Essay

Temperate Movements: Artistic Responses to Climate Vulnera-Bility in the Canadian Arctic

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Temperate Movements: Artistic Responses to Climate Vulnera-Bility in the Canadian Arctic

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Abstract: 'Temperate movements: Artistic Responses to Climate Vulnerability in the Canadian Arctic' uses examples and methodologies from contemporary art and theory to think through the impact and legacy of Arctic Sea ice melt upon Inuit culture. Here, the work of Inuit artists Eldred Allen and Maureen Gruben illustrates how melting Arctic Sea ice maybe considered as relational space best understood through a cultural, rather than an exclusively scientific and data-oriented relationship to global sea rise level. Such a cultural perspective, which emphasizes the interconnection between humans, animals, and the environment, can counter dominant climate change imagery which tends to homogenize and de-socialize the Arctic as a single concept. The work of these Inuit artists is also considered as outreach to non-Inuit communities, both in terms of photographic art forms circulating in 'southern' contemporary art contexts, as well as becoming 'novel' indexes of climate vulnerability and resilience.

Keywords: Inuit photography; climate change imagery; Arctic Ocean; melting sea ice; Inuit Nunangat; aerial photography

1. Introduction

Melting Arctic sea ice has become a dominant visual motif of both the climate crisis and the consciousness of the Anthropocene[1], wherein ice acts as a material and metaphor whose warming is purported to 'threaten' the temperate weather of the rest of the world.[2] In the 'Special Report on the Ocean and Cryosphere in a Changing Climate' (2019), the Intergovernmental Panel on Climate Change (IPCC), cites oceanic acidification and deoxygenation, ocean warming, sea-rise level, cryosphere changes, and extreme weather events as key outcomes of anthropogenic activity.[3] Arctic Ocean Sea ice – which factors critically in this assessment - has been depleting rapidly since the 1980's, with new records set for thinning ice every year and alarming predictions of an ice-free summer estimated 'at least once before 2050' by the Sixth Assessment Report of the IPCC in August 2021.[4] The extreme effects of 2023's El Niño, which brings warmer waters through the Pacific jet streams to the north, are exasperating what has become the hottest year on record for the Arctic, with a new estimation of ice-free summers now expected as early as 2030.[5] The rapidity of melting ice is also re-shaping the Inuit coastal map and its impact on Indigenous lifeways is arguably felt more acutely than anywhere in the world; an important reminder that the Anthropocene is both uneven and acutely impactful on vulnerable communities.[6] For the Inuit, these problems include not just accelerated melting of sea ice and the prospect of year-round shipping, but also the 'invisible' pollutants that travel from air and water from the south to the north; as well as the exchange of temperate waters from the Atlantic and Pacific oceans which are encouraging new passages for migratory species and disrupting entire ecosystems.

With the warming of the Arctic at a rate of twice that of the rest of the globe - a phenomenon known as 'polar amplification', multi-year sea ice has thinned dramatically, exasperated by 'albedo' effect or 'positive' feedback' which further warms the ocean through the suns' rays.[7] Due to rising air temperatures and warming ocean incursions, the melting of sea ice is not only creating catastrophic extreme weather on a global level, but as the ice melts, new navigational routes are created. Primarily associated with new shipping routes through the Northwest Passage, which is now

estimated to be ice free for much of the summer months within 15 years (2035)[8], the Arctic climate crises is being exasperated by neo-colonial aspirations for industrial development, resource extraction, and even tourism – mostly under the umbrella of the highly contestable term 'Blue Growth'.[9] Resulting conflicts over access and rights to so-called 'natural resources' within the context of ice-free conditions in the Arctic is being well observed; authority of the Northwest Passage and the continental shelf around the Canadian Arctic Archipelago in particular are hotly contested as these legal rights are partly reliant upon the physical characteristics of ice shelves and ice islands.[10]

Extensive warming in the Canadian Arctic has specifically instigated the demise of ice shelves that encircle the high Arctic and its tidewater glaciers, meanwhile a region such as Ellesmere Island in Nunavut (Canadian Arctic Archipelago) - has lost over 90 percent of its ice shelf over the past 100 years, with little hope of them regenerating.[11] Thus, as the Arctic warms, so too do the pan-Arctic coastal and sub-arctic regions of Inuit Nunangat – the 'lands, waters and ices of the Inuit people'[12]. According to the Inuit Tapiriit Kanatami (ITK), the national representative for the 70,000 Inuit in Canada, 'most Inuit live in 51 communities spread across the Inuvialuit Settlement Region (Northwest Territories), Nunavut, Nunavik (Northern Quebec), and Nunatsiavut (Northern Labrador)'.[13] With the Inuit experiencing dramatic sea ice loss, unpredictable mobility, and disappearing glaciers, permafrost thaw, coastal erosion, and extreme weather – it is difficult to find specific regions which *aren't* impacted by climate change.[14] Ultimately, the Inuit coastline is being rewritten, with dramatic knock on effects for Arctic ecosystems, Inuit traditional food culture, heritage, economy, and the right to geographical movement.[15] The significance of thinning and disappearing ice upon the Inuit cannot be underestimated, 'For Inuit' argues Natan Obed, President of the Inuit Tapiriit Kanatami (ITK), 'sea ice is not only a critical habitat for many of the species that sustain us but is also a necessary part of our natural infrastructure and is key to our mobility'.[16] The ITK argue that the detrimental effects of ice-free and unpredictable ice conditions upon local coastal and marine ecosystems have yet to be fully understood by the 'South' in general, and especially by the scientific community – which is often regarded as failing to share its knowledge.[17] Yet, the impact of rising temperatures upon Inuit Nunangat - which comprises of 72% of Canada's coastline, are as Obed argues 'existential and violate our fundamental right to a safe and healthy environment'.[18] Very recently, the Inuit Nunangat Policy (2022) was approved stating that the Federal system must recognize the region of Inuit Nunangat, the Inuit homeland, which includes not just 'land', but sea-ice, freshwater and marine life, its right to self-determination in coastal and marine areas – both inland and offshore, as well as the right to interdependence with its ecosystems, by the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP).[19]

