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Santa Barbara

Contested Arctic:

Cultural Heritage, Abjection, and Environmental Change in Northernmost Alaska

A Dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Geography

by

Daniel J. Grafton

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April 2026

Contested Arctic:
Cultural Heritage, Abjection, and Environmental Change in Northernmost Alaska

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by

Daniel J. Grafton

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Grafton, D., Quandt A., and Chu, V.W. (2025) Iñupiaq Cultural Heritage and Local Perspectives of Environmental Change. *Environmental Research: Ecology*, 4(4). doi: 10.1088/2752-664X/ae23d3

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ABSTRACT

Contested Arctic:

Cultural Heritage, Abjection, and Environmental Change in Northernmost Alaska

by

Daniel J. Grafton

Global climate change is reshaping the Arctic with long-term impacts to both the environment and Indigenous cultures, but to enact sustainable policies addressing these changes a better understanding of stakeholder perceptions is needed than presently exists. By investigating core issues in the Arctic affected by environmental change including intangible cultural heritage, last chance tourism, and portrayals of the region in film, this dissertation challenges prevailing narratives while offering key recommendations for sustainable policy. Three major research questions were developed: (1) How do stakeholders perceive global climate change impacts in the North Slope Borough and the interconnections with intangible cultural heritage and life ways?; (2) How have films depicted Indigenous peoples, and especially women, living in the Arctic?; and (3) How have stakeholder experiences and perspectives of Arctic tourism developed in the region since the establishment of the North Slope Borough in 1972?

To address these research questions, a mixed-methods approach was utilized encompassing qualitative interviews, archival research, and quantitative spatial analysis using Utqiagvik,

Alaska as a case study. Chapter 2 investigates Iñupiaq conceptions of self-identity, expressions of intangible cultural heritage, and interconnections with local environmental change. An historical GIS database was developed for Chapter 3 that revealed spatial patterns in the cinematic cartography of Utqiagvik and the ongoing abjection of women and Indigenous peoples of the Arctic. In Chapter 4, tourist motivations are explored including the role of last chance tourism and how residents perceived tourist motivations differently from the tourists themselves. Results found that documentary and amateur films set in Utqiagvik frequently referenced false histories while subjecting women and Indigenous peoples to abjection, reinforcing colonialist narratives about the Arctic, and outsiders and policy makers need to develop more serious engagements with the region. Narratives of victimization around environmental change in the Arctic also lack nuance, with Indigenous and local people emphasizing their adaptability and resilience. While often cited as a major motivator for tourists, last chance tourism played a minor role in driving tourists to visit Utqiagvik, while a desire to experience Iñupiaq culture was a major motivator.

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Chapter 1. Introduction

No region of the planet will be more affected by global climate change than the Arctic where warming has occurred at rates nearly four times faster than the world (Ford et al., 2021; Rantanen et al., 2022a). Loss of sea-ice, collapsing ice-shelves, permafrost degradation, and increasingly threatened endemic species are reshaping the regional environment (Irrgang et al., 2022; Irvine et al., 2019; Rode et al., 2022). Indigenous and local people of the Arctic are also being significantly impacted by global climate change with increasing food insecurity, damage to infrastructure, hazardous travel conditions, and negative effects on mental health (Grafton et al., 2025b; Lebel et al., 2022; Nikolaus et al., 2022; Philip et al., 2022; Soutar & Wand, 2022). How Indigenous peoples perceive these issues may differ extensively from dominant Western narratives, especially regarding conservation efforts (Peterson et al., 2020) and multispecies awareness (Müller, 2021; Sakakibara, 2020). Thus, understanding how Indigenous and local peoples of the Arctic, as well as tourists and scientists visiting the area, perceive environmental change is essential if we are to enact sustainable policies addressing climate change (Bercht, 2021; Kleinberg & Toomey, 2023; Moerlein & Carothers, 2012).

This dissertation addresses how Indigenous and local peoples of the Arctic perceive and experience the impacts of global climate change on their home by investigating issues of last chance tourism, Indigenous cultural heritage and local identity, and abjection within media representations of the region. Adopting Utqiagvik, Alaska as a case study, this research challenges prevailing narratives about environmental change and tourism in the Arctic while delivering key recommendations for policymakers. Three core research questions guided this study: (1) How do stakeholders perceive global climate change impacts in the North Slope Borough and the interconnections with intangible cultural heritage and life ways?; (2) How

have films depicted Indigenous peoples, and especially women, living in the Arctic?; and (3) How have stakeholder experiences and perspectives of Arctic tourism developed in the region since the establishment of the North Slope Borough in 1972? Each of these studies investigates perceptions of environmental change with consideration for the complexity of Arctic locales and understanding that climate change is just one of many issues facing Arctic communities (Huntington et al., 2019). As outsiders of non-Indigenous backgrounds, we maintained awareness of our positionality with its potential to shape data collection and analysis (Jacobson & Mustafa, 2019; L. B. Johnson, 2015; Reich, 2021).

The first objective examining stakeholder perceptions of environmental change and intangible cultural heritage is the subject of Chapter 2 and is titled, “Iñupiaq cultural heritage and local perspectives of environmental change in northernmost Alaska.” Through unstructured and semi-structured interviews with Indigenous and local people residing in Utqiagvik, this study investigated Iñupiaq conceptions of self-identity, expressions of intangible cultural heritage, and the interconnections with local environmental change to determine key recommendations for local planners and decision-makers. The second objective of exploring how documentary and amateur films set in Utqiagvik portray Indigenous peoples is discussed in Chapter 3 and is titled, “A Cinematic Cartography of Utqiagvik (Barrow), Alaska: Historical GIS and Abjection in the Arctic.” Using extensive archival research to gather both qualitative and spatial data from films, this study revealed spatial patterns in the cinematic cartography of Utqiagvik and the ongoing abjection of Indigenous peoples, especially abjection of Indigenous women. In Chapter 4, titled “Last chance tourism? Revealing true tourist motivations for visiting northernmost Alaska,” the motivations of tourists visiting Utqiagvik are examined. Through qualitative interviews with residents and

tourists, this study investigated the extent of last chance tourism in Utqiagvik and how residents' perceptions of tourist motivations differed from those expressed by tourists themselves. Finally, Chapter 5 summarizes the complete results of this dissertation, provides concluding thoughts, and offers potential avenues for future research.

Chapter 2. Iñupiaq cultural heritage and local perspectives of environmental change in northernmost Alaska¹

2.1 Introduction

Rapid sea-ice melting, collapsing ice-shelves, permafrost thaw, and threatened species have become emblematic of the modern Arctic region (Clairbaux et al., 2024; Gartler et al., 2025; Irvine et al., 2019; Wenzel, 2009). Warming in the Arctic is occurring faster than any other region of the planet resulting in rapid, large-scale environmental change (Rantanen et al., 2022b). As demonstrated by a growing body of work, local and Indigenous perspectives are critical for understanding climate change and initiating sustainable adaptation practices (Bercht, 2021; Kleinberg & Toomey, 2023; Rust et al., 2017). For example, locals impacted by climate change are often vulnerable to negative effects on mental health such as increased anxiety about the future of the environment and lack of mitigation taking place (Soutar & Wand, 2022). This is particularly true for Indigenous people, who are often facing overlapping issues such as food insecurity, unstable housing, and uncertain futures for Indigenous lifestyles (Lebel et al., 2022; Nikolaus et al., 2022). Cultural opportunities, or lack thereof, may have substantial impacts on the wellbeing of Indigenous people (Philip et al., 2022). Climate change is one among many issues facing Indigenous peoples and rural communities, and should be placed in context with these other concerns (Huntington et al., 2019).

Indigenous perspectives often differ from dominant Western narratives, particularly regarding views on animals (Escobar, 2017; Nadasdy, 2016; Sakakibara, 2020) and conservation (Peterson et al., 2020). For example, tourists may perceive an area as wilderness

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while Indigenous and local people may view the same space as a cultural landscape (Müller, 2021). Intangible cultural heritage, the values and traditions of a people, face equal threats from environmental change as do the physical aspects of a culture but significant gaps exist in the literature on this subject (Pearson et al., 2023).

Although Indigenous and local knowledge (ILK) is increasingly accepted as a scientific priority in climate change scholarship and policy, more research is needed to understand Indigenous cultural identity given the diversity of Indigenous cultures and regional differences (Buckingham & Hutchinson, 2024). To address the issues outlined above, including environmental change, it is critical to understand the tension within Indigenous cultures between traditional ideals and the challenges presented by modern society (Condon & Stern, 1993; Good et al., 2021; Trout et al., 2018). Studies on environmental change in Indigenous areas frequently recognize the unique adaptive capabilities of Indigenous peoples (Cunsolo Willox et al., 2012; Herman-Mercer et al., 2019; Huntington et al., 2017). However, many studies focus on the challenges and constraints to adaptation, adopting pessimistic or ambiguous views of Indigenous and local adaptive capacity in these places (Bunce et al., 2016; Malik & Ford, 2025; T. Pearce et al., 2015).

Therefore, the major objective of this study was utilizing qualitative methods to investigate the intangible cultural heritage of Arctic Alaska and the interconnections with environmental change to better position regional planners and policy makers in addressing adaptation strategies. This study sheds light on Iñupiaq perceptions of how their cultural heritage and self-identity intersect with climate change impacts and adaptation, using the town of Utqiagvik in the North Slope region of Alaska as a case study. It further concentrates attention on the everyday impacts of climate change for Indigenous and local people in rural areas, and the

intersections with cultural identity. Our study illustrates the critical role of qualitative research and ILK for achieving holistic understanding of environmental change in regions faced with shifting climates. The findings of this study counter the prevailing narrative of vulnerability and victimhood found in much of the literature (D. E. Johnson et al., 2021; Kumalasari et al., 2025; Malik & Ford, 2025). Instead, this study demonstrates the hopeful and optimistic perceptions of many Indigenous and local residents in Arctic communities, and a powerful belief in their own adaptive capacity.

2.2 Literature Review

2.2.1 Theoretical framework: cultural heritage and senses of place

The cultural heritage of a people includes both the material artifacts and intangible elements passed down through generations. Intangible aspects of cultural heritage refer to oral traditions, shared values, rituals and festivals, social mores, and ILK (Pearson et al., 2023). Discriminatory policies that started during colonial periods, and continue today, including the criminalization of Indigenous cultural heritage and forced assimilation were destructive to many Indigenous communities globally (Gone et al., 2019; Pride et al., 2021). However, reviving or maintaining shared cultural heritage may result in stronger communities that demonstrate mental-health and well-being benefits, particularly for Indigenous youth (Chandler & Lalonde, 2008; Good et al., 2021). Intangible cultural heritage plays a key role in shaping the aspirations and perceived future possibilities of Indigenous peoples (Trout et al., 2018).

Senses of place theory considers what meanings are attached to a place on both the individual and communal level. As Cresswell (2013) notes, early theorists emphasized “the

relationship *between* people and the world through the realm of experience.” Recent scholarship has greatly expanded the theoretical foundation by developing “pluralized and politicized” senses of place that seek to better address disruptions including the COVID pandemic and global climate change (Manzo et al., 2023; Raymond et al., 2021). Erfani (2022) provides a three-theme concept to bridge the transdisciplinary divides in the theory’s application by emphasizing how senses of place exist between individual, community, and social relations that integrate global and local.

Senses of place is an important aspect of intangible cultural heritage and the theoretical framework has applications to a wide range of fields including ecosystem services, urban studies, and community well-being (Gao et al., 2020; Wartmann & Purves, 2018). People may experience a broad range of emotions and outcomes related to their sense of place including positive, ambivalent, or negative relationships with places (Manzo, 2005). Environmental change has a profound impact on people’s senses of place and it is crucial to consider senses of place when developing climate change adaptation strategies (Broto et al., 2010; Cunsolo Willox et al., 2012; Manzo et al., 2023). Indigenous lifestyles result in strong place attachment with many Indigenous people preferring to remain in their traditional homelands even in the face of environmental change (Galappaththi et al., 2019).

2.2.2 Environmental change impacts and adaptation in the Arctic

As described above, environmental change is reshaping the Arctic. Notably permafrost degradation, coastal erosion, loss of sea ice, and negative effects on marine mammals are impacting the North Slope region in Alaska (Irvine et al., 2019; Liew et al., 2020; Stirling & Derocher, 2012). However, it is important to bear in mind that climate change may not be a top

priority for many Arctic residents. A host of more pressing concerns may drive discussion in Arctic communities including food security, transportation, education, substance abuse, and preservation of Indigenous lifestyles among others (Ford et al., 2021; Huntington et al., 2019). Climate change interacts with these other issues often exacerbating the associated challenges but many stem from colonial legacies and predate climate issues (Malik & Ford, 2025).

Environmental change threatens livelihoods and well-being around the planet in a myriad of ways that have resulted in diverse responses by Indigenous and local residents (Schlingmann et al., 2021). In the Canadian Arctic, a range of issues related to environmental change have signaled a need for adaptation strategies including sea ice melting and sea level rise, permafrost degradation, exposure to extreme temperatures, and increasing shipping traffic threatening Indigenous life ways (Vogel & Bullock, 2021). The Russian Arctic has faced accelerated permafrost thawing, hazardous flooding, and the growing threat of wildfires (Ksenofontov & Petrov, 2024). Among the challenges facing Alaska described above are growing concerns for the health and mental well-being of residents (Allen, 2020; Lebel et al., 2022; Tran et al., 2021). In Europe, issues familiar to other regions (melting ice sheets, sea-level rise, wildfires) are frequently contrasted in the literature with government objectives to extract critical minerals and develop fishing in Arctic communities (Mosoni et al., 2024).

Heightened collaboration between groups and embracing stronger roles for ILK in the shaping of adaptation strategies are frequently cited as viable paths forward for Arctic communities coping with environmental change (Irrgang et al., 2022; Schlingmann et al., 2021). Vulnerabilities that challenge adaptation strategies are often connected to colonization and globalizing forces with a wide range of negative impacts for Indigenous peoples around the planet (Ford et al., 2020). In the Arctic, vulnerabilities include reduced apprenticeship

opportunities among Inuit communities, a diminished capacity to manage reindeer migration timing in Scandinavia, and loss of income resulting from international opposition and government restrictions on hunting marine mammals (Ford et al., 2021). Immovable cultural heritage sites in polar regions, such as archaeological sites and historic structures, face threats including coastal erosion and ongoing degradation resulting from increased temperatures (Holmgaard et al., 2019; Nicu & Fatorić, 2023). Coastal areas globally face highly complex impacts resulting from environmental change, yet little evidence exists for successful adaptation strategies in coastal communities with most responses remaining reactive rather than addressing vulnerabilities in advance (Cabana et al., 2023).

2.3 Methods

2.3.1 Study site

While a great deal of quantitative physical science research takes place in the North Slope region of Alaska (including excellent insights in this special issue), far less qualitative social science has been conducted that would facilitate increased understanding of Indigenous and local perspectives on environmental change. It is well documented that people adapt to climate change based on their own experiences, perspectives, and relationships with environmental change - and thus understanding these perspectives is critical to successful adaptation. Utqiagvik (formerly Barrow), a rural town of approx. 5,000 inhabitants, serves as the hub for the North Slope region of Alaska (see Fig. 1). The North Slope is the original homeland of the Iñupiat who continue to comprise a majority of the region's population (U.S. Census Bureau, 2020).

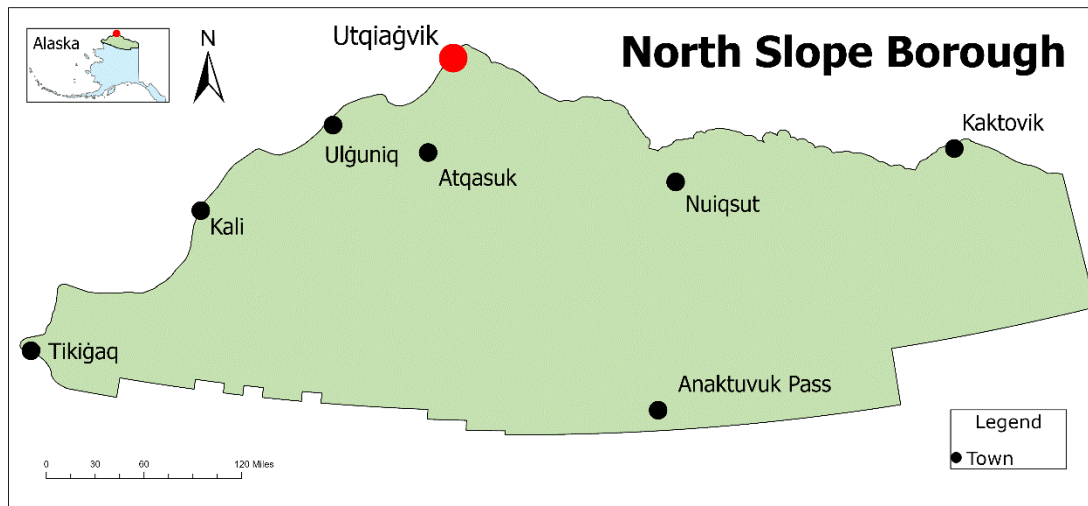


Fig. 1 | North Slope Borough, Alaska

In 1972, the North Slope Borough was established as a state-chartered governing district that returned considerable power to Iñupiaq citizens. Unlike many other Indigenous populations around the world, the Iñupiat have also benefited economically from substantial control of regional oil wealth (Bodenhorn, 1990). Iñupiat-controlled corporations directly benefit from oil revenue streams and own large tracts of land, which are classified as polar desert due to the low precipitation and treeless tundra (Hillmer-Pegram, 2016). Species common to the region include polar bears, bearded seals, caribou, Arctic fox, walrus, and bowhead whales (Wildlife Management, 2024). Utqiagvik serves many functions in the region as a hub for Iñupiaq culture, economic activity, scientific research, and the primary tourism destination (North Slope Borough, 2014; UIC Science, 2019).

As described in the *North Slope Borough Comprehensive Plan*, many of those residing in the region remain deeply committed to Indigenous life ways. Traditional values associated with Iñupiaq culture including compassion, avoidance of conflict, love and respect for Elders, cooperation, humor, sharing, family and kinship, knowledge of language, hunting traditions,

respect for nature, humility, and spirituality are proudly displayed in many parts of the community (URS Corporation, 2005). These Iñupiat values are a potential strength as the North Slope faces environmental change (Cuomo et al., 2008). Whaling, and the annual cycle of preparation for and celebration of the hunt, is also an element of Iñupiaq culture in the North Slope region (Hillmer-Pegram, 2016; L. B. Miller, 2019). The annual hunt for the bowhead whale, and yearly cycle of preparation for it, has been termed *cetaceousness* to describe the intimate relationship between people and whale on a spiritual level of multispecies relatedness (Sakakibara, 2020). The loss of whales as a result of diminishing sea ice and increasing difficulty storing whale meat in ice cellars due to permafrost thaw are concerning to many Iñupiat and may be resulting in social tensions building on those pre-existing from the colonial era (Sakakibara, 2017; Sakakibara & Ahtuanguaruak, 2021).

To situate Iñupiaq identity in relation to climate change, it is essential to consider the interactions between cultural heritage and the sense of place the Iñupiat have of Utqiagvik. As a region beset by environmental change and home to a sizeable Indigenous majority, Utqiagvik provides a strong case study for investigating the role of qualitative methods and ILK in achieving a holistic understanding of the impacts of global climate change. The ILK detailed through qualitative interviews described below speaks to a variety of physical environmental challenges including permafrost degradation, loss of sea ice, and severe weather while illustrating the interconnections and impacts on Indigenous and local culture.

