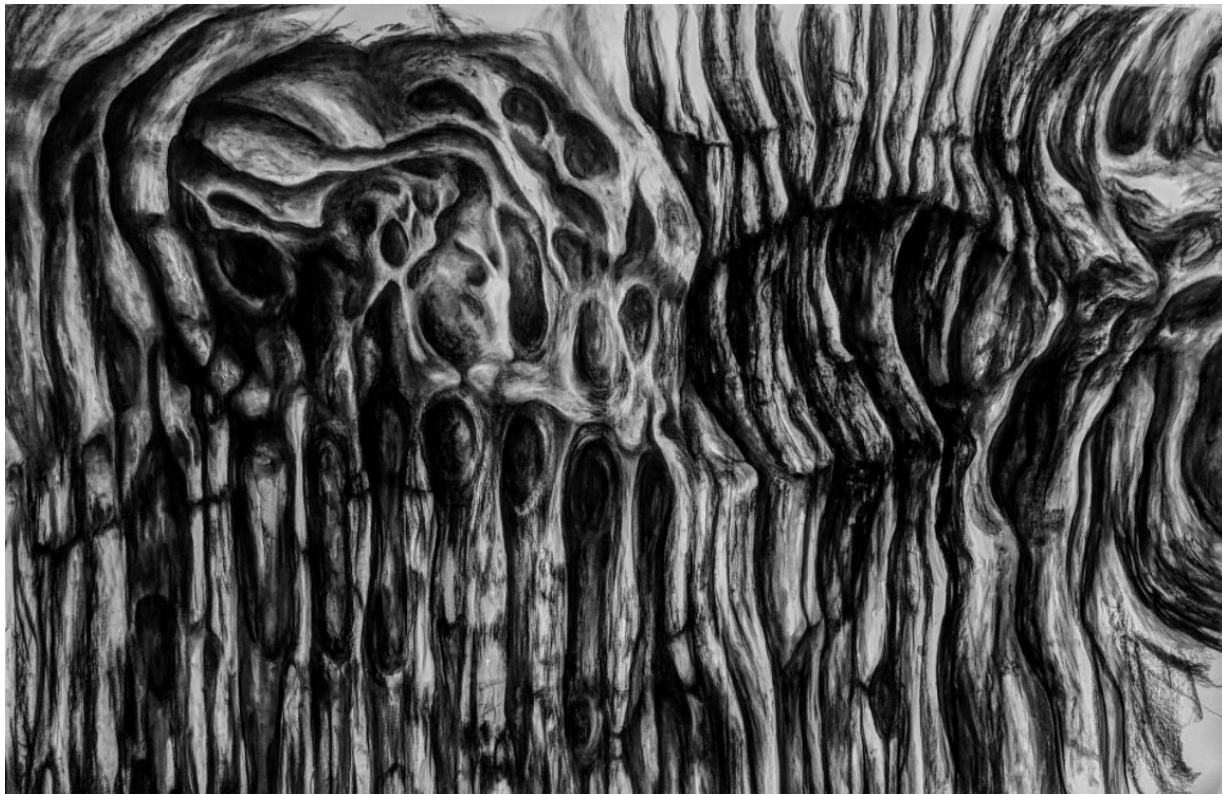
## Appendix C- Drawings



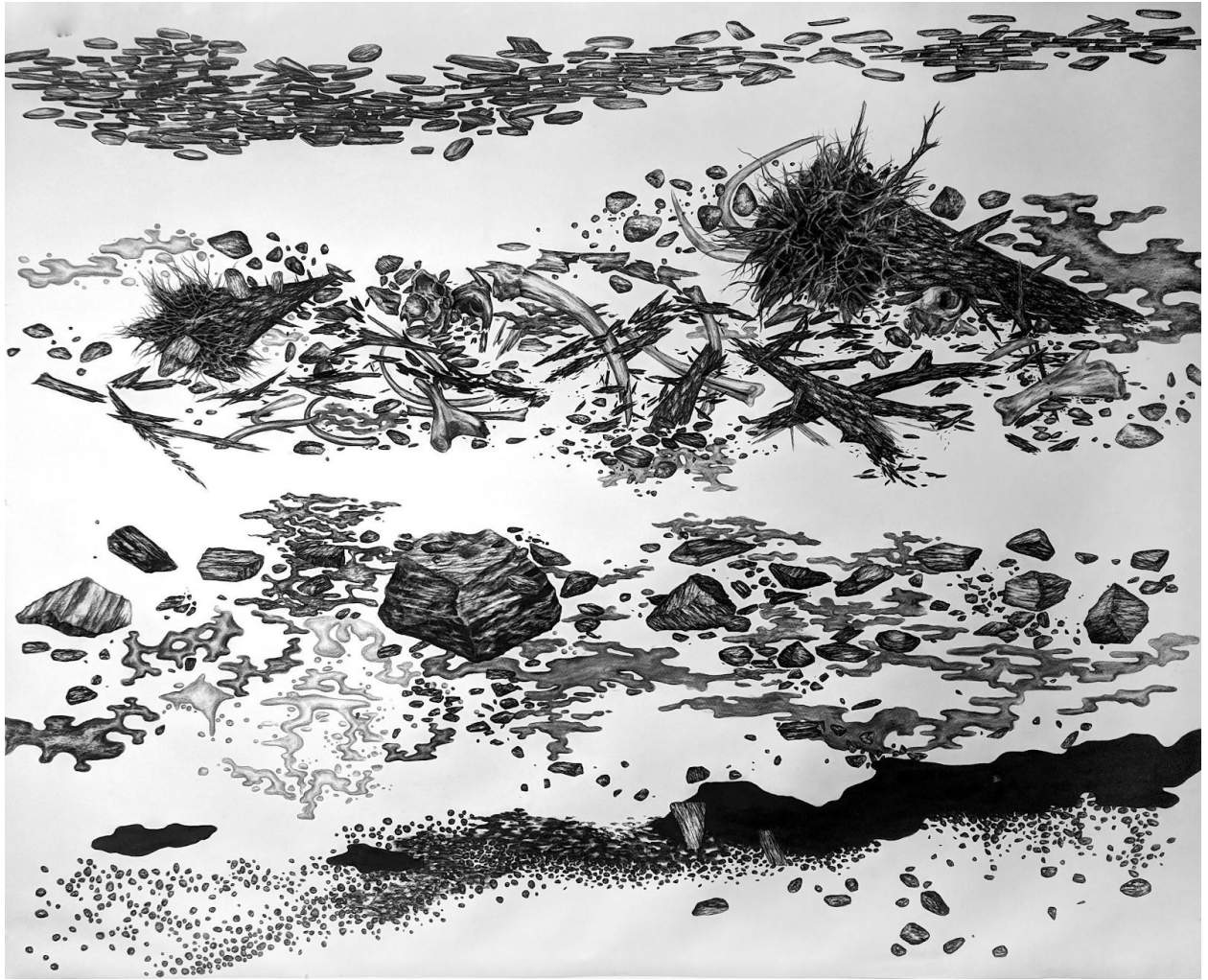
(fig. 11) Drawing, 10x12 feet



(fig. 12) Drawing, 4x6 feet



(fig. 13) Drawing, 4x5 feet



(fig. 14) Drawing, 10x12 feet

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