Yet, the ongoing climate challenges in Inuit Nunangat are tremendous, involving not just a re-mapping of the coast, but deadly situations for food harvesting and transport. Inuit communities in coastal regions of the Arctic and subarctic regions have relied upon predictable seasonal freeze-thaw cycles of sea ice for their local economy, for traditional food harvesting, and for connections to the South.[20] Up until recent times, Inuit lived on seasonal ice-covered coastal zones, often describes as the Inuit 'highway'[21], but today, as Shelley Wright, Professor of Indigenous Studies argues, this occupation has been reduced to short hunting trips, the ice too precarious to rely upon.[22] It is little wonder, that the coast, sea, and ice factor as central to Inuit visual culture, with the creation myth of Sedna – the half woman, half fish sea goddess[23] being a prominent image in both traditional and contemporary Inuit art. Recently, her image has been used to convey the impact of climate change upon the Inuit; in Floyd Kuptana's *Sedna Lamenting the Loss of Sea Ice*, 2007, (Brazilian serpentine, antler, wood, horsehair and metal, 55 x 89 x 44 cm), Sedna is, as Susan Hoffmann Fishman describes, an image of climate hope: 'the Sedna figure has become a boat rescuing those affected by rising seas. With her propeller located in the bow of the boat, her normally beautiful hair reduced to a few strands and her arms rowing backwards, she is the expression of a "world in trouble'.[24] In Ningiukulu Teevee's *Untitled (Sedna by the Sea)*, 2001–2002, (ink on paper, 50.6 x 33.1cm), by contrast, Sedna is imaged smoking with empty alcohol bottles around her as she watches trucks dump sewage into the sea.[25]

As existing multi-year ice melts dramatically - creating more icebergs, ice islands, and fragmented formations that are floating 'away into the high seas, beyond the sovereign reach of the

State of origin' as Suzanne Lalonde[26] argues, what becomes of Indigenous *survivance* – the active sense of presence over disappearance articulated by Anishinaabe critic and writer Gerald R. Vizenor?[27] Inuit photographer Eldred Allen from Rigolet, Nunatsiavut, in northern Labrador (NL), and Inuvialuk artist Maureen Gruben from the Tuktoyaktuk, Inuvialuit Settlement Region, (NT) both engage with the impacts of global heating upon sea ice in the coastal regions of Inuit Nunangat. Despite their vast geographical distance – from the easterly point of the Labrador Sea (Ualiniup Tariunga) to the most westerly point of the Beaufort Sea (Lâbradorip Imappinga), these artists highlight the significance of their marine culture and history on an ice territory, and therein speak of both common and unique local challenges. Rising sea temperatures, the loss of land fast ice, storm surges, coastal erosion, and ocean acidification are shared, but their impact upon Labrador's deep ocean ecosystems, and Beaufort's freshwater gyres and melting glaciers present differently. The work of these two Inuit artists, which often incorporates photographic aerial imagery, engages with the unpredictability of surface sea ice as a visual motif, but therein considers the role of ice within culture, heritage, food harvesting, survival, and storytelling that are at once part of a deep cultural heritage, as well as particular to the ice shelves and basins where they live.

I am interested in how these artists engage with ice loss, not as a signifier of environmental data, but as a material, a home, a symbol of ancestry, and of possible futures that can run counter to the data driven aerial imagery that dominates Arctic climate discourse. Within this discussion, I consider how images of ice, particularly from an aerial perspective, have been racialized in part by climate science, and ask how can images of Arctic Sea ice by Inuit artists talk back, reframe the dialogue, and allow us to think differently? In doing so, I discuss how these artists may provide a counterpoint to the representational values of quantitative data driven climate imagery, through personal knowledge and histories of ice, ideas of self-determination, and ability to shift the dislocating lens of aerial Arctic photography away from the macro, to the intimate and cultural.