2.3.2 Data collection

Three rounds of interviews were carried out in the summer of 2022, spring of 2023, and summer of 2024 resulting in a total of thirty resident interviews (sixteen Iñupiat, nine White,

two Pacific Islander, two African American, and one Hispanic). Indigenous and local residents were defined for this study to include any adult resident of Utqiagvik, Alaska who maintained residence year-round. Convenience sampling was initially used in 2022 as a way to establish connections with knowledgeable individuals in the community who could speak to environmental change taking place. These initial contacts allowed for the later use in 2023 and 2024 of snowball sampling, in which prior contacts are asked for access to new ones, which greatly expanded the diversity of interviewees (Nunkoo, 2018). Ethical oversight of this project was provided by San Diego State University through their Institutional Review Board (Protocol #s: HS-2022-0065 & HS-2023-0069). Due to the history of colonialist policies in the region and subsequent reluctance among Indigenous residents to sign documents, this study was provided a waiver of documentation for informed consent. All interviewees were promised complete anonymity in the reporting of results.

Interviews conducted in the summer of 2022 adopted an unstructured approach in which the openness of dialogue allows for conversations to flow in many different directions and unforeseen topics may become the focus (Merriam & Tisdell, 2009). Three interviews were done with residents at this stage exploring how climate change had impacted daily life and local tourism. Following the initial round of interviews, an interview guide was developed using the data collected in 2022. Interview guides provide an outline of questions for semi-structured interviews used to spark conversations and nudge interviewees toward specific topics, while remaining flexible enough to explore unanticipated insights. The use of an interview guide also uncovers data points that are more easy to compare and more reliable (Bernard, 2018). Twenty-seven semi-structured interviews were done in 2023 and 2024 with residents at this stage investigating perceptions of Iñupiaq identity, how climate change was

impacting daily life, and whether the long-term feasibility of providing for a family was being challenged by climate change. Interviews were recorded and transcribed verbatim in English by the service provider GoTranscript.

2.3.3 Data analysis

We analyzed our interviews using qualitative content analysis, a common technique used for organizing and analyzing text-based data (Hay & Cope, 2021; Nunkoo, 2018). This involved an initial round of descriptive coding similar to categorization of the data based upon how they answered our project's research questions and uncovered patterns within the broader dataset (Cope, 2021). A second round of analytic coding then allowed for connections between descriptive codes and opened the discovery of previously missing patterns (Merriam & Tisdell, 2009; Zavattaro, 2019). All of the interview data we collected was organized and analyzed using this methodology in NVivo qualitative analysis software.

Thematic saturation, the point at which interviews yield few or no additional insights, is difficult to quantify and dependent on data analysis (Hay & Cope, 2021). The literature on qualitative research methods generally agrees data saturation of $\leq 5\%$ new information threshold is typically reached after 6-7 interviews (Guest et al., 2020; Nunkoo, 2018). Having completed interviews with thirty residents, and following in-depth qualitative content analysis, this study meets the threshold for thematic saturation and thus likely covers the breadth of common perspectives and experiences of residents.

Researcher positionality is an important aspect to consider when carrying out qualitative studies since a scholar's background (e.g., their ethnicity, gender, etc.) will shape their own perceptions of the data and how they interact with interviewees (L. B. Johnson, 2015; Reich,

2021). Positionality is especially critical for research focused on Indigenous communities given differences in culture, values, and norms (Buzinde et al., 2020). Researchers are often viewed as outsiders in these circumstances, which can influence how they are received by the community (Shaw et al., 2020). The authors, who are neither local nor Indigenous, strove to keep their positionality in mind during interactions with residents and utilized a social identity map to better understand their own positionality before embarking on data analysis (Jacobson & Mustafa, 2019).

While we aimed to capture a depth of experience using qualitative methods, we understand that we may not have captured the entire breadth of the perspectives that exist. We also acknowledge that sense of place, cultural heritage, and environmental change are dynamic features of a community, and our study aims to capture these elements during a specific time and place. A longer-term longitudinal study would help to understand the relationships between these factors over time.

2.4 Results

2.4.1 Iñupiaq identity

During our interviews, we asked residents who self-identified as Indigenous (sixteen) what being Iñupiat meant to them. In the sub-sections below, we examine the central traits of Iñupiaq identity as expressed by interviewees and shared by three or more Iñupiaq residents (see Fig. 2). Many of these traits were overlapping and interconnected.

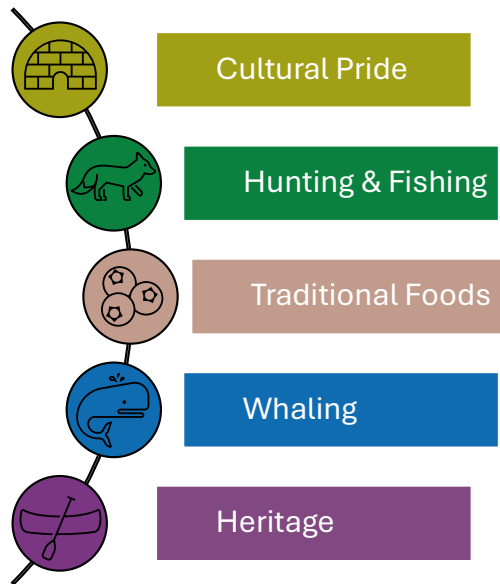


Fig. 2 | Themes of Iñupiat identity. Traits mentioned by fewer than 3 interviewees included respect for Elders, music, dancing, and clothing.

A strong expression of pride for Iñupiat culture and being part of ‘The People’ was at the heart of what being Iñupiat meant for many Indigenous residents. Feelings of pride emanated from two main aspects of life on the North Slope: (1) the central role of living in a tight-knit community built on shared culture and (2) Indigenous lifestyles focused on hunting and whaling.

Being part of ‘The People’ and Iñupiat community was centered on the perception of a common heritage and values, living off the land and unique lifestyle in the modern world, and shared childhood experiences. Many of these traits were intertwined such as how living off the land allowed for people to practice the Iñupiat value of sharing and providing for both family and community. As one resident (a co-captain for a whaling crew) described, “you know, it's more like you kind of grow up to be a provider for your family... then not just your family... you do it for the whole community, you know, once you get into whaling.” The strength of and pride in the Iñupiat community was such that several residents noted having left Utqiagvik at

some point in their lives before being drawn back home. The sense of community in Utqiagvik was also not restricted to those living in the North Slope region. As one man noted, “I’m grateful to be part of this race, circumpolarly.”

Iñupiaq residents we interviewed were not only proud of their culture but open to sharing it with outsiders. As one author (Grafton) observed in Utqiagvik, visitors and tourists were welcome to participate in important cultural events including the 2023 Nalukataq whale festival and blanket toss, and performances of the ‘Eskimo dance’ at the Barrow Arctic Research Center 2024 Science & Culture Fair. One resident described having previously worked in the local hospitality industry and the happiness that sharing Iñupiaq culture with tourists gave her: “It made me feel so... happy and, like, ‘Oh, I did something good.’”

The second most referred to aspect of Iñupiaq identity was the critical role of hunting and fishing as part of an ongoing Indigenous lifestyle. Meat procured through hunting and fishing remains an important part of many people’s diets. Hunting and fishing were formative activities in the memories of many Iñupiat who narrated growing up at hunting and fishing camps across the North Slope region. A whaling co-captain recounted, “Grew up whaling, camping, hunting... I grew up at our camp, out by Teshekpuk Lake.” Another resident noted, “we hunt all our lives... just something that we grew up doing as being Iñupiat is everything to me.”

The unique nature of hunting and fishing in the Arctic was a point of pride for some Iñupiaq residents. For example, geese that are normally hunted in the summer on the North Slope have a different hunting season in the autumn in southern Alaska and the Lower-48. One Elder recounted an experience related to this unique hunting season. While outside the North Slope region, this Elder went shopping for a shotgun to use during the summer geese hunt. The salesman’s reaction was revealing: “The guy was just flabbergasted. He says, ‘Guys, come out

here. You'll never believe this. This woman's buying a shotgun. They're going geese hunting soon.”” This anecdote was related as both a humorous vignette and a point of pride that clearly set inhabitants of the North Slope apart from other American hunters.

Unique species from those found further south are also central to the story of Iñupiaq identity. As noted above marine mammals are endemic to the region, but in many Arctic countries cannot be hunted by non-Indigenous people. Holding traditional rights to hunt these unique species is an important point of pride for Iñupiaq residents of Utqiagvik. As one man stated about being Iñupiat, “it means that I can hunt our animals for food as we have for thousands of years.” There were concerns that this aspect of Iñupiaq culture was threatened by environmental change. One Elder described, “things in our culture, activities, hunts, preparation that I think would be lost should this climate change continue to keep going in the fashion that it is.”

Closely related to hunting and fishing, but broader and more diverse, was the connection between eating traditional foods and being Iñupiat. Whaling and the meats harvested as a result were central to this aspect of Iñupiaq identity including foods such as seal oil produced as part of the whaling cycle. However, food as part of Iñupiaq identity extended beyond whaling to include subsistence products acquired from both sea and land. One Elder noted their love of caribou soup before adding how only locally harvested foods such as muktuk (whale skin and blubber), fish in seal oil, or duck soup could truly satisfy their hunger.

Food was also a source of anxiety for many Iñupiaq residents in Utqiagvik with concerns about pollution, government regulations, and climate change top of mind. Regarding threats from pollution, one Elder described their fears that the 2011 Fukushima Daiichi nuclear disaster in Japan “had broken into the ocean” potentially contaminating “the ocean... our

garden.” She was hopeful that the cold Arctic waters around Utqiagvik would keep any nuclear waste to the south to avoid tainting marine sources of food. Another woman who was part of a whaling crew described the concern among the community of increased parasites found in bowhead whales and other animals harvested for traditional meats. This limited the parts of whales that could be consumed with the prized kidneys often needing to be discarded. She continued, “it’s just people from all over the Slope are seeing it like gradually getting worse. Like meat that doesn’t look right. Doesn’t look like how we were raised eating.” A similar concern she shared was that microplastics would further contaminate traditional foods. Another resident noted the constant need for more food and how there were always families in need of community support.

Outside control of hunting and fishing through state and federal regulations have often clashed with local practices in the North Slope region with residents being keenly aware of this history. There remained ongoing concerns among the interviewees in Utqiagvik that regulations could further restrict hunting and fishing, particularly regarding that of bowhead whales, resulting in the loss of traditional foods. As one Elder elaborated regarding hunting restrictions, “now that we have more of the outside community coming to where we are and forcing rules and regulations, um, based on standard practices from where they live and where they come from, and trying to instill those kinds of rules [and] regulations on us is very different” from how the Iñupiat traditionally practiced their lifestyle.

Whaling is intimately linked with the sense of community and shared values for the Iñupiat. Hunting the bowhead whale requires year-long preparation extending far beyond those who will themselves go out on boats. Women traditionally played a vital role in the construction of the umiaq (a type of boat used for whaling) by preparing sealskins before stretching them over

the frame of the umiaq. The communal aspect of preparation was emphasized by several residents. As one woman described whaling, “you're not just- the goal is to hunt the whale. The goal is to basically feed your community.”

Hunting whales remains controversial in many parts of the world and residents were aware of the societal risks involved in practicing Indigenous lifestyles in a globalized world. As one non-Indigenous local explained, “I'm a lot more careful about stuff like that. When I first got up here, I posted some pictures of a whale harvest on Facebook. Now, I don't do that.” For the Indigenous residents of the North Slope, whales are not trophies or hunted for aesthetic products such as baleen, but a vital subsistence resource keeping people alive.

Several residents also pointed to the role of science in bringing the annual whale hunts back to the North Slope following a period when the practice was banned. It was noted how scientists continued supporting whaling by taking measurements and examining whales once the carcasses were pulled ashore. This role in legitimizing whaling and providing evidence of its sustainability resulted in a generally positive impression of scientific activity in Utqiagvik and the surrounding region. One Elder described the relationship as, “scientists, I think they... become our best friends... they tell the side that what we've been telling them... but the government won't believe because our Elders are not educated academically, but they'll believe the scientists that talk with the Elders.”

While many of the themes about identity discussed above related to cultural heritage, several residents spoke directly to how their identity was a cultural heritage passed down from ancestors. The Iñupiat Heritage Center (IHC) assumed a prominent role in the community regarding this aspect of Iñupiaq identity. An Elder noted how the IHC had been a major goal for the community prior to it being constructed in the 1990s and explained how it was a “living

museum” celebrating the still vibrant Iñupiaq culture of the present. A younger woman recalled joining science talks at the IHC during her childhood years and the positive impression these left.

Educating and speaking with the youth of Utqiagvik about Indigenous lifestyles and Iñupiaq culture was important. One man noted, “it’s something that I take very seriously, especially with the younger kids, younger generations... it kind of helps them push further into learning their own heritage and their ancestry.” Revealing the impact of these educators, many residents described how central their Indigenous identity had been to their upbringing.

2.4.2 Environmental change impacts on daily life

The residents interviewed, both Iñupiat and locals of other ethnicities, outlined various negative impacts to their daily lives resulting from climate change (see Fig. 3). Iñupiaq residents and other locals described three major areas of climate change that were shaping the challenges of daily life including permafrost degradation, loss of ice, and changes to the climate.

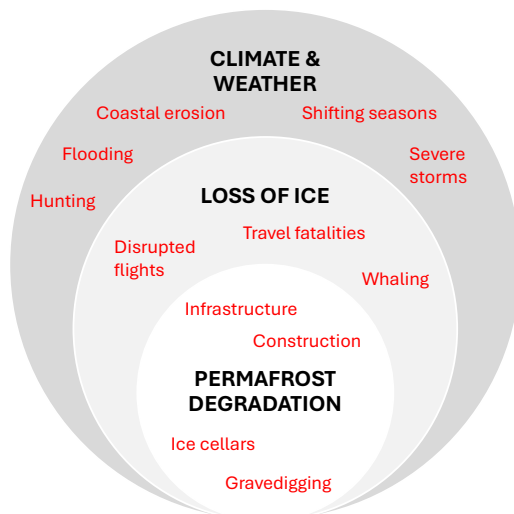


Fig. 3 | Themes of climate change impacts on daily life in Utqiagvik.

Permafrost degradation was chief among concerns related to climate change for Iñupiaq residents and other locals in Utqiagvik. A host of pressing issues were resulting from permafrost degradation including increased infrastructure instability, the digging of gravesites, and collapse of ice cellars. While one particular issue was seemingly caused by a combination of human error and permafrost thaw, Iñupiaq residents and other locals indicated that climate change was the source of most issues related to permafrost degradation.

Infrastructure instability was the issue most often described in relation to permafrost degradation on the North Slope. There is a single paved road in Utqiagvik with the others being constructed of dirt and gravel. Maintaining such roads in the Arctic has traditionally proven difficult but with permafrost degradation the deterioration of roadways has accelerated. The flooding of roads has become a common occurrence (see Fig. 4) and large sinkholes have developed in places (Povoroznyuk et al., 2023). Flooding had gotten so bad in recent years that some roads were completely abandoned as a result. One local couple described how they had feared that their former home on the beach would be “submerged” by rising waters and how they faced flooded roads on a daily basis before moving into a new home further inland.



Fig. 4 | Flooding on Cakeatter Road in Utqiagvik, Alaska.

One Iñupiaq Elder was critical of the borough's utilidor, a system used to deliver multiple utilities and remove sewage via a single conduit common in the North American Arctic (Guyer, 2013). Unlike the above ground utilidor constructed by the U.S. Navy at the Naval Arctic Research Laboratory (NARL) just north of town, the utilidor built in Utqiagvik was put underground. The Elder noted how with warm water flowing through the utilidor any point where the insulation wasn't sufficient would result in permafrost degradation. This was having a significant impact on the Elder whose home had suffered water damage following a shift in the utilidor hookup resulting from permafrost thaw. The issue was resolved at no cost to the Elder but considerable expense to the borough. Whether this was primarily due to human error or ongoing environmental change was left unclear by the interviewee.

Another Elder described concern that permafrost degradation would impact their home's foundation explaining how, "it's affecting my surrounding of my home. It's thawing below." This issue was echoed by another Iñupiaq resident when describing how, "it's hard because a lot of houses, like they've been sinking." Some of these homes need major repairs and others rebuilt entirely. However, the few construction companies in Utqiagvik do not focus on this type of work and it is prohibitively expensive to outsource to companies in other parts of Alaska. Outside companies are often only willing to do work in Utqiagvik on large-scale projects of twenty or more homes. Permafrost degradation further presented both logistical and health concerns related to the digging of gravesites. As one Iñupiaq resident described the situation, "there's only one auger that is for the graves and they'd be having to get out all the water because... it just becomes like swampy."

For those directly affected, perhaps no change was of greater concern than how permafrost degradation was impacting Iñupiaq ice cellars. Both Iñupiaq residents and other locals were

acutely aware of how this vanishing resource would impact the whaling cycle and availability of traditional foods. With permafrost thaw, water began creeping into the ice cellars, eventually ruining existing food stocks. Ice cellars faced with enough permafrost thaw eventually caved in and needed to be abandoned. This is a relatively new phenomenon on the North Slope as one Iñupiaq resident reminisced, “when I was younger, they never filled up.”

This collapse of ice cellars had already played out for many older cellars in the community. Some whaling crews had relocated to new cellars dug further inland, while others had chosen to share older ice cellars with other crews. Even ice cellars that were surviving the permafrost degradation required additional maintenance to continue functioning with one Iñupiaq resident describing how, “during the winter... they like tell everybody, ‘It’s super cold out. You better open your ice cellars, so the cold can like go down.’ ‘Cause you know how heat rises and cold sinks. So, more efforts to maintain the cold in the ice cellars.”

Loss of ice presented major challenges and serious threats to life both on the seas and tundra surrounding Utqiagvik. On the tundra, Iñupiaq residents and other locals noted the threat posed by thinner, less stable ice on rivers and the thousands of ponds comprising the local topography. Less sea ice presented numerous issues including diminishing multiyear ice affecting whaling and increased summer fog resulting in cancelled flights.

One local woman described the increasing threats faced by caribou hunters traveling across the tundra on snowmobiles where the ice hides ponds while presenting the illusion of safe passage. With ice both forming later in the year and also not as thick as in years past, hunters are going out to hunt before the ice is thick enough to be safe. This is a serious hazard when travelling over the thousands of seemingly frozen lakes and rivers in the region. As she noted,

“that's unsafe, you know, uh, every year they lose a couple people in different villages and, uh, new people falling through the ice.”

Diminishing sea ice had a significant impact on locals participating in the annual whaling cycle due to their reliance on the ice as a platform for staging hunts. Most problematic was the loss of multiyear ice, sea ice that remains in the ocean through the summer months before refreezing to form a thick layer of ice in the winter. As one Iñupiaq Elder recalled, sea ice that used to freeze to the beach by late October would now take until late December for similar conditions. The ice that did come was not as thick with mere inches of ice where solid multiyear ice would have once been anticipated. Another Iñupiaq resident added, “once the ice leaves the shore, we may not see it again until winter actually hits.”

Changes to the sea ice also affected the spring whaling with the ice melting earlier than in the past leaving behind unstable conditions. One Iñupiaq resident observed how “ice used to be 6 to 10 feet thick right here in front of... Barrow. And, our open lead used to be up to 7 to 13 miles to the open lead during a spring whale hunt. Nowadays, we're looking at one to three miles.” Without a large open lead the window for spotting and successfully hunting bowhead whales is greatly diminished. Operating a whaling crew in these new conditions entails considerable risk. As one Iñupiaq Elder concluded, “whaling has started to become a dangerous activity because of this climate change.”

Although less of a concern for residents than for tourists and visiting scientists, several non-Indigenous locals pointed to the increasing sea ice melting in summer months as the cause of foggy conditions that often disrupted air travel. As one local noted, “Less ice in the ocean makes for crappy weather right on the land.” A local educator observed how, “we get flights, uh, weathered out very, very often, especially during the summertime.” A second local educator

pointed to the increasing fog as a challenge for students traveling to Utqiagvik to attend classes. He added how missed flights could also result in empty shelves at local grocery stores causing a lack of food provisioning for everyone in the community.

Severe weather and seasonal shifts were both an irritant and serious problem for many residents. Many long-time Iñupiaq residents and other locals described changes to how they experienced seasons and shifting dates for the arrival of new seasons. Storms were becoming more severe and residents described how coastal erosion was reshaping their community in costly ways.

Climate on the North Slope of Alaska had assumed a volatile quality for some. One Iñupiaq resident described the changes as having, “experienced different kinds of winters here. We’ve had winter when it was, like, super warm where there’s not a lot of ice, and we had super cold. The past few years it’s... super cold winters where we hit negative forty, negative fifty with the wind.” Another Iñupiaq resident noted how “weird” it felt having cold weather when she expected it to be warm or vice versa.

Seasons had undergone substantial change as well. Storms, particularly those in the autumn, had been “getting way out of hand” according to many residents. The intensity of storms had increased significantly with one Iñupiaq resident describing how his house shook more from winds than it did just fifteen years earlier. The town recently suffered contamination of their water supply after a major storm caused flooding to overflow into the freshwater lagoon leaving salt and silt behind. Storms were also a major impediment to maintaining the town’s other infrastructure. For example, the road connecting Utqiagvik to NARL was temporarily lost each year due to wash out from such storms.

Residents reported that in recent winters and springs, the weather was characterized by abnormally warm temperatures. This had negative effects on snowfall and ice accumulation, with subsequent consequences for whaling and other subsistence activities. One Iñupiaq resident described traveling inland the previous year for geese hunting where it would normally still appear to be locked in winter conditions. Instead, he found the snow and ice completely melted and no geese in the area.

Coastal erosion was frequently discussed as one of the more troubling results from severe weather conditions on the North Slope. How much shoreline had been lost was open to interpretation with one non-Indigenous local estimating 300 feet of beach since his arrival in the early 1970s. An Iñupiaq resident recalled, “When I was growing up we had another, what, quarter mile, maybe half a mile of shoreline. We had beach for days. Now we got, what, 40 yards of beach.” This had broad ramifications for the community including construction of a seawall cutting off the view of the ocean for much of the town. The major Nalukataq whaling festival that had traditionally been held on the beach had been forced to relocate to a central location in town behind the relative stability offered by the seawall.

Homes on the shoreline, particularly those on bluffs, are in a precarious position due to coastal erosion. Several structures have been lost in recent years with many others threatened. As one non-Indigenous local described the situation, “houses that are close to [the ocean], that because of all the changing weather and the... storms that have become more frequently and flooding, um, it's just like a matter of time, a very soon time that those houses can plummet.” An Iñupiaq Elder added how this issue was much worse in other parts of the North Slope, such as the village of Point Lay where coastal erosion threatens the entire community with possible relocation (Rogerson, 2022). Federal assistance may be required to mitigate the effects of

coastal erosion. One Iñupiaq resident noted how his proposal to establish a breakwater was viewed as too expensive by local authorities.

2.4.3 Intersections of environmental change and Iñupiaq culture

Iñupiaq residents we interviewed did not directly point to adaptability as a core aspect of their identity, but it became clear how significant this trait was when we started discussing environmental change. As described in detail above, many Iñupiaq residents and other locals viewed climate change as a cause behind a variety of daily issues facing the community and identity. As one Iñupiaq Elder noted, “our climate is changing. Our Earth is changing. And that we need to learn how to change with that changing environment in order to be successful with the lifestyle that we... so enjoy.”

Residents were divided as to how significant the changes they faced were or whether they represented a clear break with past precedence. Several emphasized the community’s resiliency with one Iñupiaq resident noting the challenges of living in a “food desert” even before climate change became an issue. She added, “we’re very resilient... we have learned to adapt to whatever, like, the climate, the environment would throw us... You have to adapt to live up here.” One resident played down the significance of climate change impacts, noting that adaptability was a core aspect of Iñupiaq identity. Another Iñupiaq resident noted, “there’s always a way around it,” before pointing to how the younger generation was already becoming used to the new conditions presented by environmental change.

Other Iñupiaq residents described climate change impacts alongside more cautious descriptions of adaptability. One Elder spoke at length about the changing seasons and their effect on the whaling calendar. Citing Facebook “memories” (posts made the same day a

year(s) in the past), they explained how the start of the spring whaling season was arriving earlier. Crews had adapted by adjusting their schedules but with diminishing sea ice the question of for how long this would be sustainable lingered. She pondered if activities such as whaling that might have once lasted for months each year might become compressed to mere weeks in future seasons. Another resident spoke about how challenging the ice and weather had become with seemingly annual changes, noting that it “makes a big difference in small communities like this where adjustments have to be made.” One Iñupiaq resident described how the animals were adapting to climate change more slowly than humans but starting to adapt through changing migration patterns. Another Iñupiaq resident took heart in the natural history of the Arctic by arguing for how animals were able to “adjust a lot quicker than we all can. And they’ve been doing this for hundreds of thousands of years.”

Speaking of some of the challenges discussed above, such as loss of ice and missing community members, one Iñupiaq resident observed:

I think those kinds of things bring us together a lot more to look for each other in times of despair... The ice has been challenging. Every year is a new year... something new comes out and we learn from these strengths, and I think it-it only strengthens us to become, uh, more aware of things.

Another local who had lived in Utqiagvik for twelve years described the strong leadership in the community and how local leaders actively addressed environmental change. He noted that, “the community leaders... have a quick response in what happens” observing how coastal flooding had been dealt with through the creation and maintenance of a seawall along Stevenson Street.

2.5 Discussion

Environmental change in the Arctic is primed to have significant impacts on many tangible aspects of Iñupiaq cultural heritage including Indigenous lifestyles, hunting, and the annual whaling cycle. As illustrated by the example of coastal erosion, the three major themes of climate change shared by our interviewees (loss of ice, permafrost degradation, and severe weather) are all closely interconnected. Less obvious are the impacts environmental change will bring to intangible cultural heritage by presenting new challenges for Iñupiaq values and traditions. Indigenous and local knowledge and perceptions continue to be understudied contributing to an inability to successfully implement large-scale sustainability initiatives (Lam et al., 2020). It is clear from this study that physical transformations wrought by environmental change are threatening the intangible cultural heritage of Indigenous and local people in rural areas.

Interviews with residents uncovered numerous ways in which environmental change was shaping the daily lives of Iñupiat and local people living in Utqiagvik through permafrost degradation, loss of ice, and changing climate. As the quality of life in the Arctic is transformed, the Iñupiat will face challenges to their intangible cultural heritage including the potential loss of the whaling cycle and critical relationship with the bowhead whale. Viewing these two issues as intertwined reveals how intangible aspects of cultural heritage such as Iñupiaq values and traditions are just as threatened by climate change as the physical environment (Pearson et al., 2023). Iñupiaq culture and identity are interwoven with the bowhead whale migration, which is increasingly affected by diminishing sea ice. Traditional foods, such as whale meat and caribou, cannot be stored in the same quantities without access to ice cellars that are rapidly disappearing across the Arctic as a result of permafrost thaw (Saito

et al., 2024). Burials disturbed by permafrost thaw can present serious health concerns for local communities (Revich et al., 2022). Extreme weather events and subsequent coastal erosion threaten not only subsistence activities but even entire communities on the North Slope with potential relocation (Garland et al., 2022; Maldonado et al., 2014).

Multispecies awareness, an understanding of the co-shaping relationships between humans and other species, was demonstrated during several interviews (Baishya, 2023; D. J. Haraway, 2016; Sakakibara, 2020). Environmental change is reshaping all aspects of the Arctic including the behaviors of non-human species. While Utqiagvik has access to many modern commodities offered in the town's several grocery stores, prices are often prohibitively high due to nearly all the products being imported (O'Malley, 2017). Any environmental changes that affect the ability of hunters and fishers to supply food will undoubtedly have broad ramifications across the region. Each physical manifestation of environmental change creates a new challenge for the preservation of Iñupiaq and local ways of life. Policy makers and regional planners should simultaneously address the intangible aspects of environmental change when proposing long-term solutions for sustainability, mitigation, and adaptation.

2.5.1 Community resilience, adaptability, and the vulnerability narrative

In this context, it is worth pausing to note the unique perspectives of some residents who emphasized the ways in which climate change had strengthened the community of Utqiagvik. A rich body of literature exists that emphasizes the importance of strong communities exhibiting social cohesion and social capital for establishing climate resilience (Carmen et al., 2022; Kumalasari et al., 2025; Tamasiga et al., 2024). Indigenous and local knowledge regarding the role of Arctic communities in responding to environmental change is needed to

develop climate resilience in the region (Nenasheva, 2023; Vynne et al., 2021). While only a small number of interviewees in Utqiagvik addressed the growing strength of the community in the face of environmental change, the power of positive senses of place in the Arctic should not be underestimated by regional planners and policy makers.

Many Iñupiaq residents emphasized how adaptability was a pre-existing feature of Iñupiaq identity related to living in a challenging Arctic environment. Skepticism regarding people's ability to adapt and the constraints on adaptation to environmental change was minimal. The overwhelming sense was one of both community and personal resilience in the face of new conditions. One Iñupiaq woman summed up the position of many when saying, "I don't even really care about the climate change. I mean, it's just everyday life, I live in it."

Much of the academic discourse on adaptation in the Arctic focuses on a barrage of challenges to adaptability in the Arctic including regional socioeconomic issues, demographic changes, financial constraints, complex federal regulations, and limited local power over policies (Bunce et al., 2016; D. E. Johnson et al., 2021; Malik & Ford, 2025). Indigenous and local residents of these communities are subsequently portrayed as 'vulnerable' or 'victims' of the environmental change taking place. This negative portrayal of Indigenous and local communities extends beyond the Arctic to many regions being impacted by environmental change (Ford et al., 2020; Kumalasari et al., 2025). The Iñupiaq residents we spoke with did not share these concerns and were far more optimistic that they could adapt to whatever new conditions global climate change brought to their region. Arctic residents we interviewed shared positive senses of place and strong place attachment to Utqiagvik similar to other studies (Galappaththi et al., 2019). Harnessing and building on this optimism should be a

priority for regional planners and policy makers seeking to address environmental change in the Arctic.

2.5.2 Key recommendations

Based on the results of this study, we have made the following recommendations to increase understanding of environmental change and improve related policy making. While these recommendations are focused on the Arctic, they are likely to be relevant in other global regions impacted by environmental change.

1. *Indigenous and local knowledge of environmental change should be prioritized* in studies of vulnerability and community resilience. Much of the existing literature details vulnerabilities and the need for strong community engagement without investigating how locals perceive adaptation to environmental change or the strength of local communities. Indigenous intangible and tangible cultural heritage are in many cases already perceived as strongly resilient. Calls for further studies of Indigenous and local knowledge into how their communities respond to climate change should be answered (Nenasheva, 2023).
2. *Intangible cultural heritage is threatened by environmental change, but Indigenous and local residents should not be seen as victims and perceive positive senses of place* in their community. The values, beliefs, traditions, diet, and lifestyles of the Arctic are being challenged by environmental change in the region (Garland et al., 2022; Pearson et al., 2023). However, interviewees emphasized adaptation to this change; not vulnerability. The intangible cultural heritage of the Iñupiat was instead frequently

linked to the ability to adapt to environmental change. Regional planners and policy makers should stop viewing Indigenous and local residents in impacted areas as victims and instead as resilient agents capable of adapting to environmental change if provided with the needed resources.

2.6 Conclusion

To address the dramatic environmental change taking place in the Arctic it is critical that we understand Indigenous and local knowledge (ILK) of these transformations and the impacts on Indigenous cultural identity (Bercht, 2021; Kleinberg & Toomey, 2023; Moerlein & Carothers, 2012). Conceptions of Indigenous identity and the associated values are facing threats from environmental change with gaps in understanding existing within the broader literature (Buckingham & Hutchinson, 2024; Bunce et al., 2016; Herman-Mercer et al., 2019; Malik & Ford, 2025; Pearson et al., 2023). This study has helped fill these gaps by opening space for ILK in the understanding of socio-ecological implications of climate change including permafrost degradation, loss of ice, and climate change.

Indigenous and local people may view spaces in different ways than outsiders (Müller, 2021; Peterson et al., 2020). The results of this research demonstrate how Indigenous and local people perceive issues of environmental change differently from the dominant narrative. Inupiaq residents in particular emphasized their adaptability in the face of environmental change through optimistic and communal approaches to these challenges. Given the need for long-term mitigation and adaptation to climate change in the Arctic, regional planners and decision makers should approach policy development with this local perspective in mind.

Qualitative research encompasses a wide range of methods suitable to research of socio-ecological systems that would enable a more holistic understanding of environmental change in regions like the Arctic. This research provides a qualitative case study focused on Utqiagvik, Alaska to show how ILK can illuminate the linkages between physical processes and more-than-human social systems. The results demonstrate how the emphasis of scientific discourse may not always align with the perceptions of Indigenous and local people. The Arctic is a vast area featuring tremendous human diversity across three continents and more qualitative case studies are merited to achieve a holistic understanding of environmental change in this region.

Chapter 3. A Cinematic Cartography of Utqiagvik (Barrow), Alaska:

Historical GIS and Abjection in the Arctic

3.1 Introduction

Few world regions have been as mischaracterized or as closely linked with global climate change in media as the Arctic with Western colonial narratives of desolate ice fields awaiting conquest and striking imagery of endangered polar bears (Cheetham, 2024; Mendenhall, 2016; Stenport & Vachula, 2017). Economic and geopolitical interest in the region have increased dramatically in recent years resulting in new development and tensions between states that have raised global awareness of the Arctic (Bennett & Dodds, 2025; Ford et al., 2021). Also, tourism has boomed with growing numbers traveling to the Arctic to experience Indigenous cultures, adventure, and changing landscapes (Grafton et al., 2025a; Müller, 2025; Saarinen & Varnajot, 2019). Indigenous and other local residents of the Arctic face numerous challenges resulting from these changes including environmental degradation, food security, loss of culture, access to education, and health concerns (Ford et al., 2021; Gill, 2014; Grafton et al., 2025b; Huntington et al., 2019; Liew et al., 2020). Thus, how future generations will perceive the Arctic remains unclear (Herrmann, 2017; Varnajot & Saarinen, 2021) but how this pivotal region is portrayed in the present will have wide-ranging impacts on key policy decisions affecting future societal and environmental changes.

The criminalization of Indigenous culture and subsequent efforts at forced assimilation throughout much of the twentieth century were devastating for many Indigenous communities around the world (Gone et al., 2019; Pride et al., 2021). Despite this, stronger communities, more empowered Indigenous youth, and heightened aspirations for all Indigenous people result from revived cultural heritage and positive depictions of Indigenous peoples (Chandler &

Lalonde, 2008; Good et al., 2021; Trout et al., 2018). Media has an outsized impact on shaping self-perceptions and outsider views of cultures (Kohm & Richtik, 2018; Krausz, 2003; Sachar, 2024). For example, depictions of Indigenous and other local residents living in the Arctic are complex and often problematic, such as the colonialist *Abbott and Costello: Lost in Alaska* (1952) remembered primarily as the “muck” of the comedians oeuvre with its blatantly racist portrayal of the Iñupiat (Miller, 2004, p. 87) and more recent offerings such as *True Detective: Night Country* (2024) made in collaboration with Indigenous communities to offer more nuanced, if still imperfect representations (Ava, 2024). Even with more media portrayals of the Arctic and Indigenous peoples in recent years, as Goehring (2022) notes, “increased visibility often results in problematic implications.”

The primary objective of this study was to understand how Indigenous peoples, and particularly Indigenous women, of the Arctic were portrayed and made subject to abjection in documentary and amateur films set in Utqiagvik and made between 1972 and 2014. This was accomplished through the creation of an historical Geographic Information System (GIS) database to facilitate spatial analysis of qualitative film data. Historical GIS and the spatial analysis of qualitative data are relatively new techniques increasingly used in geographic studies but remain underutilized methods (Apollo et al., 2023; Gregory & Geddes, 2014; Lin et al., 2022; Vedoà, 2024). Historical GIS databases reveal patterns but rarely answer the questions raised by them, instead opening the study to further investigation and theoretical application (Hallam & Roberts, 2014).

This study adopts a novel approach to historical GIS by addressing questions raised by spatial analysis of qualitative film data through the application of gendered analysis and abjection theory. Abjection theory is the unconscious rejection and loathing of others, often

situated on the “monstrous feminine” in films (Mandolini, 2023, p. 2). Feminist frameworks have rarely been considered in historical GIS studies (Roth, 2021; Sharp, 2018) and to our knowledge abjection theory has never been utilized in conjunction with this type of spatial analysis. This research focused on three key questions: (1) How are these films shaping Barrow’s place image through time?; (2) How have women and the Iñupiat depicted in these films been subject to abjection?; and (3) What locations were depicted and what spatial patterns exist between the films? Spatial analysis of archival films found divisions within Arctic films that relate to the abjection of Indigenous peoples and situate female film subjects on an axis of difference from male ones. Through a series of vignettes taken from the films, we expose the continuous abjection of women and Indigenous peoples in Arctic documentary and amateur filmmaking. This analysis sheds light on false histories and “shortcuts of convenience” in historical narratives that open new avenues to serious engagements with Indigenous cultures and the proud heritage of Indigenous women in the Arctic with the goal of inspiring improved future portrayals and more nuanced understandings (Cronin, 2019, p. 349).

3.2 Theoretical framework

Cinematic cartography considers how the geography of re-presentations found in film comment upon and interact with places, people, and life ways in reality (Aitken & Zonn, 1994; Conley, 2007; C. Lukinbeal, 2024). The depiction of people and places in films shape how both outsiders and residents view the location and culture with significant consequences for those affected by the place image established (Castro, 2023). Cinematic cartography may be divided into five major categories including the mapping of film production and reception, film-related tourism, the study of how maps are embedded in films, psychogeographic

mobilities and affective geometries in film, and film as spatial critique (Hallam & Roberts, 2014). This paper is primarily interested in the latter theme, which opens cinema to feminist frameworks.

Feminist theory and the feminist concept of situated knowledges is central to the work of this study. As England (2015) argues, “there is no one truth waiting to be discovered... knowledges are situational, marked by the contexts in which they are produced, by their specificity, limited location, and partiality.” By adopting situated knowledges, feminist scholars may approach subjects through partial perspectives that return agency to bodies and persons (McCahey, 2021). Most notably, this enables for those harmed by scientific and patriarchal ‘objective’ truth to present their own knowledge claims (Peterson et al., 2020; Pugh & Chandler, 2021). Situated knowledges have been widely embraced by human geographers who adopt a feminist lens (Shiva, 2023) and has proven particularly important for the investigation of indigenous knowledge (Carey et al., 2016). Feminist theory may be used to challenge the god-trick view from above so often characteristic of positivist approaches and quantitative-based Geographic Information Science to instead reveal situated knowledges (D. Haraway, 1988; Sharp, 2018). Films, as necessarily subjective in both their depictions of reality and their maker’s gaze, are ripe grounds for uncovering situated knowledges via gendered analysis.