Whose ice? Aerial mapping of disappearing ice

In recent years, evidence of 'disappearing ice' in the Arctic mostly comes from remote sensing, and mainly from automated satellite images at 30-m, known as LANDSATs or AVHRR's which capture 1km resolution.[28] Satellite and aerial drone photographs have helped to demonstrate the thinning and fragmenting of sea ice, calving glaciers and breaking ice sheets over time spans of time or so years, while popular media including films like *Chasing Ice* (2007)[29] by James Balog, have focused heavily on global heating as an Arctic problem, often contributing to a catastrophizing media discourse of imminent climate collapse.[30] Satellite observations of the melting of Arctic Sea ice began in the late 1970s, intensified in the 1990s with significant increase of loss of physical ice and increasing rates of thinning, and have recently created a clear link between polar warming, melting sea ice and a darker Arctic Ocean.[31] NASA has been recording the thinning and fragmentation of sea ice and ice shelves since the early 2000s primarily using satellite photography, the results of which are presented in their 'Images of Change' project, an interactive website which allows viewers to 'swipe' a panoramic aerial map to reveal a dramatic before and after imagery. As an example, their comparison of pan-Arctic Sea ice coverage contrasts 1984 to 2012, reveals an 'astronaut's view' of minimum sea ice had halved in this 40-year span.[32] NASA's measures of physical changes are significant and impactful, much like the work of *Project Pressure*, whose focus is that of photographic representation of melting glaciers – often in the form of exhibitions,[33] a kind of trending image making of the melting North. However, what these images do not reveal any engagement with local ecosystems and the Inuit communities who live and work in dialogue with disappearing ice and glaciers. Subsequently, do these aerial 'surface' readings contribute to an apolitical framing of geography as exclusively physical and beyond the social? In other words, do they create an image of the Arctic as a single, definable concept, which signifies global climate change and inadvertently perhaps, rehearses colonial assumptions of terra nullius – the discourse of a vast white 'North', empty, never changing, and ready for the taking.[34]

The aerial view has dominated the US military complex from the black and white war game scenario of the First Gulf War to the current use of remote control Unmanned Aerial Vehicles (UAVs) whose clear imagery brings the 'target' into identifiable and calculable distance.[35] Peter Adey argues that aerial mapping has strong historical roots in the 'very genesis of modern systems of

control, and the coeval development of the target'.[36] Adey states that 'aerial epistemologies' were ultimately of use within the violent interruption and functioning of a community. [37] Aerial viewing then shaped not only the modern imagination, but played a distinct role in modern territorialization, colonization and more recent attempts to extraction resources from land and sea. NASA's Arctic representation in 'Images of Change' and other related data-oriented collections of scientific discourse create important meta narratives about global heating, yet they can also universalize the Arctic as the beginning and end of the climate crises, and with it, the particularities of the Indigenous peoples and more-than-human kin that live there. Such instances of 'managerial science' as dAXunhyuu (Eyak, Alaska Native) geographer Jen Smith Rose argues, elevates concepts of legible climate data as pushed forward over and above any possible local aesthetic and poetic response.[38] Rose Smith has traced the racial history of ice in Arctic spaces, and the concept of *temperate-normativity* to describe the historic trajectory of how so called "'proper' civilizations are said to arise from settlements in temperate locales that depend largely on cultivation via agricultural practices."[39] It follows that ice, with its challenges to habitat, is racialized because of its non-temperate or extreme climate, subsequently giving rise to a designation of nomadism and movement as 'pathological'.[40] In the contemporary era, the idea of *temperate-normativity* is threatened by the melting of the Arctic which "unsettles a temperate world" and negates the self-determinism of Indigenous peoples and their relationships with more-than-human kin. [41]

Breaking Ice; Entangled Histories

Climate data visualizations of thinning sea ice often explicitly draw attention to *global* climate concerns while also homogenising and objectifying the logic of the 'settler colonial gaze'.[42] The continued logic of surveillance and erasure of ice as a central material fabric of Inuit culture is being challenged in contemporary Inuit art. Here, I consider Inuit artists and how they reintroduce notions of agency to visual climate change studies: and specifically, challenge epistemological models, networks, and objects structures, to present different and perhaps more complex entanglements. In the context of accelerated climate change, the melting of sea ice is a threshold that speaks most of an uncertainty of the future and elicits a gesture of communal, global responsibility. It is no wonder then, that the 'bird's eye' view of early coastal Spring ice break up is so significant in the body of work by Inuit artists like Eldred Allen.[43]

Eldred Allen, an Inuit photographer, is interested in how aerial drone imagery can give a new 'vantage point to a traditional lifestyle'.[44] Allen, who describes himself as an 'accidental artist', is from a small Inuit community called Rigolet, Nunatsiavut, on the north coast of Labrador, (Figure 1). He primarily creates mapping imagery using aerial drones, hand-held 360° photosphere cameras and 3D modelling of the coastline and its habitat.[45] He has worked as a GIS specialist for local government, has his own drone business, produces daily recordings of sea ice changes which he shares with the local community through social media, and since 2018, has been publishing his work through wildlife publications like Canadian Geographic, as well as producing work for gallery exhibitions in Toronto and Montreal amongst them.[46] Rigolet, the southernmost Inuit community in the world, is a coastal region of the Labrador Sea and a few kilometers from the subarctic tundra, with a community comprising of around 310, and is often frequented by climate scientists. The Inuit of Labrador were the first Inuit group to create a model of self-governance in 2005 with the Nunatsiavut Inuit Government.[47] Local, traditional communities are reliant on sea ice to navigate, and maintain traditional cultural practices including visiting summer and winter cabins for hunting.

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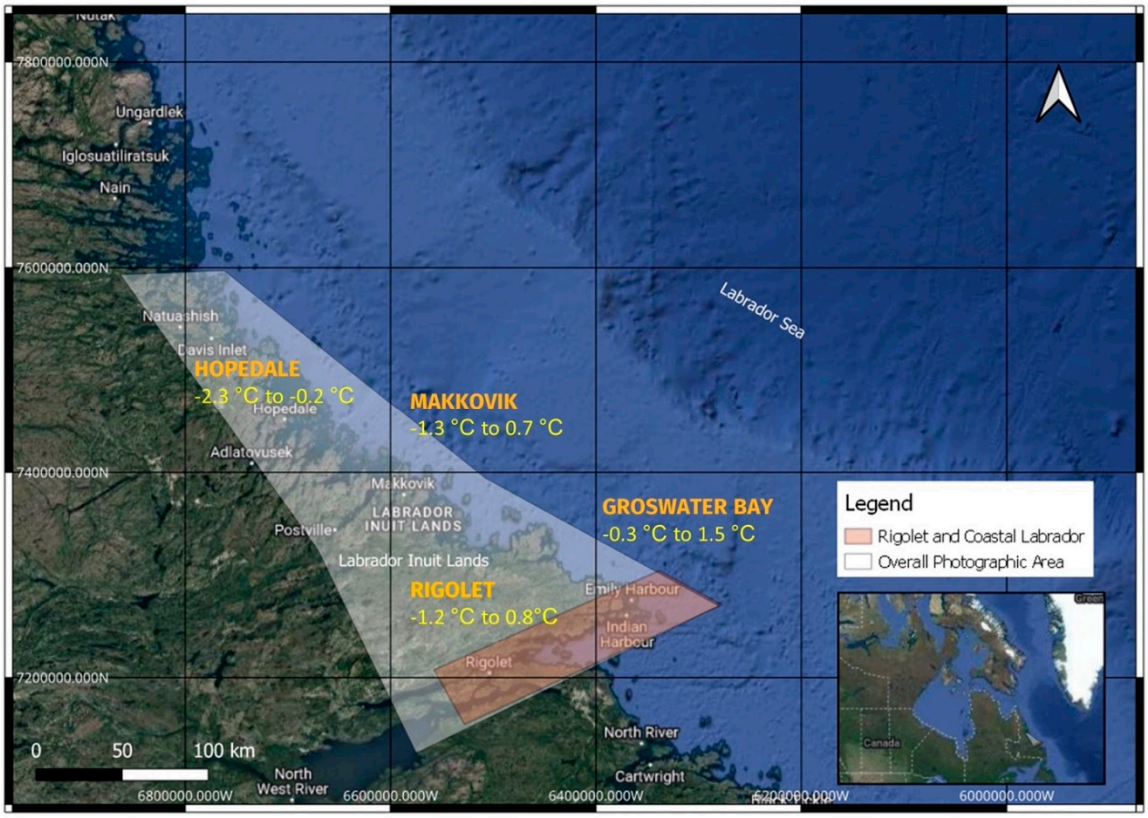

Figure 1. Eldred Allen Overall Photographic Area, Coastal regions of Rigolet to Nain, Labrador, Eastern Canada. Data from Climate Atlas of Canada (https://climateatlas.ca/).

Allen is one of just a few Inuit artists working with aerial and drone technology, in part due to bandwidth restrictions.[48] Allen has produced aerial images of both sea ice fragmentation as a signifier of the impacts of climate change as well as the coast as a habitat, home and ecosystem – a culture, if you like. Allen's photograph *The Breakaway*, 2019 depicts an aerial image of ice in coastal waters as it begins to cluster, solidify, and form a sheet along the shoreline.[49] In many senses, it's an image which details the complex materiality of coastal sea ice and the vast range of its colours - from brown grey to silvery green, and bright white against the darkest blue-black ocean. The photographic image provides a counterpoint to the dominant media image of a flat white Arctic, in part because of its sense of presence in which the contours, textures and colours of the ice are manifest. Part of the work's visual capacity then, is that ice is rendered as an active agent – a material and by implication, cultural assemblage of time and traditional Inuit practices therein, which act counter to the objectification that (photographic) climate data visualizations can inadvertently give rise to. Furthermore, after discovering that Google Earth did not image certain locations in his region, he decided to create images of sea ice melt for the local community which he shares with his community through social media.[50] Allen creates images of bodies of water north of his community, which must freeze adequately for community to reach their hunting cabins. Ice conditions have become notoriously unsafe and with it, a significant disruption of traditional knowledge systems. In an aerial photograph called *Support*, December 29th, 2021, we see the depiction of a snow mobile track imprinted on the ice, paralleled with multiple footprints. It was taken immediately after a community member on his snowmobile had fallen through thin ice and been rescued by onlookers - the snowmobile was lost, and the man was saved.[51] The accompanying image, *Change*, December 29th, 2021[52], depicts the hole in the ice that the community member and his snowmobile fell through – the vantage point suggests that the hole is only observable once you are literally on thin ice, and not from the shore. This is one of the many reasons that Allen produces daily and yearly aerial photographs, with specific attention to the Spring melt in May and the precarious sea ice of Winter.