Abjection, an unconscious rejection and loathing of the other, gestating as something that comes from within us such as bodily fluids that distinguish cleanliness from contaminated, a concept pioneered by Julia Kristeva, similarly speaks to positive depictions of masculinity and negative ones of feminine-Indigenous with value for film geographers (Aitken & Dixon, 2006; Kristeva, 1982; Livingston, 2016). Kristeva’s concept of the abject is ingrained in the oedipal

story and its rejection of the mother that creates a feminine (negative) other with significant ramifications for both how women are portrayed in film and, how indigenous people and culture may be mythologized for Western eyes (Mulvey, 1996). Tina Chanter places abjection at the heart of film analysis while simultaneously challenging fetishistic analyzes that perpetuate hidden abjection of women and minorities. She notes, “Abjection offers a way of developing a new direction in film theory” (Chanter, 2008, p. 7). This discussion is extended to colonialism and how feminist postcolonial analyses have often paradoxically reaffirmed patriarchal discourses they seek to counter. It is critical in revealing abjection to not recreate new categories of the abject in its place. Chanter concludes, “If abjection marks the birth of thought, if the affective moment in which a separation between I and another occurs is also the moment at which representation becomes possible, it is necessary to return to such formative moments in order to reshape representation, in order to redraw, infinitely, boundaries.” (Chanter, 2008, 271) Since the abject for Chanter “is applied to systems, it can be applied to a far broader series of cultural productions than Kristeva’s original work.” (Livingston, 2016, 115) For example, this formulation of the abject has been used to reimagine gender to develop a rhetoric of transgression, consider disability to explain how abled persons may resist interaction with disabled persons, and reflect on how re/presentation of death exists in contemporary art (Dohmen, 2016; Mey, 2016; Upadhyay, 2025).

An ongoing debate exists in cinematic cartography, and film geography more broadly, questioning the objectivity or lack thereof within documentaries and non-fiction films (Farish, 2005; Kennedy & Lukinbeal, 1997). Lukinbeal (2000), observes that “geographers need to be cognizant of how representations play an active role in either contesting power structures or, constructing and maintaining dominant ways of seeing.” This debate echoes the arguments of

feminists who challenge objective visions of positivist schools (Cresswell, 2013; D. Haraway, 1988). This debate is extended in feminist theory through a posthuman lens that has challenged humanist conceptions establishing a dichotomy between the positive masculine and negative feminine-minority-foreigner, including the natural world (Braidotti, 2022; Kristeva, 1994). Furthering such conversations, the scholar Laura Mulvey described the erasure of critical aspects of Indigenous culture and historical contributions as Indigenous people via a Manichean remembrance. Such a binarism reveals the “political dispossession, repression in image and representation and the fetishisation of a false history” that often characterize cinema (Mulvey, 1996, p. 159).

Archives are ripe grounds for studies of abjection as repositories of colonial memory and sites of sovereign authority. Derrida illustrated this role in the ways archives dictate history by preserving those things stored and erasing those forgotten (Perez, 2020). A broad literature has developed addressing the role of ignorance in colonialist narratives that may include inaccessibility to national history and active disconnection from a nation’s historiography (Nishiyama, 2024; Slater, 2019; Stoler, 2011). “Archival abjection” has been coined as a term to describe the collusion of archives in broader colonial power dynamics and subsequent project to “demystify the archive’s limits on knowing” (Odysseos, 2025, 17).

3.3. Methods

3.3.1 Study site

Utqiagvik is a rural town situated a few miles south of the northernmost point in the United States. The town was known by its colonial toponym, Barrow, until it was changed in a narrow vote by residents to Utqiagvik in 2016 (Hersher, 2016). Many residents continued to refer to

the town as Barrow and the airport has also retained this nomenclature. Utqiagvik serves as the hub of the vast North Slope Borough, an administrative unit similar to a county, that occupies much of northern Alaska. This region was the homeland of the Iñupiat, and they remain the majority population throughout the area. The Iñupiat historically practiced hunting and gathering life ways focused on the annual whaling cycle with many residents of Utqiagvik continuing to honor these traditions (Sakakibara, 2020). Cultural heritage remains a strong and prominent part of life in Utqiagvik with the Iñupiat Heritage Center acting as a “living museum” for residents (Grafton et al., 2025b).

The North Slope Borough’s economy is dominated by the oil and gas industry centered on the oil developments around Prudhoe Bay. Utqiagvik receives significant revenues from oil and gas extraction providing the town with an array of services and amenities (Bodenhorn, 1990). Further development of oil and gas deposits in the North Slope Borough is controversial among residents of the region with some advocating for more development and others citing cultural and environmental concerns as reasons to reconsider the industry’s role in the region (Brower Jr. & Patkotak, 2022; Sakakibara & Ahtuanguaruak, 2021).

As a community situated along the coast of Chukchi Sea that is covered in sea ice for much of the year and in a region home to many endangered species such as polar bears, Utqiagvik would seem prime for tourism development. Local officials have sought to increase tourism to the town and broader North Slope Borough in a series of comprehensive plans (North Slope Borough, 2014, 2019). However, tourism remains a minor aspect of the economy with just 3% of the tourists visiting Alaska traveling to the Arctic portion of the state (Destination Analysts, 2023).

Scientific endeavors became well-established in the area around Utqiaġvik following World War II with the establishment of the Naval Arctic Research Laboratory (NARL) in 1947. Initially tied to the exploration of oil at the site of Naval Petroleum Reserve #4, scientific endeavors continued after oil exploration ended in 1953 and operations were contracted out to the University of Alaska the following year (Wells, 1969). Scientists from a diverse array of disciplines have carried out projects over the years and some interesting guests have visited including sitting senators and admirals (Reed, 1969). While the original buildings at NARL remain in use, notably housing the campus of Iḷisaġvik College and the North Slope Borough Department of Wildlife Management, a modern research facility was completed on site in 2007 (POLARIN, n.d.). The Ukpeaġvik Iñupiat Corporation Science, an offshoot of the UIC Native corporation, is housed in this new research facility and provides logistical support for much of the scientific activity in Utqiaġvik (UIC Science, 2019).

3.3.2 Archival data

The qualitative data in this study resulted from archival research at the Alaska Film Archives housed on the University of Alaska Fairbanks campus. Founded in 1993, the Alaska Film Archives contains more than ten thousand films depicting a wide range of subjects in a variety of genres. Using the term “Barrow” to search the online library catalog resulted in two hundred and two initial results (Fig. 5). This name was utilized since the town of Utqiaġvik was called Barrow prior to the official renaming in 2016 (Hersher, 2016) and we shall refer to Utqiaġvik as Barrow from this point forward. These listings were then narrowed to those from 1972 to the present (the latest film being from 2014) leaving one hundred potential films. Significant political power was returned to the Iñupiat people in 1972 with the establishment

of the North Slope Borough governing district, serving as a turning point in the region’s history. One film, *Oceanographer in the Polar Regions*, was dated prior to 1972 but included in our search results despite these filters. Several other films had unknown production dates with archivists identifying only broad ranges such as the amateur film *Family life etc.* dated sometime between 1940 and 1975. The results were winnowed down based upon their potential relevance to the paper topics by skimming film abstracts, subject categories, and titles. Seventy-seven films were identified as potentially significant with an approximate viewing time of eighty hours. The selected films included traditional documentaries, scientific recordings, amateur films, promotional videos, and B-roll.

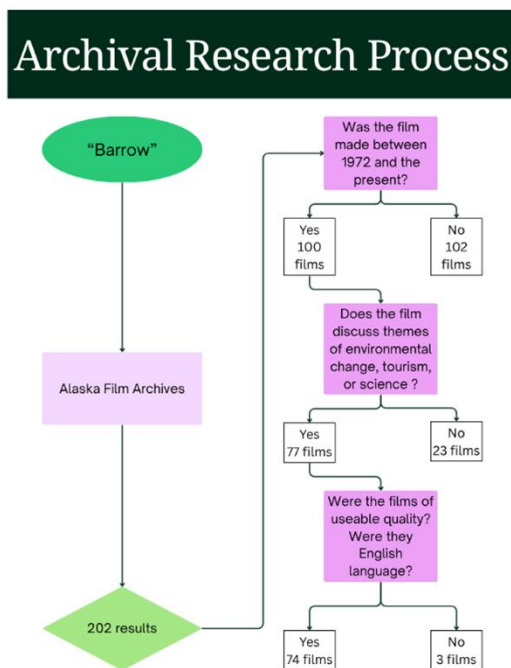


Fig. 5 | Archival research process.

During January and February 2024, sixty-three usable films were viewed in person at the Alaska Film Archives (Fig. 6). An additional three films were viewed that were unusable due to poor quality or language barriers. Eleven additional usable films accessible online through

the Alaska Film Archives digital archives were viewed at a later date. Extensive notes and still images were collected from the usable films. One hundred and eighty-three distinct locations were noted upon viewing. Locations depicted in the film were sorted between identifiable and unknown sites based upon the authors' knowledge of Barrow, cartographic ground truthing using Google Maps (C. Lukinbeal, 2024), and online searches. Of these, one hundred and sixty-four locations were identifiable in either their present or past sites. The remaining nineteen locations could not be identified and were classified as unknown sites. Spatial coordinates for identifiable sites were determined using Google Maps to find latitude and longitude. Upon applying spatial coordinates to the locations, it was found that there were eighty-six unique (non-repeating) locations in the films we viewed.

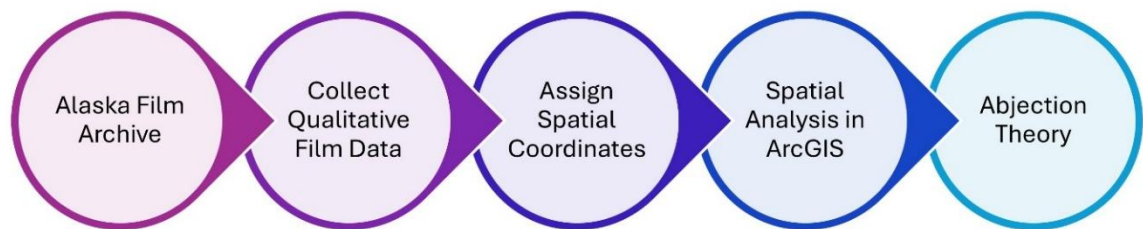


Fig. 6 | Methods.

3.3.3 Spatial data analysis

Developing an historical Geographic Information System (GIS) database is a time-consuming process that involves transferring spatial coordinators into a geodatabase and the affiliated qualitative data taken from films (Gregory & Geddes, 2014; Whitworth & Ayers, 2022). The affiliated qualitative data that we linked to each spatial coordinate formed a row including the name of the location/business, whether the location remained in place or was an historical site, the film ID number from the Alaska Film Archives, year(s) of production, title,

genre, and run time. Also included when available was the director's name, director's sex, whether the depiction of Barrow was positive or negative, whether abjection was evident, portrayed subjects who were named, notes about those subjects, the subjects' sex, and miscellaneous location notes. Using an historical GIS database to map the cinematic cartography of films opens new frameworks of enquiry, navigation of spatial histories, and the raising of new questions related to place image (Hallam & Roberts, 2014). The use of qualitative data within historical GIS databases is a relatively recent method for investigating temporal issues but has developed considerably in the past decade (Earley-Spadoni, 2017; Gregory & Geddes, 2014; Unangst, 2023).

By mapping the spatial locations captured in films, patterns emerge that illustrate how filmmakers portrayed people and places. Of particular interest are those locations recurring across multiple films that construct a shared vision of who and what represented the site through the eyes of directors and amateur filmmakers. As Hallam and Roberts (2014, p. 155) note, through spatial analysis "we can form an overall impression of the type of locations and landscapes that shape the cinematic geography of these generic representations." Such maps are not the end product but rather a tool providing new questions only answered through analysis such as the resulting consideration of abjection in this paper (Baker, 2003). Spatial analysis was completed using ArcGIS Pro 3.6 to map the cinematic cartography of archival films. ArcGIS Pro offers a suite of spatial analysis tools that may be used to further analyze the data collected (Piovan, 2020). This study utilized spatial analysis tools including Dissolve (to aggregate features by the number of times they recurred), Intersect (to combine overlapping features), and Create Feature Class (to create new line and polygon shapefiles). Results of the Dissolve may be found in Fig. 7, with results of Intersects shown in Fig. 9 and Fig. 10.

3.4 Results and discussion

3.4.1 Cinematic cartographies of Barrow, Alaska

Results from spatial data analysis revealed that 56 of 86 unique locations depicted only appeared in a single film, while the other 30 unique locations appeared in multiple films (Fig. 7). Of these 30 repeating sites, the locations that were most often filmed included the Naval Arctic Research Laboratory (NARL), Barrow High School, and the Presbyterian Church (Fig. 8). It is worth noting that the NARL Theatre is part of the larger NARL complex, but we have set it aside as a unique location due to its appearance in a series of documentaries on *SIZONET* made by their scientific team.

As noted above, historical GIS analysis reveals patterns that raise new questions (Hallam & Roberts, 2014). While some locations recur frequently, a majority of sites appear just once across the archival films in this study. This raises the question of why these particular locations are portrayed so frequently and what this says about how filmmakers sought to portray Barrow and its residents. Furthermore, the spatial divisions of women and men found below (Fig. 9 & Fig. 10) raise questions regarding how these sites are being coded by gender. Beginning in section 3.4.2, we will consider vignettes from several films that illustrate how abjection theory helps answer these questions by shedding light on ongoing racism and colonialist attitudes in the archives.

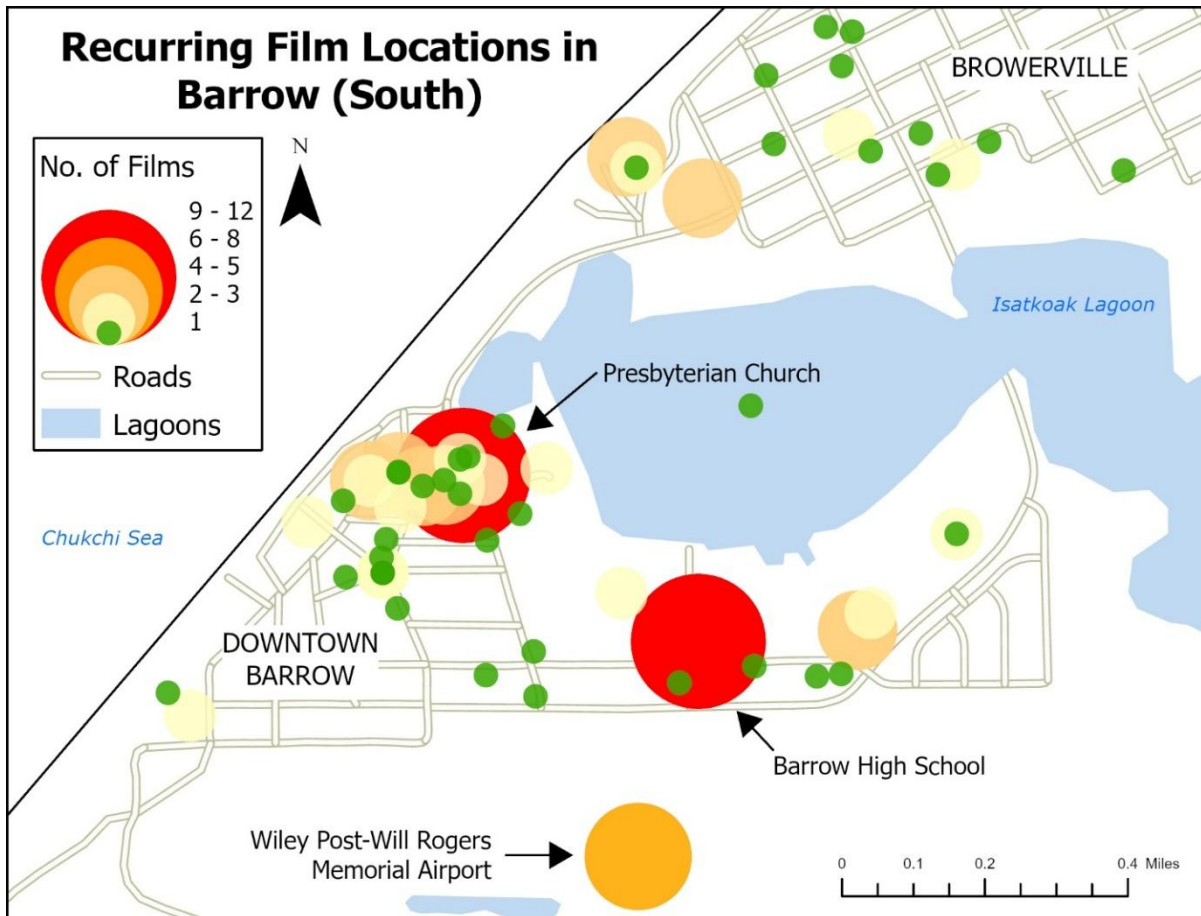


Fig. 7 | Recurring film locations from films housed in the Alaska Film Archives.

Location in Barrow (Utqiagvik)	Number of Films
Naval Arctic Research Laboratory (NARL)	12
Barrow High School	11
Presbyterian Church	10
Wiley Post-Will Rogers Memorial Aiport	8
Ilisagvik College	7
NARL Theatre	7
Arctic Slope Regional Corporation	5
City of Barrow	5
Stuaqpak (former)	5
Top of the World Hotel (former)	5
U.S. Post Office	5
Whale Bone Arch	5

Fig. 8 | Table of recurring unique locations in films of Barrow, Alaska.

As the centerpiece of colonialism in Barrow, it is unsurprising that many outsider gazes were directed at NARL for both its military history and ongoing scientific endeavors. The aforementioned *SIZONET* films (a series of unedited interviews, footage of fieldwork, and b-roll) are almost entirely shot at NARL. As *Odyssey – the Arctic Conquest* (filmed sometime between 1972 and 1983) argues in triumphalist tones, “Much of what we know about the Arctic region: it’s ice, the water, it’s atmosphere, and land has come from these buildings located in Barrow, Alaska.” Like many of the films focused on scientific activities in Barrow, *Odyssey – the Arctic Conquest* almost entirely ignores the Indigenous peoples of the land, depicting the activities at NARL as taking place in isolation surrounded by empty tundra. Similarly, there is little consideration for the value of Indigenous and local knowledge (ILK) with Western scientific knowledge often celebrated exclusively.

Barrow High School occupies a more liminal space between the colonialist gaze and Indigenous perspectives. Of the eleven films depicting the high school, three adopt a local viewpoint by filming community events and interviewing residents on the broader role of the school for the community. In *Alaska Review 54* (1984), the filmmakers interview the school’s principal, Chet Hardwood, who speaks on the impact of the school as a space for the community. This is powerfully reinforced in the later films, *Inupiaq dances, 1988* and *Kivgiq 1991: The Messenger’s Feast*, that appear to be made by Inupiaq residents of Barrow and depict the community coming together in the high school gymnasium. The Presbyterian Church in downtown Barrow has served as a defining feature of Barrow’s skyline since its construction in 1910 following a fire that destroyed the original structure and subsequent enlargement to add steeples in 1915. Similar to the high school, the church is juxtaposed across these films as

both symbol of colonialism and an important part of the Iñupiaq community in which many members are today deeply committed to Christianity (Laugrand & Oosten, 2013).