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Revisiting specific coastal locations in May of every year allows him to observe the changing coastline, in which a 'couple of hundred feet' disappears every year.[53] Works like *Broken Road,* 2021[54] (Figure 2), which depicts an ice road fragmenting into the sea, then do not depict a singular extreme weather event or provide a computational-numerical map of 'environmental change', but asks the viewer: what does it mean to reverse land and sea, to literally see the blurring of land, sea, and comprehend the significant impact this has on local Inuit communities and its traditional cultural practices.

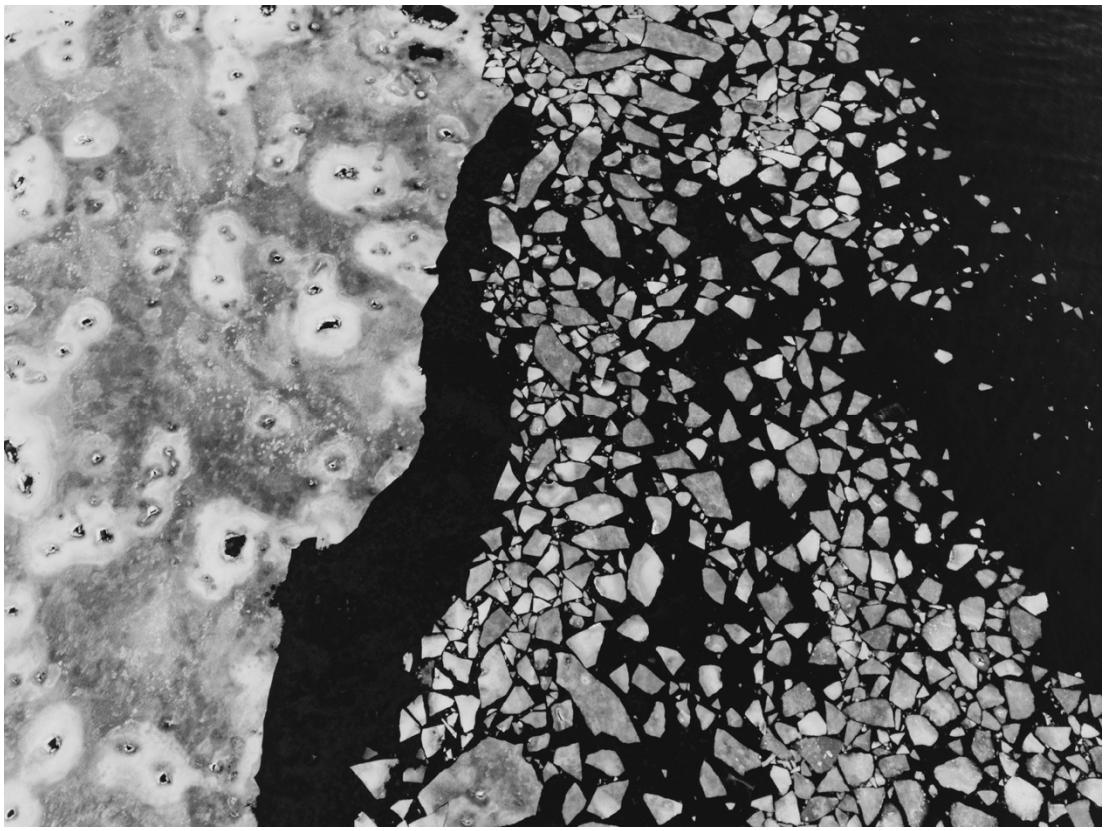

Figure 2. Eldred Allen, *Broken Road*, 2021, Digital Photograph. Copyright Eldred Allen, courtesy the Stephen Bulger Gallery.

Images of seals and the seal hunt are prevalent in traditional Inuit visual culture due to the centrality of seals in Inuit culture and lifeways: from lithographic prints and drawings, to clothing and tents. Following this tradition, Allen features many images of seals, including *Moon Seals,* April 16th, 2021, and *Sealed Joke,* April 21, 2021, and an image called *Mine*, May 2nd, 2020. In the latter, an aerial photo depicting three seagulls on top of a triangular ice float, one of which is eating the remains of a seal, whose pelt, drips red blood on the edge of the ice.[55] It is a striking photograph, which speaks more of the vibrancy of this entangled coast, where tradition, culture, and complex ecosystems take place, guided, and supported by predictable weather patterns. With the ever-increasing wet winters, which can impact everything from travel to firewood used to heat homes, to the precarious Spring melt, and more recently, the heatwaves of summer, is it little wonder that there is significant interruption to traditional harvesting practices. The seal hunt has played a central role in traditional food sources, garments, floats, and shelters for Inuit, as well as through international trading, which prior to the 1980's provided a major source of economic stability. The significance of seal hunting as an economic activity was much thwarted by animal rights' activists in the 1970s and 1980s. Both the tradition and challenges of seal hunting are chronicled in the documentary, *Angry Inuk,* 2016, written, presented, and directed by Alethea Arnaquq-Baril. Here, Arnaquq-Baril investigates the histories of animal rights' activists in the South against the seal hunt; arguing that the animal rights perspective ignores the tradition of seal hunting around the Arctic. She argues that the activists focussed