Results from gendered analysis of the spatial locations depicted in the films revealed spatial divisions between where women and men were situated, and under what circumstances (Fig. 9). Men appeared independent of women across twenty-four films at fifteen unique sites. They were most often shown at the Naval Arctic Research Laboratory (5 films), Barrow High School (3), Mayor's Office (2), and Airport (2). Men were frequently depicted in authoritative roles such as leading scientific experiments, giving speeches, or in positions of political power. No men were shown in the Browerville neighborhood even though this is a large residential area and contained a number of businesses.

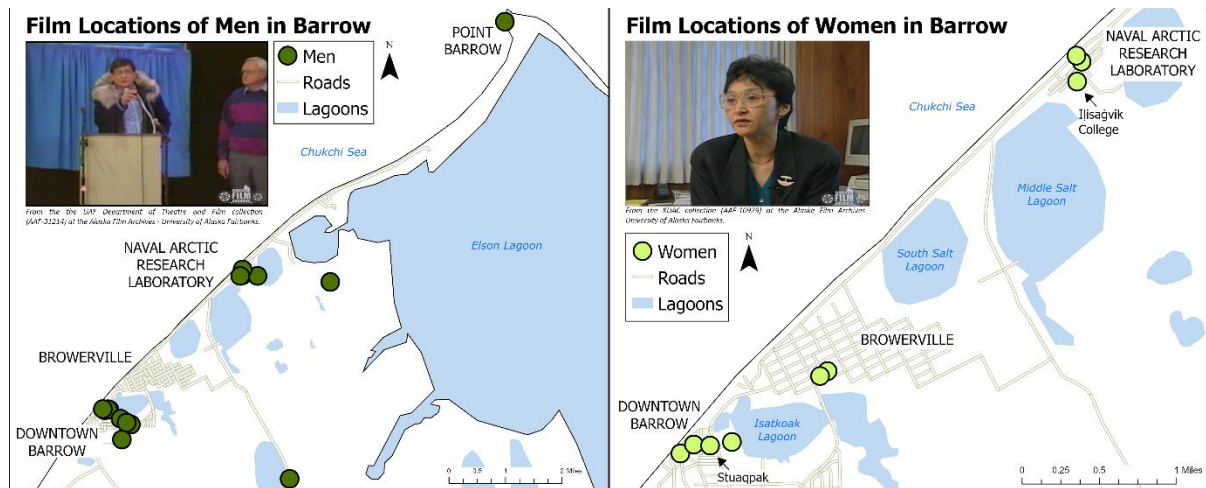


Fig. 9 | Film locations depicting men and women independent of each other in Barrow, Alaska.

In comparison, women appeared across just eleven films at nine unique sites. They were most often shown at Iñisagvik College (2 films) and Stuaqpak (2). Women were often depicted in stereotypically feminine spaces and roles such as shopping at grocery stores, acting as educators, and in service positions. However, women were shown in positions of power and

influence in several films. Most notably, multiple presidents of Iḷisagvik College, Elders at a conference, and the North Slope Borough Health Director were interviewed.

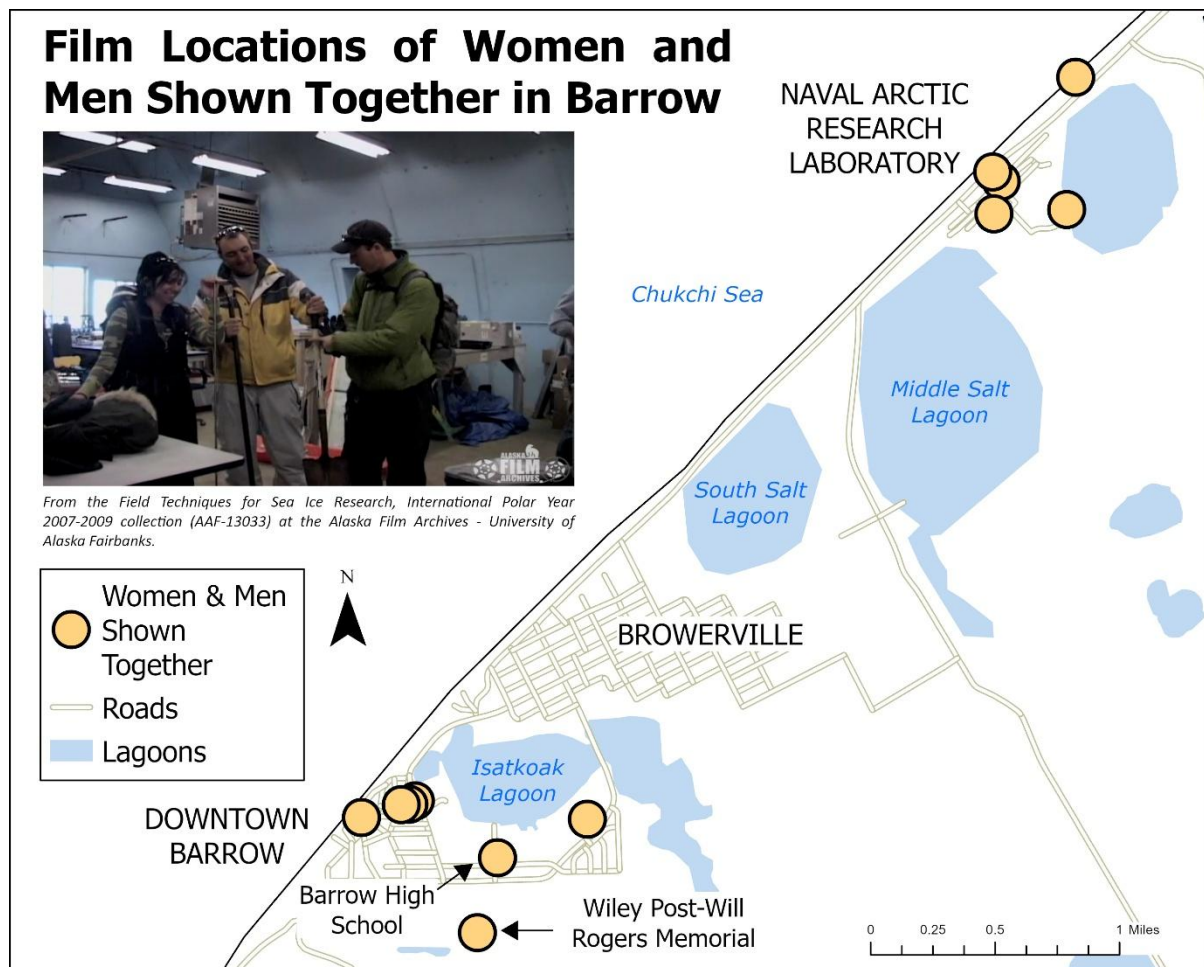


Fig. 10 | Film locations depicting men and women shown together in Barrow, Alaska.

Film shots depicting women and men in shared spaces (19 films) were more common than those portraying women only (11 films). Of the nineteen films showing women and men in shared spaces, there were thirteen unique locations depicted (Fig. 10). Shared spaces most frequently filmed included the Barrow High School (4 films), Naval Arctic Research Laboratory (3), and Wiley Post-Will Rogers Memorial Airport (2). Notably, there were no films that included scenes of Browerville. As described above, Barrow High School serves an

important role for community gatherings with the Kivgiq festival and a celebration for the visiting explorer, George Meegan, and his friend Lt. Col. Norman D. Vaughan. However, the other films portraying the high school included two in which students were the focus. Many scientific films documented experiments and research taking place at NARL. In addition, one *SIZONET* documentary set at NARL focused on Iñupiat Elders discussing environmental change and taking questions from students. The two shots from the airport depict people either deboarding to visit Barrow or boarding for outside destinations.

3.4.2 *AIDJEX 1972*: Scientific Colonialism and Abjection in the Arctic

The scientific documentary *AIDJEX 1972* details the Arctic Ice Dynamics Joint Experiment (AIDJEX) conducted between the United States, Canada, and Japan. A temporary scientific station was established on an ice island approx. 300 miles north of Point Barrow. Utilizing ice islands for scientific research had a long history in the region starting in 1952 and eventually including a station housed for four years on an ice island dubbed the Arctic Research Laboratory Ice Station II between 1961 and 1965 (Reed, 1969; Woods Hole Oceanographic Institute, n.d.). The goal of AIDJEX was the development of a holistic sea ice cover model taking into account oceanic and atmospheric influences (Untersteiner et al., 2007). The experiment began in 1972 with two pilot studies, a period documented by the *AIDJEX 1972* film, continuing with varying levels of engagement through 1978.

Abjection of Indigenous locals and women more broadly are characteristic of the colonialist power dynamics at play throughout *AIDJEX 1972*. As with many of the films in these archives, *AIDJEX 1972* opens with the narrator establishing the historic rejection of the Arctic as a place “feared and avoided as a frozen, desolate, and hostile wasteland.” They note

how discovery of oil development and scientific research has generated new public interest in the region. The Naval Arctic Research Laboratory (NARL), which features so prominently across these films, was a thriving institution with 750 to 800 scientists employed there at any given time. NARL would serve as the primary provider of support services for the AIDJEX project with a small cameo near the start of the documentary (Untersteiner et al., 2007).

Barrow is conspicuously absent throughout the film, and the local population is largely nonexistent. This absence is made all the more notable by the only example of Iñupiaq locals being depicted during which “Eskimo carpenters” provided by NARL assemble thirty plywood buildings prefabricated in Barrow (Fig. 11). The carpenters silently go about their work with no context of them as people or a distinct culture aside from the stereotypes conveyed by the term “Eskimo.” As quickly as these workers appear, they are replaced by scenes of the scientists now using the buildings they constructed. The racist erasure of minority others is not confined to Indigenous people but also to the American’s Japanese allies. The sole Japanese scientist interviewed goes unnamed unlike all his White colleagues. The dehumanizing of this scientist through the intentional absence of his name is a stark reminder of the racist colonial attitudes prevalent among scientific ventures of this era.

Yet films like *AIDJEX 1972* also provide an opportunity to recognize the vital role played by Indigenous peoples in many scientific activities of the era (Raj, 2016). None of the experiments run or models produced by the scientific crew would have been possible without the support services provided by Iñupiaq locals out of Barrow. As Alison Griffiths (2025, p. 92-93) notes, “Looking past the racist iconography... allows us to acknowledge and even celebrate the role of Indigenous intermediaries and go-betweens who are not excised from the historical record.”



Fig. 11 | “Eskimo carpenters” constructing housing on an ice floe. From the NARL collection (AAF-233) at the Alaska Film Archives – University of Alaska Fairbanks.

Abjection of the feminine is prominent throughout *AIDJEX 1972* with frequent celebrations of the scientists’ masculinity such as how “the men can relax” after a hard day’s work with a game of cards or “follow the camp doctor’s prescription of alcohol in moderate doses.” Scientists in these films are often portrayed as akin to an earlier era of explorer whose exploits were often similarly recorded with reference to how they embodied masculine ideals (Griffiths, 2025). No actual women are depicted in *AIDJEX 1972*, although the former director of the project notes in his retrospective how “evolving equal rights legislation of the time ended the long history of drifting ice camps as an exclusively male domain, and the AIDJEX camps were the first fully co-ed establishments on the ice” (Untersteiner et al., 2007). Evidently this wasn’t yet the case during AIDJEX’s pilot studies or the filmmakers chose to ignore these pioneering women. Yet the abject feminine is well represented within the documentary by sexualized pin-ups of nude women hung on the walls and captured by the filmmakers (Fig. 12). Both shots of pin-ups pass without narration, implicitly reminding the viewer that regardless of the possible offscreen presence of women the AIDJEX station was first and foremost a masculine space. This raises the question of how many women would feel comfortable in these co-ed establishments on the ice, while making it clear that the feminine

is both a desired and unwanted other within the camp. The pin-ups offer a particular vision of the feminine that contrasting starkly with that of pioneering female scientists such as Dr. Vera Biyo shown studying nutrient cycles while dressed in a lab coat in *Oceanographer in the Polar Regions* a few years earlier in 1969 (Fig. 15). Dr. Biyo and other female scientists “were excluded and marginalised for the audacity of their presence, while men objectified a different sort of woman” at stations like AIDJEX around the polar regions (McCahey, 2021). Films like *AIDJEX 1972* reinforce the prevailing abjection of women in documentary films of the time period and hypocrisy of those championing the inclusion of women while allowing such toxic environments to endure.



Fig. 12 | Pin-ups on the walls of the AIDJEX station. From the NARL collection (AAF-233) at the Alaska Film Archives – University of Alaska Fairbanks.

3.4.3 *Alaska Pipe Dream* and the “Eskimo ghetto”

The Trans-Alaska Pipeline System (TAPS) developed to link oil fields in northern Alaska, spurred by the discovery of oil in 1967 at Prudhoe Bay, to oil tankers waiting at Valdez in southern Alaska, was deeply controversial from the start as environmentalists actively opposed the project despite popular support in the state (McIntosh, 2024). By 1974, TAPS was fully under construction and the first oil would follow the pipeline south in 1977. The film *Alaska*

Pipe Dream (1973), part of BBC Two's *Horizon* series, is situated in time during the height of the debate around TAPS but prior to the OAPEC oil embargo triggering the 1973 oil crisis in the United States that would fast-track construction of TAPS. As a result, the filmmakers adopt a strong stance in opposition to TAPS, which they view with some foresight as, "almost arrogant beyond belief, and yet, it almost certainly will happen."

Alaska Pipe Dream romanticizes the precolonial North Slope as a place where, "Both man and beast were in equilibrium together." False histories are common features of historical media including the imaginary Cuyahoga River fire of 1969 and multiple differing accounts of the Spanish conquest of the Americas (Cronin, 2019; Druick, 2007; Foster, 2025). The British filmmakers of *Alaska Pipe Dream* use this false history to argue that technological modernity and the subsequent collapse of traditional values in contemporary Barrow have resulted in a host of "societal ills" plaguing the town. They continue that "over two thousand Eskimos have moved in and sadly, it's become a rather tawdry, ugly, unhappy imitation of an American town... a sort of Eskimo ghetto." Similar to the depiction of *AIDJEX* 1972, the Iñupiat are treated with colonial disdain as scenes of detritus around town are mixed with those of supposed vice such as several Iñupiaq men playing billiards (Fig. 13) Like a horror movie, *Alaska Pipe Dream* focuses on the "repugnant attraction" of an Arctic fantasy (Nel, 2012, p. 548). *Alaska Pipe Dream* insists that the Iñupiat were better off in precolonial times demonstrating strong values and harmony with nature, but in doing so views the Iñupiat through a colonialist prism that subjects modern Indigenous peoples to being abject for the crime of adopting the modernity of White, masculinist ideals. Paul Vaughan, the narrator famed for his work with BBC, creates a "false history" for the Iñupiat that imagines them as the literary noble savage rather than real people who might embrace modernity with full awareness

of the positive and negative outcomes (Mulvey, 1996, p. 159). As Nel (2012, p. 548-9) argues, “What is noticeable about the abject is its ambiguous nature: it repels, but simultaneously attracts.” The filmmakers are attracted by the false histories they have constructed but repelled by their own colonialist perceptions of Barrow. It is notable that the film offers no alternative to the embrace of technological modernity for the Iñupiat of Barrow. The goal of the film is not to revert the Iñupiat to a more noble way of life or encourage them toward a different form of modernity. It is to associate them as part of the last untouched ‘wilderness’ in Alaska that should be preserved. To the filmmakers of *Alaska Pipe Dream*, little seems to distinguish the Iñupiat from the polar bears or tundra.



Fig. 13 | Scenes of detritus in Barrow. From the British Broadcasting Corporation (AAF-1959) at the Alaska Film Archives – University of Alaska Fairbanks.

Following a detour to the Inuit community of Inuvik in Canada, we return to Barrow for one of the few examinations of tourism found in these films. At the time, there were two commercial flights into Barrow daily (there is now just one) and tourists are shown deboarding the plane only to get into what appears to be a decommissioned military vehicle transformed into a tour bus. They make a series of planned stops including listening to locals sing traditional songs, viewing a blanket toss, and a visit to an ice cellar (or “Eskimo fridge”). In an example

of false realities being constructed, the tour concludes with a sled dog ride. As the narrator, Paul Vaughan notes, “The only problem is there are no Eskimo owned dogs in Barrow and no snow for a sled to run on.” Instead tourists partake of a “sled” on wheels that in the filmmakers’ eyes “is about as far as you can go to exploit a culture that was once so perfectly in harmony with its world.” The film leaves it unclear how long tourists are staying in Barrow but it seems likely that many are day trippers flying in on the first flight of the day and out on the second as was common practice in this era (Sem & Goff, 1996). *Alaska Pipe Dream*, in keeping with its title, concludes that oil revenues are unlikely to help the people of the North Slope Borough.

3.4.4 *A Time to Remember*: Religion and Abjection

The 1985 film *A Time to Remember* was produced by a media company based out of Colorado and engaged by the North Slope Borough Planning Department to make the film. Its narrative centers on Fred and Anna “Nan” Klerekoper’s lives in Barrow while Fred was minister at the Presbyterian Church from 1936 to 1945. The film opens with a few brief shots of contemporary Barrow and describes the vast territory of the surrounding North Slope region. A majority of the film focuses on photographs taken by the Klerekopers as narrators (Lea Phillips, Heidi Pratt, Dave Jackson) read excerpts from their journals. Near the conclusion of this thirty-minute documentary, a few minutes are given to journals written by two Iñupiaq residents of Barrow, Lloyd Ahvakana and Harold Kaveoiook, who provide details of life there during Fred’s ministry.

To Fred Klerekoper, the church was the “the social, as well as the religious center of Barrow.” Fred and Nan do not shy away from critiquing their adopted home through the colonialist gazes of disapproving parents but also note what they considered positive aspects

of life on the North Slope. Fred describes the poor construction of many homes, as Nan marvels at the “strange” experience of the midnight sun. In reflections on the Iñupiaq value of sharing food amongst the community, Fred hurries to assure us that this is no “primitive communism” but simply insurance to get through difficult times. On the other hand, Nan describes how “the people were ambitious and hardworking” and Fred echoes his appreciation of Iñupiaq skill and toughness. In a fascinating passage, Nan claims that all the Iñupiaq women in Barrow had health issues, that nearly none weighed more than 135 pounds, and that child carrying was their usual condition (Fig. 14). Another excerpt from 1937 has Nan divining the North Slope’s future economic reliance on oil revenue with her observation that, “There are pitch and oil deposits near here. If they could be developed and people be given steady employment, things could be so much better.”



Fig. 14 | Iñupiaq woman with child. From Media Design Associates (AAF-6189) at the Alaska Film Archives – University of Alaska Fairbanks.

Lloyd Ahvakana and Harold Kaveoiook offer Indigenous perspectives through the editing and lens of a documentary that clearly wants to remind the viewer of the foreignness of the Arctic landscape. Kaveoiook describes life in 1930s Barrow as “hardship” and an ongoing sense of confusion among the Iñupiat as to how best they might adjust to Western culture.

Ahvakana describes how his family had no money while he was growing up except for a dime that was donated to the Presbyterian Church at Easter. The film concludes that the Iñupiat “face problems that to our knowledge no other people have had to face: to change from a hunting economy and lifestyle to the jet age in two generations. Adding to the problem: tremendous wealth.”

Similarly to *Alaska Pipe Dream*, the film seeks to celebrate a false history for the Iñupiat that places the colonialist Presbyterian religion at the heart of life in Barrow during a period of great poverty and forced assimilation resulting in intergenerational trauma for many Iñupiat (Moghaddam et al., 2013; Parks, 2022). The Barrow depicted by the Klerekopers, with a few exceptions, is one in need of saving by White outsiders. Iñupiaq values, traditions, and life ways are those of wayward children in need of correction. Although Kaveoiook notes that, “The school and the church were very central,” neither he nor Ahvakana offer particularly robust praise of the Presbyterian Church. It is notable that no excerpts offer Iñupiaq perspectives on how the church was “central” or the positive contributions it made to Barrow. On the contrary, the film practically breathes condescension in the excerpts from the Klerekopers. This is particularly apparent at the conclusion as, akin to *Alaska Pipe Dream*, Iñupiaq wealth is portrayed by the narrator as a corrupting power contradicting Nan’s assessment. The narrator’s final words, “Eskimos of the North Slope: I believe in you,” represents a powerful abjection of the Iñupiat by the filmmakers who reject their present existence even as they attempt to reshape them through a Christian gaze.

3.4.5 *Oceanographer in the Polar Regions*: Masculinity and Science

The film *Oceanographer in the Polar Regions* (1969) was produced by the U.S. Navy to document scientific projects taking place in both the Arctic and Antarctic. Akin to many depictions of these regions, the film begins dramatically: “The polar regions. Ice-locked repositories of time.” A celebratory accounting of the “heroes” of Arctic exploration follows before focusing attention on the contemporary “men [who] come as scientists.” Describing American scientific research in Antarctica, the unnamed narrator ominously notes scientists “from other nations” also present in the region.

An interview with Dr. Max Britton, the director of the Naval Arctic Research Laboratory, centers on the drifting ice stations previously discussed in *AIDJEX 1972*. In the director’s opinion, these experiments are the most exciting aspect of the scientific research taking place in the American Arctic. Several other men are interviewed about their scientific activities at NARL including Tom English studying the distribution of flora and fauna in the seas and Dr. Kenneth Hunkins whose research on the shape and structure of the ocean bottom is important for the Navy’s sonar programs. The film describes the rugged conditions oceanographers face doing this research and the surprisingly crucial role of nuclear submarines that can stay under the ice studying bathymetry. Andrew Asaur, the Chief Scientist at NARL, discusses the promise of polar engineering and openly dreams of sending huge tankers through the Arctic Ocean to take oil back south. His colleague, Waldo Lion, similarly tries to engineer tankers that can get through the sea ice.

Notably, we see only one woman who is conducting scientific research amidst her male colleagues, Dr. Vera Biyo of the University of Alaska (Fig. 15). The narrator explains that Dr. Biyo studies nutrient cycles and how the ice cover helps production by providing stability. The

film closes with triumphal music set to shots of soaring snowy mountains and men braving harsh conditions. As the film ends, the narrator opines how men come “seeking a new kind of conquest.”



Fig. 15 | Dr. Vera Biyo. From the NARL collection (AAF-163) at the Alaska Film Archives – University of Alaska Fairbanks.

Abjection of Barrow and its Iñupiaq residents is never clearer than in the opening narration of *Oceanographer in the Polar Regions* during which the narrator asks, “How can man himself live for months of darkness in a region that appears to belong to another planet rather than to the Earth?” The film espouses the view that the North Slope was a frozen wasteland and its alien inhabitants too loathsome to even make an appearance in a film about the scientific activity taking place in their homeland (Cheetham, 2024; Mendenhall, 2016). A colonialist ethic pervades the film as it opens celebrating the invasive explorers of an earlier era and closes with promises of new “conquest” of the polar regions. Women, represented by the lone figure of Dr. Vera Biyo, are also subject to abjection with the absence of her voice confirming the questionable nature of her presence at NARL in the filmmaker’s gaze. Unlike most of the other films housed in the Alaska Film Archives, *Oceanographer in the Polar Regions* is presented by the U.S. Navy, lending a powerful air of authority to its narration. Much like American

society in the 1960s, this reinforces the prevailing abjection of women and Indigenous peoples at the time.

3.4.6 *Alaska Review*: Abjection Made in Alaska

Alaska Review was a statewide television program produced by Independent Public Television, Inc. between 1976 and 1987 to examine policy issues facing the state with the ostensible goal of helping citizens make informed decisions (Schmuland, 2023). As part of this study we viewed five episodes of the series (three half-hour and two hour long episodes) housed in the Alaska Film Archives. While several episodes offer unique perspectives on issues facing Barrow, the film we will consider here is *Alaska Review 35* (1979), “Oil Beneath The Oceans...” that investigated the potential for oil drilling offshore of Alaska. *Alaska Review 35* was directed and narrated by Mark Weller, a native of Wisconsin, who got his start making documentary films in Alaska. Weller would relocate to Wisconsin in 1980 to pursue a position as Wisconsin Public Television’s senior producer making *Alaska Review 35* one of his final contributions to the series (100state, n.d.; D Anthony, n.d.).

Beginning with footage of Don Clocksin of Alaska Legal Services testifying about the dangers of offshore drilling, the film opens with strong opinions against offshore oil drilling in the state. This theme of opposition to oil development is constant throughout *Alaska Review 35*. Bill Hopson with the Alaska Oil and Gas Association provides the first voice in favor of oil development by arguing for more self-sufficiency as U.S. dependence on foreign oil increases. A representative of BP, Roger Herrera, then talks about the untapped potential for oil development in Alaska, comparing it to the heavy development already in place in the rest

of the United States. Herrera complains that the federal government is not opening the best areas for exploration first in the current five-year lease plan.

The film focuses on Kenai while interviewing Cal Owens, safety supervisor for Union Oil, on how oil is extracted through the local oil refinery. Vincent O'Reilly, mayor of Kenai, is a proud proponent of oil development in Alaska arguing for the large economic impacts on his town. O'Reilly shows off the new fire department building and equipment, adding that this is a “direct result” of oil revenue.

Next, we visit the North Slope Borough where they interview Archie Brower, president of the Kaktovik Iñupiat Corporation who takes the opposite stance by arguing that Indigenous life ways and oil development are incompatible. The film transitions to a consideration of oil development in the Beaufort Sea and potential to extract a million barrels of oil there. Herrera is shown advocating for oil development there, while Clocksin again testifies that Indigenous peoples are opposed. For a scientific assessment, the film interviews Dr. Gunter Weller of the Arctic Outer Continental Shelf Program about drilling in ice and the technical issues this poses. Weller explains that there is no adequate technology to deal with a cleanup in sea ice. In Barrow, they briefly interview Eben Hopson, mayor of the North Slope Borough, who adamantly argues that accidents always happen.

Roger Herrera claims the best place in the world to have a spill would be on the Arctic ice where it would be possible to simply scoop it up for removal. He claims the Alaskan experience is similar to the Shetland Islands. The documentarians travel there where Loughton Johnson urges strong government regulations for pollution controls. Johnson explains how the Shetland Islands have just recently suffered an oil spill at Sullom Voe in 1978 before the oil terminal was even opened. Several unnamed islanders describe the horrific pollution they've dealt with

since the oil development began. *Alaska Review 35* concludes with a brief segment on Kodiak Island back in Alaska where locals are worried about the impact of oil development on their plans to expand bottom fishing. Weller, the narrator, grimly closes with the inevitability of oil development in Alaska's future.

At first brush, *Alaska Review 35* would seem unlikely to have a place among the other films practicing abjection of the North Slope. Several Iñupiaq leaders of the region are interviewed and the episode repeatedly emphasizes Indigenous opposition to oil development in the state. Yet, the Indigenous voices that are heard have scant time compared to the many White ones that dominate the proceedings. We hear almost as much about the Indigenous perspective from Don Clocksin of Juneau as we do from actual Indigenous people. Clocksin was undoubtedly a significant figure in Alaskan history serving in the state legislature in the 1980s, including two years as House Majority Leader (*Obituary – Remembering Don Clocksin*, 2020). But the brief glimpses of Indigenous leaders only reinforce the abjection of Iñupiaq peoples during this time, even among their supposed allies. Worse, Indigenous peoples of Alaska are treated as a monolithic block politically with no actual agency of their own. Many Alaska Natives have historically been among the strongest advocates for oil and gas development, and this continues to the present (Brower Jr. & Patkotak, 2022). Such erasures of the complexity of Iñupiaq politics is typical of their subjection to colonial binarism that forces Native peoples into false histories (Mulvey, 1996).

3.4.7 *Google in Barrow*

The last film we want to consider in the context of abjection is *Google in Barrow* (2008) that documents a group of Google employees visiting students at Barrow High School to

provide instruction on using Google products. Opening to a half-empty theatre of students half-listening, we see part of a presentation by an unnamed woman who uses Fairbanks, Alaska as an example of navigation in Google Earth. The film then switches to a classroom where the camera follows several students working with Google Earth as the instructor approaches them to offer guidance.

Jane Kanayurak has never used Google Earth before but finds the experience “cool.” She wants to visit England someday and a friend sitting next to her chimes in that Spain tops her destination list. A shot of a nearby student wearing a Dallas Cowboys hoodie offers a transition. They next interview Tiana Elkins who also hasn’t used Google Earth before but makes it clear that she has used Google Maps. Tiana has never left the state of Alaska mainly traveling in the state for cross-country competitions.

A student named Maggie is shown looking at Denali and sharing that she finds the mountain interesting. The same woman who presented in the theater asks the class whether anyone has traveled to Africa and Sam George, a tenth grader, says he has visited Nigeria. The presenter then describes maps in Africa as “non-existent” before correcting that, “I mean, they are existent, but it’s really hard to find a good map.” She continues by talking about getting lost in Barrow without a map and probably getting eaten by a polar bear. A discussion on using landmarks where roads are unnamed follows. They focus on Sam who says he has used Google Earth but didn’t know there was a flight simulator and how he has no idea what he wants to do after graduating. He explains that he could map out his family’s fishing hole using Google Earth.

As a promotional film presumably meant to paint Google in a positive light, the abjection of Indigenous and local students in *Google in Barrow* is a profound reminder of the colonialist

attitudes still imposed on peoples of the Arctic even in more recent films. When Jane Kanayurak says she has never used Google Earth near the start of the film, she is met with complete disbelief and condescension by her interviewer. Similar to *Oceanographer in the Polar Regions*, Barrow and its inhabitants are alien to the filmmakers of *Google in Barrow* and therefore subject to the repugnant appeal described by Nel (2012) above. This exchange typifies the clash of worldviews that often underlies Indigenous areas and intrusive technological mindsets (Pannekoek, 2001; Ruth, 2020). It's unclear whether Tiana Elkins overhears this conversation but easy to assume this attitude explains her rush to assure the Google representatives that she has at least used Google Maps instead. The abjection of minorities in this film extends far beyond American shores, as the entire continent of Africa is painted in broad, negative strokes with stereotypes of knowledge being “non-existent” across the region. Similar to the technological colonialism facing Indigenous peoples in the Arctic, the peoples of Africa often face tensions with the introduction of Western technologies (Pheko, 2025; Ugar, 2023).

What these vignettes reveal when taken together is a continual extension of the colonialist gaze accompanied by ongoing abjection of women and Indigenous peoples. White, outsider gazes are privileged in these films with Iñupiat perspectives and voices minimized or rejected. False histories of the Arctic abound that are simultaneously attracted to Indigenous life ways and loathsome of modern Iñupiat. Women are subject to sexual fetishization or rejected as interlopers intruding into the sphere of men and (masculine) science. Spanning nearly five decades of filmmaking, it is evident from these collective vignettes that abjection and colonialism remain prominent features in much of the film depictions of Barrow, and desperately in need of alternative cinematic cartographies.

3.4.8 Alternative Geographies of Barrow: the Iñupiaq Gaze

Of the six filmmakers we were able to identify through historical records and online research, only one was of Iñupiaq ancestry: Ronald H. Brower who directed the film *Youth and Elders conference in Barrow-tape 5* (2012). Brower was born in Barrow in 1949 and spent most of his life living there. He assumed prominent positions in the town working for the Ukpeaġvik Iñupiat Corporation for twenty-one years (including eight years as UIC's president), serving as the founding director of the Iñupiat Heritage Center, and serving as president of the Inuit Circumpolar Council-Alaska (University of Alaska Fairbanks, n.d.). As an Iñupiaq resident with deep ties to the community, we may expect that Brower's film would offer us an insider's gaze of Barrow unlike most of the other films housed at the Alaska Film Archives.

Ronald H. Brower's film documents the Youth and Elders conference that took place in 2012 opening with scenes of a group reciting the Lord's Prayer. This is followed by a speech given by Pearl Brower, president of Iḷisaġvik College. Pearl Brower argues that Iñupiaq culture has a place in higher education, particularly the Iñupiaq language, which she urges the youth present to preserve.

A second speech is given by Rosemary Berg, a student at the University of Alaska Fairbanks who was crowned Miss WEIO 2013 (Fig. 16). The World Eskimo-Indian Olympics (WEIO) are a set of games that occur every July in Fairbanks and include the pageant Berg won. Berg's platform was "hope for Alaska," which she chose to bring a positive message to Alaska Natives. She notes, "“There's so much power in speaking positivity at life...” Berg continues by speaking on the importance of owning one's own identity to have pride. She

believes that too many Iñupiat have a part of their identity that's Native but that they don't embrace and may try to hide. Berg recounts her own experiences with a boyfriend at the age of fourteen who denigrated her Iñupiaq culture and tore down her self-confidence. She reminds those in attendance to, "Define yourself."



Fig. 16 | Rosemary Berg, Miss WEIO 2013. From the Ronald H. Brower collection (AAF-16982) at the Alaska Film Archives – University of Alaska Fairbanks.

The film concludes with a fascinating workshop on language planning guided by Glory Henry, who is an expert in group process. Glory notes that the “whole system” needs to be engaged in language preservation... family, friends, neighbors, organizations, etc. Her workshop starts at the individual level, asking what each person can do to promote language preservation. A separate group of four youths led by Glory report on their work envisioning what they want the future to look like. In particular, these youth wanted more traditional activities where the whole community is working together and greater focus among youth on hunting and fishing activities away from the town. Glory then has the larger group move chairs around in the room to do a voluntary walking exercise. The goal is to stay an equal distance from two people you've selected mentally while never letting them know they were your selected people. Much confusion is painted on the faces of Elders and complete chaos reigns

as everyone attempts to position themselves simultaneously. In closing, Glory ties this back to planning and change processes.

Youth and Elders conference in Barrow-tape 5 provides a powerful counternarrative to the abjection of the Iñupiat pervasive across many of the other films. Through the Iñupiaq gaze, we see empowered Indigenous people working together to preserve their culture, language, and community. Strong senses of self-identity and celebration of Indigenous culture have been found to have many positive outcomes for Alaska Natives and Indigenous peoples globally (Buckingham & Hutchinson, 2024; Grafton et al., 2025b; McHugh et al., 2014). Unlike many depictions in American popular film that present aging women in negative ways, the Elders depicted in *Youth and Elders conference in Barrow-tape 5* are honored for their wisdom and shown as important members of the community (Bazzini et al., 1997; De Sutter & Van Bauwel, 2023). Cinematic cartographies, like real-world geographies, access a range of emotions, philosophies, and forms of messaging. *Youth and Elders conference in Barrow-tape 5* offers a vision of Barrow and the Iñupiat that celebrates Indigeneity and the cultural heritage of the North Slope region.

3.5 Conclusion

Extensive notes and still images were collected from the usable films focused on three key questions: (1) How are these films shaping Barrow's place image through time?; (2) How have women and the Iñupiat depicted in these films been subject to abjection?; and (3) What locations were depicted and what spatial patterns exist between the films? An historical GIS database enables spatial analysis of qualitative data such as that collected in documentary films but often cannot resolve the same questions raised through spatial analysis independently

(Baker, 2003; Hallam & Roberts, 2014). Abjection theory, with its unconscious loathing and rejection of the Other, offers answers to the spatial divisions facing women and Indigenous peoples within these films (Chanter, 2008; Nilsson, 2019; Parry et al., 2024). In applying abjection theory to the results of spatial analysis, we revealed persistent abjection of women and Indigenous people in many of the films considered in this paper. By mapping the recurring locations within the cinematic cartography of these films, we find ongoing colonial power dynamics at work in the community of Barrow (Fig. 7). Locations that frequently feature such as the Naval Arctic Research Laboratory (NARL) and Presbyterian Church were built by outsiders to the community to promote external agendas. It is no surprise then that the outsider (filmmaker) gaze was frequently drawn first to these colonialist structures and often simultaneously centered White voices in Barrow, serving as a powerful reminder of the persistent legacy of colonialism and continuous abjection of Iñupiaq people living there by many visitors. In contrast, the Browerville neighborhood where many Iñupiaq residents live is conspicuously absent from the cartography of many of these films. Notable locations featured in Browerville such as the Iñupiat Heritage Center and Fire Station No. 2 were local structures built by community insiders. The Iñupiat Heritage Center celebrates Iñupiaq cultural heritage and life ways with both women and men honored for their roles in the community. The handful of other locations shown in the Browerville neighborhood just once included several modern religious buildings (such as the Ba’hai Center), Barrow Lions Hall, Arctic Trading Post, and Native Village of Barrow Tribal Court. Such locations resonate more with Indigenous/feminine/local perspectives helping to explain the exclusion of Browerville from most of the films housed in the Alaska Film Archives.

Abjection of women was further revealed in the spatial analysis of the films depicting women in half as many films as men and in a much narrower range of locations. Women remain underrepresented in the broader American cinema with fewer films directed by women (Murphy, 2015; Wilk, 2024). Akin to the abjection of Iñupiaq people more generally, the people shown in Browerville were exclusively women depicted at the Iñupiat Heritage Center (in *Youth and Elders conference in Barrow-tape 5*) and adjacent Senior Center. Across five decades of films spanning from the 1970s to the 2010s, women were frequently subject to abjection but also depicted in positive ways. The most significant women regarding the latter were the two former presidents of Iḷisaḡvik College, Edna McLean and Pearl Brower opening avenues for richer portrayals in the future.

A limitation of this study was the reliance on the Alaska Film Archives for access to films about Barrow. The inclusion of more modern or online documentaries and amateur films may have increased the representation of women and positive/anticolonialist depictions of the Iñupiat. Similarly, with additional resources other archival collections might have been investigated for additional films. Future research should expand cinematic cartographies to include these sources to determine the full extent of women and Indigenous peoples being subject to abjection in Arctic films. A second limitation was the lack of biographical context we could find about the filmmakers. Many of the films provided no named director or producer, and of those that did it was often impossible to discover any further details of the person beyond their name. In addition, only one woman could be identified as a director (Maya Salganek) making gendered analysis of filmmakers difficult. Adding more films with identifiable directors to the historical GIS database would allow for new types of spatial analysis. We

encourage other researchers to adopt critical theories when using GIS and to make further use of qualitative data sources for spatial analysis.

Results of the spatial analysis and subsequent application of abjection theory revealed the persistent colonialist attitudes prevailing across much of the media depicting the Arctic. Abjection of women and Indigenous peoples in the Arctic can only hamper efforts to implement positive solutions for societal and environmental challenges facing the region. Portrayals of Arctic women that upend stereotypes and more serious engagements with Indigenous cultures are needed as the place image of the region shifts in the public imagination (Cronin, 2019; Goehring, 2022). It is therefore critical that future documentarians and amateur filmmakers carefully consider their portrayal of inhabitants and seek collaboration with local communities to offer more nuanced depictions of the Arctic.