exclusively upon Newfoundland and Labrador, and primarily white coat seal pups (subsequently banned), while paradoxically stating that seal hunting is a 'massive' and 'evil' industry.[56] The film acknowledges that seal hunting has been central to coastal Inuit life and culture for over a hundred years, but in ways that are familial and community oriented and in which every part of the animal is eaten or used out of necessity and thus is both ethical and sustainable.[57] Both Allen and Arnaquq-Baril's work are also testimony to coastal Arctic regions and ecosystems that will continue to morph, reshape, and even disappear as global heating inundates ice with water. They also demonstrate the importance of connecting Inuit tradition to global technologies in their own terms and in dialogue with how dispossession of land and resources continues within challenges that global heating and environmental degradation brings.

Allen's work speaks of the importance of ice as a relational material, a kind of animated, living form, whose sensorial descriptions captured in his work act as a new kind of mapping of ice which is boundary-less, and suggestive of that which is underwater and above – a vast ecosystem. It also highlights the significance of ice and the lifeways of Inuit hunting traditions. As such, it is worth considering Allen's other bodies of work which include his *Resemblance* series,[58] which he began in 2019 and continues as an ongoing project. This series comprise of black and white portraits of Inuit Elders from Rigolet – 49 to date[59], and present a series of intimate portraits that capture faces that are smiling, warm, and sensitive to the keepers of traditional knowledge. *Resemblance* is suggestive of a connection of the past to present, and present to future – in part because of the significance of oral tradition in Inuit culture, but also as Inuit literature expert Keavy Martin states, Inuit oral tradition is a form of literature that is, she states, 'rooted in geography'. Here, Martin argues that 'the state of *silatujuq*—having wisdom—aligns itself practically with a close understanding of one's *sila*, one's environment' – in other words, seeing, listening and reading Inuit culture is a necessary part of understanding geography.[60] Read side by side, these two bodies of work provide an interesting counterpoint between long standing traditions of Inuit art practice which honours the stories and myths passed on by community Elders,[61] the land and seas upon which they live, pushes back and even obliterate concepts of 'environmental' ice, by acknowledging the communities of people who live in relation to seasonal ice. In this regard, Allen's works are very much the expression of *survivance,* in which the portraits maybe considered 'intergenerational connection' and the sense of 'presence and resistance'[62] self-representation and determination that are beyond the simplified binary logic of genocide and the bareness of survival, or as Indigenous scholar Angie Morrill also suggests as a means of 'reading against disappearance'. [63]

Inuvialuk artist Maureen Gruben's site specific artwork also engages with ice as a relational space with embodied links to the past, present, and future. Maureen Gruben uses materials including ice, polar bear fur, seal skins, beluga intestines, and sleds from her home Tuktoyaktuk, adjacent to the Beaufort Sea (Figure 3), in the Western Canadian Arctic which interact and transacts with plastic, resin, and metallic tape – detritus from the south.[64] *The photographic installation, Aidainnaqduanni, Morning*, 2020, (archival inkjet on Hahnemühle) depicts three polar bear hides hanging on yellow survey tripods.[65] Their draped forms suggest a three-dimensional presence but the protruding tripods, found in Tuktoyaktut, are waste products of the Arctic oil drilling projects which have ceased operation since. *Aidainnaqduanni, which means we are 'fully home'* in Inuvialuktun, sees the return of the hides to the ice, the warm pink tones of the morning sun illuminating the golden tones of the fur and ice. Yet, of note is that all Gruben's work is clearly situated or cited in the landscape of the circumpolar North – not as a backdrop but as a living space of reflection, knowledge and sharing.

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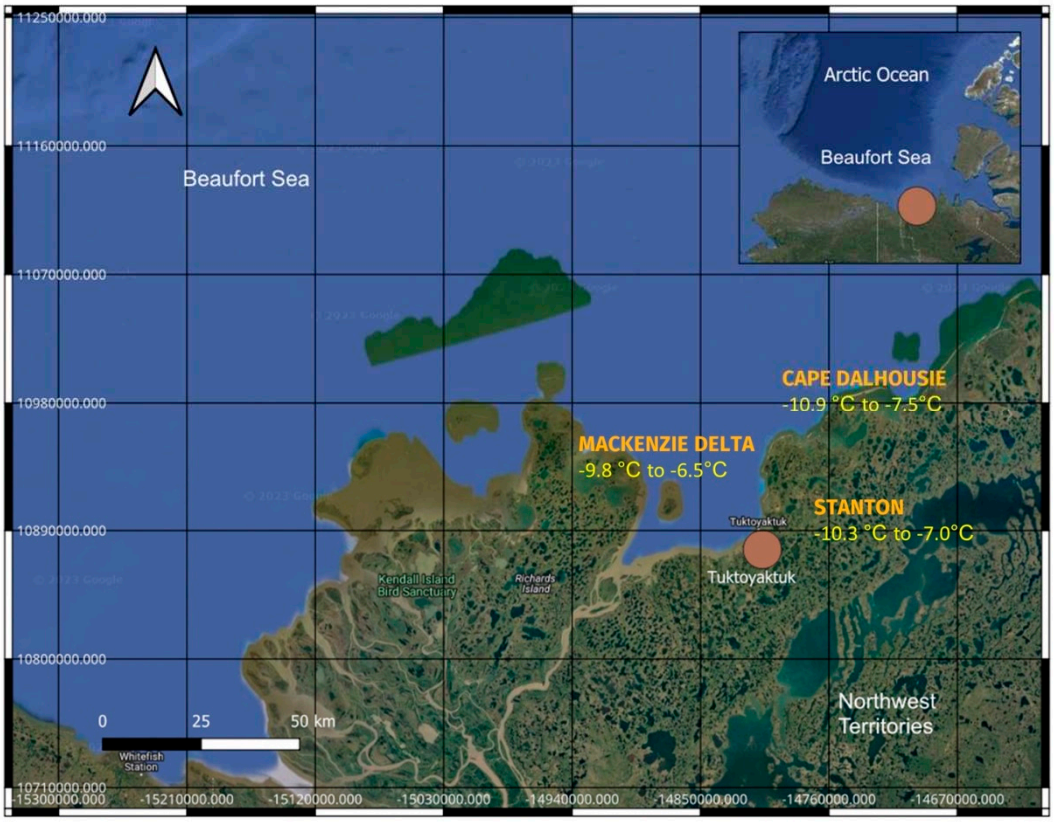

Figure 3. Map of Tuktoyaktuk and the Beaufort Sea, NW Territories, Western Canada. Data from Climate Atlas of Canada (https://climateatlas.ca/).

Gruben's art installation *Moving with joy across the ice while my face turns brown from the sun* (2019) comprises of 14 standing, hand-built sleds situated on the ice, and photographed with the bright light of the sun piercing through. There are no people or presences of objects, just the sleds standing upright on the brilliant white ice. Such family sleds are used to carry belongings needed to live as they cross the frozen tundra to the Husky Lakes to set up camps for the spring fishing season. Here, Gruben reflects upon the solidarity of the community past and present and the cultural significance of sledding for ice fishing literally in the face of climate change.[66] Therein the materiality of ice gives rise to political and cultural entanglements through presence of the sleds which in turn act as a witness to the interconnections between home and ecologies left vulnerable or even in ruins by global climate change.

In *Stitching my Landscape* (April 19-25, 2017)[67], Gruben wove a red broadcloth over the ice in the Pingo National Landmark site near Tuktoyaktuk in a performative act to literally stitch the ice back together.[68] The performative installation, also recorded and produced as a video (6 min 10 seconds)[69] is largely shot from an aerial perspective and shows Gruben's red zig zag woven through the ice of a canal surrounding the Ibyuq Pingo in the Pingo National Landmark, on the shore of the Beaufort Sea and Arctic Ocean - a region experiencing severe climate related impacts. As she sutures the ice shut tight, she creates an intimate engagement with ice, its historical role as a form of passage and its impact on future generations which maybe violently dislocated because of global warming. As the artist highlights in this work - the idea of ice as a base of community and a commons' offers a means through which to reimagine cohabitation, an altruistic 'kin-relatedness' as Sylvia Wynter argues, in which human and more-than-human are entangled with and through turbulent oceanic warming.[70] In a recent work, *Untitled, (in Process)*, 2022, Gruben employs to large piece of red cloth and situates them in the form of a cross on the ice. Photographed from above it resembles the symbol of the 'Red Cross' an international signal of warning, danger and in the need to protect, in this case the rapidly eroding coastline of her home, Tuktuuyaktuuq/ Tuktoyaktuk, an

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Inuit Nunaat a hamlet on the Beaufort Sea.[71] The Beaufort Sea has been well acknowledged as presenting the most decisive coastal erosion in all the Canadian Arctic. The site-specific installation was placed on the ice for two months, and as the ice below melted, so the red dye of the cloth emblazoned the image of the cross on its surface and bleeding into the surrounding waters.[72]

Crossing Boundaries

The issues faced by Inuit communities in the North then are not limited to their own physical and mental health in the face of melting ice, but also the health and survival of their food sources as Sheila Watt-Cloutier, former chairperson of the Inuit Circumpolar Conference, and climate activist has stated: 'on a human level, we are being poisoned from afar', she argues, 'it is predicted that in some 50 years, polar bears, walrus and some species of seals will be pushed to extinction. What will be left of our culture if this comes to pass?'[73] Inuit observation of physical abnormalities in seals for instance, have been well documented – with seals being born without hair and having other skin disorders.[74] Most pollutants come to the Canadian Arctic from outside of the region, and in many cases, from other continents.[75] Contaminants including but not limited to heavy metals, mercury, polychlorinated biphenyls PCBs, DDT and other pesticides have primarily travelled to the Arctic by air and water, and pass through Arctic animals such as caribou which are then eaten by Inuit communities.[76]