Chapter 4. Last chance tourism? Revealing true tourist motivations for visiting northernmost Alaska²

4.1 Introduction

Tourism is a burgeoning sector of the global economy helping facilitate rebounding growth following the pandemic while spurring debates around long-term sustainability and overtourism (Gavrilov & Kholosha, 2020; McClanahan, 2024). However, many tourist destinations around the world are simultaneously being reshaped by climate change (Gössling, 2002; Lenzen et al., 2018) with dramatic consequences for many of the most appealing elements attracting tourists to those locations (Abram & Lund, 2018; Lee et al., 2017). No region will be affected more than the Arctic where diminished sea ice threatens iconic species like the polar bear (Born, 2019; Rode et al., 2022), and undermines the long-term viability of Indigenous ways of life (Cunsolo Willox et al., 2014; Le Teno & Frison, 2021).

Last chance tourism is a phenomenon that derives from the changing reality of the Arctic in which tourists seek out species and environments adversely impacted by climate change to experience them before it's too late (D'Souza et al., 2023; Groulx et al., 2016; Lemelin et al., 2010). Whether last chance tourism is more beneficial by spurring economic growth or more detrimental by increasing pressure on fragile ecosystems remains subject to vigorous debate (Büscher & Fletcher, 2017; Müller, 2021). Arctic tourist destinations may also need to contend with long-term scenarios of what will follow when these last chances are gone and what “post-Arctic tourism” will resemble (Salim et al., 2023; Varnajot & Saarinen, 2021).

² This chapter was previously published in the *Annals of Tourism Research Empirical Insights*: Grafton, D., Quandt, A., & Chu, V. (2025). Last chance tourism? Revealing true tourist motivations for visiting northernmost Alaska. *Annals of Tourism Research Empirical Insights*, 6(2), 100183. <https://doi.org/10.1016/j.annale.2025.100183>

Despite these concerns, there has been to date a lack of academic attention provided to tourist experiences in the Arctic and community views of climate change adaptation, although public awareness has increased (Lee et al., 2017; Saarinen & Varnajot, 2019). While tourism in Alaska is well-documented (Maher et al., 2014), fewer studies focus on the rural North Slope Borough and its hub, Utqiagvik. The North Slope Borough was home to a significant last chance tourism destination in the village of Kaktovik situated some 300 miles to the east of Utqiagvik. Last chance tourism in Kaktovik accelerated in 2004 when the United States Fish and Wildlife Services issued a grant to assist residents in purchasing boats used for polar bear viewing (Miller, 2019). This led to Kaktovik becoming the “polar bear capital of the United States” while struggling to cope with a massive influx of tourists (Nozari, 2017; Pemberton, 2018; Reid, 2017). The boom in polar bear viewing collapsed in 2021 when the federal government halted the issuing of commercial polar bear viewing permits (DeMarban, 2021; The Secretary of the Interior, 2021). Polar bear viewing in Kaktovik has remained frozen as of the publishing of this paper with little explanation provided to former guides (Akook Arctic Adventures, 2025). Similar to Kaktovik, Utqiagvik is home to a large colony of polar bears that frequent Point Barrow, are spending more time near the shore due to the loss of sea ice, and annually take advantage of the remains of bowhead whale carcasses left by local Iñupiaq hunters. Marketing for the town often promotes features with last chance associations, such as polar bear viewing tours (State of Alaska, 2024). Utqiagvik is both the economic hub of the North Slope Borough and the primary destination of most tourists visiting the region (North Slope Borough, 2014).

The research objective of this study investigates the social dimensions of climate change in the Arctic by examining stakeholder perceptions of the development of tourism and the

motivating factors attracting tourists to the region to interrogate the prevailing narrative that last chance motivations drive tourists to areas with disappearing landscapes or endangered species. Last chance tourism as a phenomenon is well documented but has often been assumed by media and scholars to be a motivation in regions featuring disappearing species or landscapes. Using Utqiagvik, Alaska as a case study our objective was to understand the role of last chance tourism related to how stakeholder experiences and perspectives of Arctic tourism developed in the city. This study addresses significant research gaps including a lack of attention provided to tourist experiences in the Arctic and global issues including climate change adaptation (Lee et al., 2017) and need for further research on the role of last chance tourism in the Arctic (Varnajot & Saarinen, 2021). In addition, this study addresses gaps in the dearth of research investigating the view residents have of tourists themselves (Moreira Gregori et al., 2022).

4.2 Review of literature

4.2.1 Tourism motivations and impacts

The investigation of tourist motivations has a long history in tourism literature predating the last chance tourism phenomenon by several decades (Cohen, 1984; Fodness, 1994). Early tourism literature investigating tourist motivations largely focused on a Push-Pull Model examining psychological forces to explain travel (Dann, 1977, 1981; Gnoth, 1997). Push factors are those motivating a person to leave home, while pull factors are ones that make a destination attractive, and the two are often closely interrelated (Klenosky, 2002; Vareiro & Mendes, 2019). For example, tourists may be pushed to visit a last chance tourism destination by their desire for the prestige of having seen a disappearing species or they may be pulled

there to learn about climate change. Destination image, including aspects of the natural environment subject to climate change, is also interconnected with tourist motivation (Suhud et al., 2021), such as how an equivalence between tourists' motivations and a destination's actual qualities may positively shape image (Beerli & Martín, 2004).

More recent literature has focused on the Escaping-Seeking framework (Huang, 2021; Hvenegaard, 2012). This theory focuses on how tourists either escape challenging environments at home or seek rewarding experiences elsewhere with the former exerting greater influence on tourists in most cases (Dunn Ross & Iso-Ahola, 1991; Mannell & Iso-Ahola, 1987). Escaping-Seeking theory has been empirically tested with scholars arguing for its continued relevance in understanding tourist motivations (Šimková & Holzner, 2014; Wolfe & Hsu, 2004).

A number of less empirically studied models exist including the theory of leisure class, civilizing process theory, bioeconomic theory, and anthropogenic allee effect that respectively approach tourist motivations through status, changes to social standards, consumer demand for rare wildlife, and feedback cycles driving demand for rare species while simultaneously reducing the species' population (Hvenegaard, 2012). However, the most developed alternative is the Travel Career Pattern framework building on the earlier Travel Career Ladder framework to describe differences between more and less experienced travelers (Huang, 2021). The Travel Career Pattern theory distinguishes between more and less experienced travelers arguing that the motivations driving these tourists differ as a result. For example, more experienced travelers are more motivated by host-site involvement while those less traveled may focus on stimulation and recognition (P. L. Pearce & Lee, 2005). Whichever theory is selected, advocates of all agree that tourist motivation directly influences the decision to travel to a

destination (Botha et al., 1999; Kozak, 2002; Kozak et al., 2017) and is critical for developing destination marketing (Prebensen et al., 2013).

Perceptions of tourism impacts is an area of scholarly activity with nearly as long a history in the literature as tourist motivations (Ap, 1992; Belisle & Hoy, 1980; Sheldon et al., 1984). Environmental and social impacts are among those most important to understand for policy development and decision-making processes (Gill, 2014). Tourism is attractive to communities due to its ability to generate revenue and new jobs as a livelihood diversification/substitution strategy. This may prove essential to the survival of Arctic communities as traditional livelihood activities are threatened by global climate change impacts such as sea ice melt and seasonal disruption (Le Teno & Frison, 2021; Maldonado et al., 2014). But tourism is often a double-edged sword with environmental degradation, overwhelmed infrastructures, and loss of culture among the potential negative outcomes (Dodds & Salazar, 2021; Gössling, 2002). Many Arctic communities are poorly prepared or lacking financial resources to cope with major influxes of tourists (Hillmer-Pegram, 2016). This is a particularly pressing issue for indigenous communities in the Arctic where tourism has often been promoted as a panacea for economic challenges (Naylor & Hunt, 2021). Case studies investigating resident perceptions of tourism, while frequently focused on the United States, have often considered tourism in locations of the Lower-48 or Hawai'i but devoted little attention to rural Alaska (Allendorf, 2022; Huh & Vogt, 2008; Sharpley, 2014). Studies of tourism have frequently focused on residents' perceptions without fully accounting for the views of tourists themselves (Moreira Gregori et al., 2022; Salee et al., 2022). Recent scholarship has investigated residents' perceptions of tourist image including tourist behavior, stereotypes, and contexts of high cultural distance (Qiu et al., 2023).

4.2.2 Last chance tourism

Scholars have often adopted the Push-Pull Model, Escaping-Seeking framework, or related concepts such as the theory of substitutability in their consideration of last chance tourism (Hindley & Font, 2018; Lemelin et al., 2012). Some scholars have noted the ‘cognitive dissonance’ that arises in tourist motivations to experience last chance tourism whereby the tourists understand the harm being caused by travel to disappearing locations but still travel to these sites nonetheless (Salim & Ravanel, 2023). Ambassadorship, or the idea that tourists visiting imperiled destinations will return home to promote environmental sustainability, has been promoted by some as a solution to these issues (Abrahams et al., 2022; Denley et al., 2020; Salim et al., 2023). Others question whether tourist motivations for last chance experiences can genuinely translate into ambassadorship or greater environmental awareness (Eijgelaar et al., 2010; Runge et al., 2020). The motivations of tourists engaged in last chance tourism remain under-investigated and additional research is needed (Denley et al., 2020; Lemelin & Whipp, 2019).

While some scholars illustrate awareness and comprehension of tourism impacts among last chance tourists (D’Souza et al., 2023), or an opportunity to develop awareness (Paiva et al., 2023), other studies have focused on the absence of recognition (Lemelin & Whipp, 2019). A particular lack of attention exists in understanding tourist experiences throughout the Arctic region (Lee et al., 2017). It has been suggested that should the worst predictions of climate change come to pass the region will need to consider what Arctic tourism will look like once the last chances to experience disappearing landscapes and species have passed, i.e. the nature of “post-Arctic tourism,” and how this would impact tourist perceptions in coming decades (Varnajot & Saarinen, 2021).

Resident perceptions are of equal importance with areas that have been investigated including perceptions of host-guest relations, environmental and economic impacts, and contrasting values (González-García et al., 2022; Tse & Tung, 2022), such as how tourists and residents place different emphasis on caves and forests in some European national parks (Telbisz et al., 2022). It has been noted that while resident perceptions are well studied, there are significant gaps in the literature including the view residents have of tourists themselves (Moreira Gregori et al., 2022) and how residents view last chance tourism in their communities (González-García et al., 2022; Varnajot & Saarinen, 2021).

4.3 Methods

The qualitative data presented in this paper resulted from unstructured and semi-structured interviews, as well as supplemental archival research. Full anonymity was provided to all interviewees and informed consent was provided prior to interviews. Ethical oversight of this project was provided by San Diego State University through their Institutional Review Board (Protocol #s: HS-2022-0065 & HS-2023-0069).

4.3.1 Study site

Utqiagvik, known as Barrow until 2016 and still called that by many residents, is the political and cultural heart of the Iñupiat in Alaska (Fig. 17). The Iñupiat are the original inhabitants of this region and today comprise 54 percent of Utqiagvik's population (U.S. Census Bureau, 2020). Unlike many Indigenous peoples of the Arctic, the Iñupiat have significant control over oil wealth and whaling remains a central aspect of their culture (Bodenhorn, 1990; Sakakibara, 2020). A variety of marine and terrestrial animals that appeal

to tourists are found in the North Slope region including caribou, walrus, and polar bears (Wildlife Management, 2024). In addition to acting as a political hub, Utqiagvik is a central gathering point for Iñupiat cultural events and the preservation of Iñupiat culture through institutions like the Iñupiat Heritage Center (North Slope Borough, 2014). Many Iñupiat remain deeply committed to practicing traditional subsistence lifestyles and honoring the Iñupiat Values that bind the community together (URS Corporation, 2005). The annual cycle of preparing for, hunting, and celebrating the bowhead whale harvest remains central to life in Utqiagvik (L. B. Miller, 2019). Alongside Deadhorse, Utqiagvik is the only North Slope community to receive commercial air flights greatly increasing its accessibility to visiting tourists. However, tourism is an underdeveloped part of the region's economy with approx. 3 percent of Alaska's tourists visiting the Arctic north (Destination Analysts, 2023).

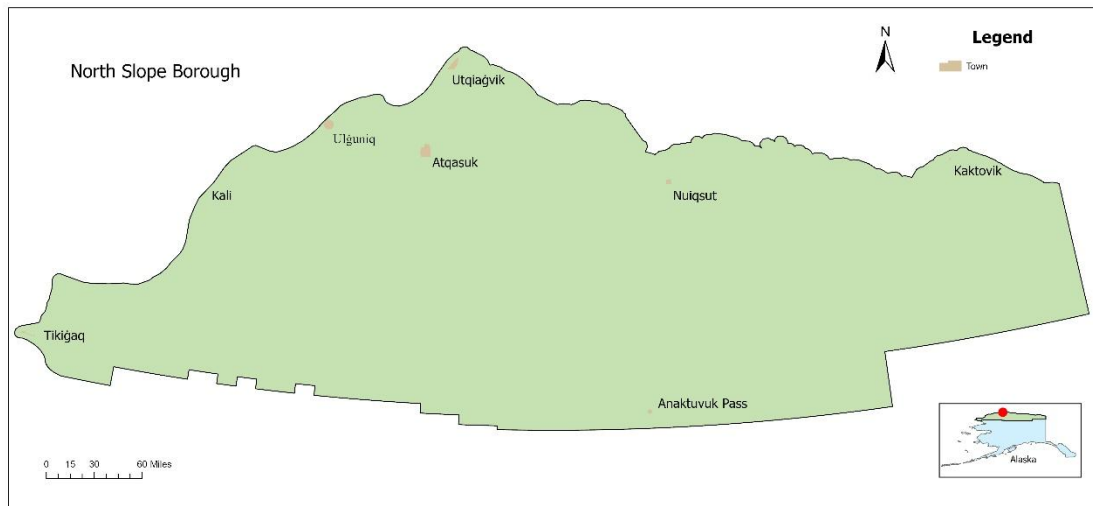


Fig. 17 | Site map of the North Slope Borough, Alaska, USA.

4.3.2 Unstructured interviews

Unstructured interviews with 9 tourists and 3 residents were completed in Utqiagvik, Alaska during the summer of 2022 (see supplementary data for interviewee demographics).

An unstructured interview offers an exploratory approach to questions with the openness to pursue discussion into unplanned topics (Merriam & Tisdell, 2009). Unstructured interviews may precede more structured approaches to provide a foundation for developing interview guides. Tourists and residents were selected through convenience sampling due to knowledge of Utqiagvik or proximity to tourist sites. This data was collected as part of a pilot study in Utqiagvik to establish a new research site and investigate the potential role of last chance tourism. Convenience sampling is a common approach when establishing a new research site due to the limitations of funding and time, as well as the lack of preestablished relationships in the area (Merriam & Tisdell, 2009; Teeroovengadum & Nunkoo, 2018).

As part of the pilot study, tourists were asked three questions: (1) What drew you to Utqiagvik for tourism? What activities have you participated in?; (2) Was climate change a factor when deciding to visit Utqiagvik? If so, how?; and (3) Was experiencing the local culture and meeting local people a factor when deciding to visit Utqiagvik? If so, how? Residents were asked the following questions: (1) Has tourism in Utqiagvik changed over the last ten years? If so, then how?; (2) Have these changes in the tourism sector impacted daily life in Utqiagvik? If so, then how?; (3) Has tourism brought new economic opportunities for women to Utqiagvik? If so, what?; (4) Have changes in the tourism sector impacted your sense of safety and privacy as a resident, and if so, how?; (5) What impacts of climate change on the North Slope have you noticed, if any?; (6) Has climate change impacted daily life in Utqiagvik? If so, how?; and (7) Is climate change impacting Utqiagvik's tourism activities? If so, then how?

4.3.3 Semi-structured interviews

Qualitative data collected from the pilot study was used to design interview guides for semi-structured interviews. An interview guide is used during interviews to produce “reliable, comparable qualitative data” (Bernard, 2018). Semi-structured interviews using the resulting guides were completed with 9 tourists and 26 residents during the spring of 2023, and with 1 additional resident interviewed during the summer of 2024, in Utqiagvik (see supplementary data for full interview guides). The below results focus on the collected data related to last chance tourism and tourist motivations. Tourists continued to be selected through convenience sampling with focus on proximity to both tourist sites and birding hotspots. The latter were identified using a choropleth map of the area generated on the popular bird watching website eBird. Residents were selected using snowball sampling taking contacts established during previous research as the starting point. Both convenience and snowball sampling techniques are useful when dealing with large populations where random sampling is not possible due to study limitations (Etikan et al., 2016).

4.3.4 Qualitative data analysis

All interview data was organized and analyzed using NVivo qualitative analysis software. A common technique used to analyze qualitative data is content analysis (Hay & Cope, 2021; Nunkoo, 2018). Qualitative content analysis involves an initial content analysis of text-based data that codes the text for themes. This is followed by a second, more exhaustive round of coding to reveal previously hidden themes (Merriam & Tisdell, 2009; Zavattaro, 2019).

Positionality emphasizes not only how a researcher’s background (e.g., gender, race, age, etc.) will impact their perceptions and interactions while conducting research, but also the need

to understand a researcher's motivations in launching a project (L. B. Johnson, 2015; Reich, 2021). This may also be understood in terms of whether a researcher is an 'insider' or an 'outsider' in relation to the participants (Shaw et al., 2020). Understanding positionality is particularly important when studies include Indigenous participants, as even basic concepts such as dialog norms may differ between researcher and participants (Buzinde et al., 2020). The authors sought to identify and better understand their positionality through development of a social identity map (Jacobson & Mustafa, 2019). Two of our scholars identify as White (Grafton & Quandt) and one as Asian American (Chu), positioning us as 'outsiders' in relation to Indigenous stakeholders and the majority population of our study site. Additionally, none of the researchers are residents of the study area. We acknowledge that our ethnic identities and 'outsider' status may have shaped the responses of stakeholders.

4.3.5 Archival research

Archival data may provide a temporal perspective as a complement to the contemporary data generated through interviews. For example, archival work and historical theory may serve a 'political purpose' in generating questions about our present (Kearns, 2007). Such a temporal lens is salient when considering pressing political issues such as climate change and its impact on society. In addition, it has been noted that archival research is an "under-utilized" method in the tourism literature (Nunkoo, 2018).

Archival work was completed at Tuzzy Consortium Library in Utqiagvik during the summer of 2022 and spring of 2023. Key documents housed at the library included the *North Slope Borough Visitor Profile* (1996), *North Slope Borough Comprehensive Plan* (2005), and *Soaring to the future: Barrow comprehensive plan 2015-2035* (2014). Some of these

documents are rare and unavailable in digital form. Extensive notes were taken from these documents, as well as photographs of important figures and graphics. This data provided important temporal context to the data collected through interviews.

4.4 Results

In this study we interviewed 18 tourists and 30 residents in Utqiagvik, Alaska between 2022 and 2024. Tourists hailed from a wide range of U.S. states and several European nations. Residents were demographically diverse with all major ethnic identities residing in the town represented (Fig. 18). Utilizing archival research, a broader understanding of historic tourist motivations in the North Slope Borough was considered to add temporal perspective into tourist motivations and experiences (Sem & Goff, 1996). Only a handful of other studies have considered tourism in the region with those mostly focused on economic development (Hillmer-Pegram, 2016; Sisneros-Kidd et al., 2019). Our objective was to investigate the prevailing narrative that last chance motivations drive tourists to areas with threatened species and vanishing landscapes. Clearly an important motivator in similar rural locations such as Kaktovik (Alaska) and parts of Canada (Groulx et al., 2016; L. B. Miller, 2019), our study reveals the need for a more nuanced understanding of last chance tourism. The results establish several key findings that challenge prevailing narratives of Arctic tourism and demonstrate the need for future research.