Heavy metals like mercury, PCBs, DDT, and other pesticides which have been known to have entered the bloodstreams of Inuit and their traditional food sources since the late 1990's.[77] In the early 1990's, Quebec government studies that looked at rural Inuit communities versus urban Inuit communities, saw that infants in rural areas who relied on milk from mothers who had a predominantly traditional diet, experienced higher rates of meningitis, bronchitis, pneumonia, and one out of four Inuit children had chronic hearing loss as a result of pollutant-based infections.[78] A subsequent 1997 study by the Arctic Monitoring and Assessment Program (AMAP) found that contaminant levels in Arctic food webs was found to be 10-12 times higher than in more other temperate region, and that subsequently, 'Indigenous people who may rely on traditional diets are likely to be more exposed to several toxic substances than the majority of people elsewhere in the world'.[79] Since the early 2000s, physical abnormalities in Arctic animals have also been noted by Elders as a result of organic pollutants becoming a constant part of their local ecology and diets, "Some elders and hunters in Iqaluit have reported physical abnormalities afflicting the seals they catch, including some seals without hair 'and seals and walruses with burn-like holes in their skin[s].'"[80] The chain of circumstances results in the potential of contaminated food sources for Inuit communities, as well as the risk of fetal and sexual organ development in the populations of Arctic animals.[81] The Stockholm Convention on Persistent Organic Pollutants and the Stockholm Protocol (2000) sought to limit the use and dissemination, and even to phase out persistent chemicals,[82] in part through the establishment of a network of regional centers around the world.[83] Yet, the Arctic is particularly sensitive to pollutants due to the extreme cold which slows the decomposition of toxins essentially acting as "a cold trap, collecting and maintaining a wide range of industrial pollutants, from PCBs to toxaphene, chlordane, and mercury."[84] While much analysis has yet to be completed on the combined effects of this toxic slurry,[85] these types of pollutants cause catastrophic health defects for humans but also for pregnant Arctic animals, leading to deformed fetuses, as well as immunity and healthy growth in young mammals.[86]

What makes the Arctic so sensitive to pollutants is according to Bruce E. Johansen that the 'cold climate slow the natural decomposition of these toxins, so they persist in the Arctic environment longer than at lower latitudes', with the Arctic essentially acting as 'a cold trap, collecting and maintaining a wide range of industrial pollutants, from PCBs to toxaphene, chlordane, and mercury.'[87] Johansen further elaborates that strong air currents carry dioxins from the South to the north with relative ease – a factor which has undoubtedly intensified with the accelerated and intense storm activity. Inevitably, the mobility of toxins is increased in such conditions, while the mobility of mammals and birds who are crossing the once obvious boundary of a cool Arctic through increasingly warmer waters, bringing a new and complex conjectures of species to the ecosystems of the North. As Cheryl Katz describes: 'driving heat, nutrients, and temperate species to new polar

latitudes – with profound impacts on Arctic Ocean dynamics, marine food webs, and longstanding predator-prey relationships.'[88] Referred to as the *Atlantification* and *Pacification* of the Arctic Ocean; the northward spread of more water, more warm water and subsequently - southern species such as phytoplankton and even Orcas through the temperate waters is a striking offshoot of this phenomenon.[89]

Conclusions

This essay has considered artistic responses to melting ice in the Inuit Nunangat and has used methodologies that lean upon contemporary art theory, as well as a recognition of Indigenous guardianship, stewardship, and scholarship. Here, the work of Inuit artists Eldred Allen and Maureen Gruben – both of whom work with aerial photographic imagery have been considered to think through ideas of Arctic Sea ice as a cultural relational space. I argue that such images which are localized, personal, and based in traditional Inuit knowledge and culture, while also embracing contemporary technology, can act as a counterpoint to the historically militarized vision of data-oriented relationships to sea rise level which tends to be used primarily to consider the impact of the melting Arctic on the rest of the globe. Such Inuit cultural perspectives emphasize interconnection between humans, animals and the environment that work outside of such didactic observation systems.[90] Finally, such artists' work may also be considered as outreach to non-Inuit communities, both in terms of photographic art forms circulating in 'southern' contemporary art contexts, as well as becoming 'novel' indexes of climate vulnerability and resilience.

Herein, there is an argument in favour of specificity of place - highlighting localized and individual voices that engage with the pressures of the anthropogenic activities of the Arctic, matters. Climate narratives of the Arctic can preclude time, specificity of place, noise, people and animals; inadvertently rehearsing the idea of an empty Arctic 'wilderness'. Allen's work speaks of the importance of ice as a relational material, a kind of animated, living form, who's sensorial and time stamped descriptions of disappearing sea ice, act as a new kind of mapping of ice which is more specific, community oriented, and hence, relational. Gruben's engagement with ice is positioned in opposition to the computational renderings of the 'environment' and mapping of Arctic climatic change, to demonstrate an understanding of *climate change* as atmospheric, human, biological, cultural, and linguistic.

Much more could be said about the complex vulnerabilities placed upon Indigenous communities in the Arctic from the geographic and cultural 'South', that are beyond the scope of this essay and my methodological perspective as an art historian. Here, we may also be reminded of Christina Sharpe's pivotal study *In the Wake: On Blackness and Being*, 2016, which considers how the slave ship haunts contemporary Black lives and argues that the 'wake' is a metaphor and material site that can be used as a means of resistance.[91] Perhaps what Allen and Gruben's narratives of breaking and melting ice can do is animate these sites as 'wake' work - spaces of memory, and resistance to dominant visual climate narratives.

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