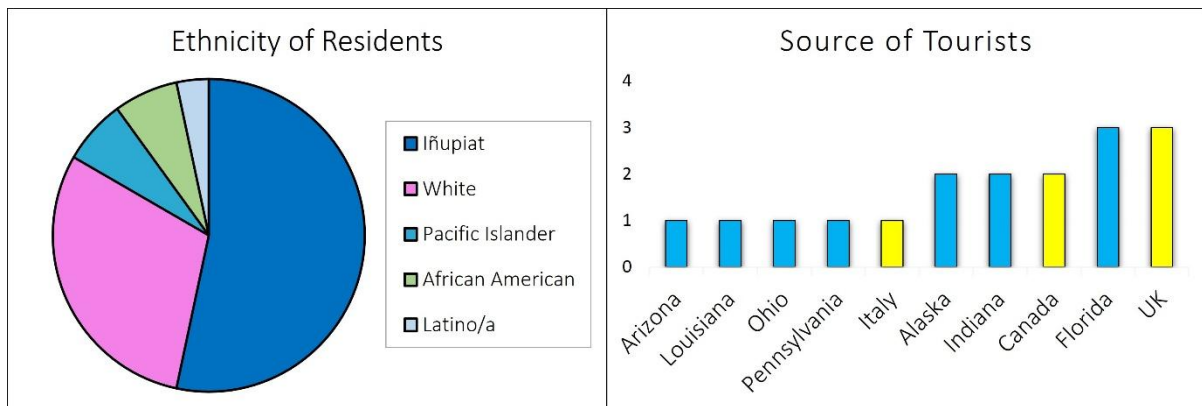


Fig. 18 | Ethnicity of residents and source of tourists visiting Utqiagvik, Alaska.

4.4.1 Resident perceptions of tourism impacts

Of the 30 residents we interviewed, 67 percent viewed tourism as having positive impacts on Utqiagvik. Reported positive impacts focused heavily on economic benefits for the community such as selling arts and crafts to tourists, guiding and other employment opportunities in tourism, and keeping local hotels in business. A significant number of Iñupiaq residents (as well as one Latina resident) described the positive role tourism played in improving Utqiagvik’s place image. As one Iñupiaq resident (R11) said, “it kind of exposes the people to like the real Arctic, not like the TV Arctic.”

Of the 16 Iñupiaq residents we spoke with, 75 percent viewed tourism as having positive impacts. This was significantly higher than other ethnic backgrounds that were more evenly divided on the topic. Contributions to the local economy, including of Indigenous corporations such as the Arctic Slope Regional Corporation (ASRC), was a major reason for Iñupiaq positivity. As one Iñupiaq resident (R15) stated, “the ASRC owns Top of the World [Hotel], you know, it helps... with all that money coming in... keeps everything going around here.” Another Iñupiaq resident (R28) added, “It hasn't really impacted me, um, but... it's impacted local corporations.”

Not all residents had positive impressions of tourism in Utqiagvik. A number of residents described culture clashes with tourists who lacked understanding of traditional ways of life or behaved in a disrespectful fashion. Sharing a story they had heard from a friend, one resident (R11) described how a tourist had recently thrown a tantrum when their tour guide failed to find a polar bear. On a second outing, the guide successfully located a bear only to have the tourist behave as if “he was crossing it off a list” with no apparent enjoyment from the experience. This incident was upsetting to both the guide and interviewee. Safety and privacy concerns were a significant issue for several interviewees. One resident (R1) described how, “two [tourists] came right into my yard and were looking in the window of my house,” echoing other reports of privacy violations in Utqiagvik (Hillmer-Pegram, 2016). One author (Grafton) observed a tourist taking photos of Iñupiaq children playing on the street in front of their home.

While the North Slope Borough administrative unit has traditionally adopted a cautious approach to tourism, noting the threat of cultural conflict and safety concerns (North Slope Borough, 2019; URS Corporation, 2005), the municipality of Utqiagvik has embraced tourism development as a goal for economic growth (North Slope Borough, 2014). Resident perceptions of tourism were more congruent with the former position. Of the 15 residents who shared a position on tourism development, 67 percent either wanted tourism to remain at current levels or decrease in the future. Those in favor of less tourism noted culture conflicts with tourists. As one Iñupiaq elder (R17) said, “we’re not a zoo... if you were home and you had different people coming around your neighborhood just to look at your house and see how you live, how would you feel?” All 5 of the residents supporting tourism growth were of Iñupiaq ancestry.

We asked residents about climate change impacts on local tourism as part of the interview guide resulting from earlier unstructured interviews. Of the 23 residents asked about this, 48 percent reported negative effects on the local tourism industry (Fig. 19). Most notably, these residents cited decreasing accessibility to Utqiagvik as a result of canceled flights from increased fog. One resident (R17) described the situation, “We get fog a lot... We’ve got oceans on both sides.” Residents attributed the extra foggy days to climate change, describing how more open water resulting from less sea ice increased moisture in the air. An additional 35 percent of residents perceived no impacts on tourism from climate change. One resident (R3) observed how climate change was unlikely to change Utqiagvik’s geographic position, noting that, “We’re still going to be at the very tip of the U.S. unless we go back to Russia, I guess.” Interestingly, of the four interviewees who viewed climate change having a positive role on tourism, all were of Iñupiaq heritage. These residents believed less sea ice would allow for additional cruise ships to visit or that new species of birds arriving in the region would appeal to birders.

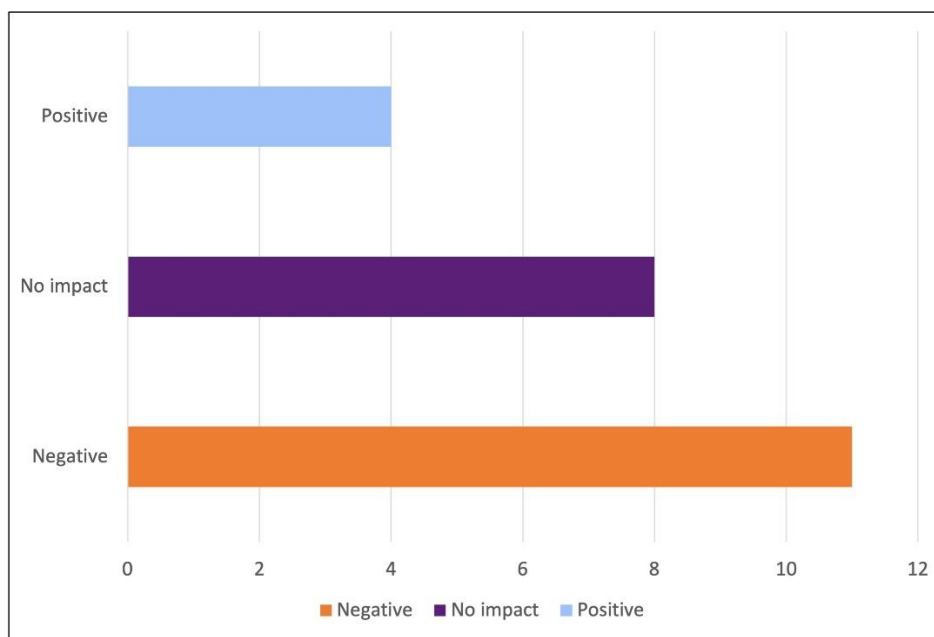


Fig. 19 | Resident perceptions of climate change impacts on tourism in Utqiagvik.

4.4.2 Two stories of tourist motivations

Assumptions made by residents about tourist motivations for travel to Utqiagvik significantly differed from the tourists' professed motivations. Of the 21 residents who offered reasons for tourists visiting, more than half believed either birding (bird watching) or visiting the northernmost point in the United States were the primary motivators (Fig. 20). This was followed by viewing wildlife, experiencing Iñupiaq culture, and viewing the northern lights. As one resident (R28) said, "You know, they all come up to see the wildlife, birds, animals." Residents frequently distinguished between birding and viewing wildlife, which they discussed as distinct activities. Four residents interviewed suggested last-chance tourism as a motivation, such as the resident (R23) who mused that, "probably there's a lot of number of people worried about excessive change due to climate... [who] would want to come and see it before it all changes before your eyes, you know?"

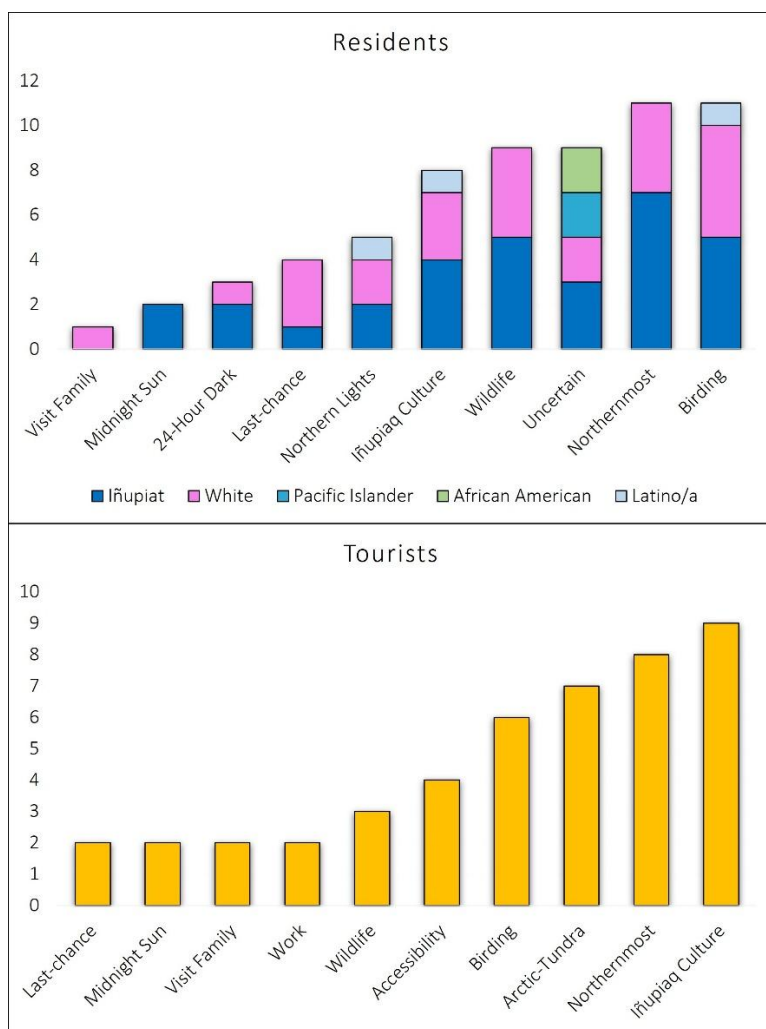


Fig. 20 | Resident and tourist perceptions of motivations for visiting Utqiagvik. Resident columns display the ethnicity of respondents.

On the other hand, of the 18 tourists we spoke with, experiencing Iñupiaq culture was the primary reason given for travel to the community (Fig. 20). As one tourist (T9) noted, “I was very interested in the whole community, how they lived, and the people.” Several tourists added that the Iñupiat Heritage Center in town had been an attraction in this regard. Iñupiaq culture was followed by visiting the northernmost point in the United States, experiencing the Arctic, and birding.

Utqiagvik's accessibility was another significant factor for tourists that failed to garner mention from residents. In a region of Alaska with no road access, Utqiagvik is one of just two towns with commercial air travel available. Being the hub of such an isolated region of the United States had undoubtedly contributed to Utqiagvik's exotic place image in the minds of tourists we spoke with. As one tourist (T8) described their decision-making process: "Staying somewhere domestic, even, but at the same time you feel like you're out of the country. I mean when you almost pretty, practically are."

4.4.3 What last chance tourism?

We found that climate change and last chance viewing opportunities played little role in motivating tourists visiting Utqiagvik. Of the 18 tourists we spoke with, only 11 percent reported climate change influencing their decisions to visit the region. Interviewee T17 was explicit about his last chance aims, noting "that you kind of feel like you have to get up here while you still can, before things change too much... change what makes this area so special for wildlife." Another (T16) added their desire "to see with our eyes . . . the differences" resulting from climate change.

Yet, last chance motivations were in a clear minority. Many tourists stated that climate change played no role in their decision-making process when choosing Utqiagvik as their destination. As one tourist (T4) observed, "Not saying that we don't think it is a factor, but I don't think it was a factor for our decision to come here." Another (T13) stated, "No... it's a personal thing. I've been interested in polar regions my whole life." Others appeared surprised by the question. As one tourist (T9) described climate change when planning for her family's trip, "yeah, it wasn't a factor. I don't remember coming across it really, like in research."

Importantly, this scarcity of last chance motivations was not the result of deficient awareness of climate change among tourists visiting the region. Tourists we interviewed were unanimous in expressing strong understanding of climate change issues regardless of age or home location. One younger tourist (T17) recalled spending “a lot of time doing stuff in classes related to that,” a sentiment echoed by several other interviewees. A senior tourist (T13) had a similar starting point describing his lifelong journey studying climate change and ecological threats beginning with a book by the biologist Paul R. Ehrlich in the 1970s. He had remained “painfully aware” of climate change since that introduction and continued to “feel trapped” whenever contributing to greenhouse gas emissions in a significant way. Other tourists described “a lot about it on the news” (T10) or gaining experiential evidence of climate change, such as viewing retreating glaciers elsewhere in Alaska (T16). One tourist (T15) described the opposite effect from last chance tourism: “It gave me hesitations about whether I should fly here, yes.” Our interviewees were not shy about sharing their thoughts on climate change and were clear that it had not positively influenced their travel choices.

4.5 Discussion

For more than a decade there has been a prevailing narrative in scholarly literature that last chance tourism is a key mover of tourists globally (Dawson et al., 2011; Lemelin et al., 2012; L. B. Miller, 2019). This narrative has extended into the media both through destination promotion and journalistic reporting (Ibekwe, 2024; Johnston, 2024; Rellihan, 2024). If this phenomenon is in fact ubiquitous, it is critical to understand given the implied ethical ramifications and potentially destructive act of engaging in last chance tourism (Hindley & Font, 2018; Markowitz & Shariff, 2012). Previous studies have focused on globally recognized

destinations with little consideration given to rural areas of lesser media attention (Kucukergin & Gürlek, 2020). Our results challenge this narrative, finding that tourists visiting Utqiagvik did not express last chance motivations. Instead, a wide range of other experiences and activities motivated people to travel to the region. It should be noted that other researchers have found a willingness among tourists to openly confirm last chance reasons for travel, (Salim & Ravanel, 2023; Stewart et al., 2017) leading us to conclude that this was not the result of hidden motivations due to an unwillingness to openly admit to last chance tourism.

Utqiagvik is a classic example of a peripheral destination with an historically marginalized Indigenous population, an economy centered on resource extraction, and low annual tourism (Cheer et al., 2022; Cooper, 2023). The broader North Slope region has long been characterized by a core-periphery relationship with southern Alaska, notably evident during the tundra rebellion (Finegan, 2015; Gladden, 2001). Many marginalized, rural tourism destinations have these peripheral characteristics in common (Hall, 2015). The results of this paper are therefore significant in understanding other peripheral destinations around the planet.

It is possible that the results were shaped by the demographics of tourists interviewed. Previous literature found that tourists motivated by last chance reasons were often international visitors (Salim et al., 2023). In keeping with the literature, 1 of the two tourists who expressed last chance motivations for visiting Utqiagvik had traveled there from Italy. However, of the 18 tourists we spoke with, one-third were international visitors. If last chance motivations were significant for Utqiagvik, it begs the question of why none of the other international visitors cited this as a reason for their travel. As described above, tourists were unanimous in expressing high awareness of climate change as a global issue but did not link this line of thought to their travel destination. The ethnic background of residents may have played a more significant role

in shaping perceptions with Iñupiaq interviewees being unique in their positive outlook regarding climate change impacts on local tourism, support for tourism growth, and overall view of tourism in the community. These sentiments are consistent with the Iñupiat Values found prominently displayed around Utqiagvik that include compassion, respect for nature, humility, and avoidance of conflict among others (North Slope Borough, 2019).

Indigenous communities of the Arctic, frequently unacknowledged, are often negatively stereotyped rather than recognized for their appeal to tourists (Müller & Viken, 2017). Reflecting these attitudes, archival research revealed that the only prior study of tourist motivations in the North Slope Borough did not ask tourists about Iñupiaq culture and community in the region (Sem & Goff, 1996). This makes it impossible to know for how long Iñupiaq culture has played this role in local tourism. Several studies have noted how tourists perceived the Arctic as isolated “wilderness” resulting in the commodification of local cultures (Holmes et al., 2016; Müller, 2021). Our study suggests a more nuanced understanding among tourists visiting Utqiagvik. With heightened exposure of Inuit culture in recent popular media such as *The Terror* (2018) and *True Detective: Night Country* (2024) it is likely this will remain a primary driver to the region in the near future (Ava, 2024).

Little attention has been paid to how residents perceive tourists visiting their home with most scholarship focused on the economic and environmental impacts of tourism (Moreira Gregori et al., 2022). The existing research exploring how residents view tourists themselves has looked into perceptions of tourists’ economic and environmental impacts, contrasting values, and host-guest relations (González-García et al., 2022; Telbisz et al., 2022; Tse & Tung, 2022) but not tourists’ motivations. Our study did not set out to fill this research gap, but more than two-thirds of our interviewees offered their opinions on tourists’ motivations for visiting

Utqiagvik unsolicited. Comparing residents' perceptions of motivations to tourists' own professed reasons for travel was revealing of how these stakeholder groups may misunderstand each other. Destination managers and policy makers should take note to ensure their beliefs about tourist motivations are not based upon incorrect assumptions. Given the importance of residents' attitudes for sustainable tourism development (Nunkoo et al., 2013), future research is merited.

Experiencing the Arctic was a surprising omission from resident perceptions considering Utqiagvik is the hub of the Arctic region in Alaska and well north of the Arctic Circle. Recent studies have found ongoing "Arctification" taking place in regions such as the European North as the term "Arctic" encroaches on areas previously unaffiliated with the region (Marjavaara et al., 2022). Residents we spoke with did not make strong associations between Utqiagvik and the Arctic. However, tourists often referenced these links. One tourist (T15) noted how they had, "always wanted to come to the Arctic," with another (T14) describing their desire "to see the high Arctic."

The community of Utqiagvik appeared divided as to whether tourism was a net positive or negative. This is a common dynamic within Indigenous communities where tourism is an established or developing force (Viken & Müller, 2017; West, 2008). Interestingly, even though a majority of residents viewed tourism positively, only a minority wanted to see tourism growth in the future. This raises concern as to the disconnect between residents and local leaders advocating for more tourism in the city government.

4.6 Conclusion

Last chance tourism is an oft discussed motivation for tourists visiting locations home to disappearing landscapes or species (Denley et al., 2020; Paiva et al., 2023; Salim et al., 2023), but this study has challenged the prevailing narrative by showing how last chance tourism was not a significant motivator for tourists in Utqiagvik. Utqiagvik is a peripheral destination sharing traits with many rural tourist towns found in the circum-Arctic region (Cheer et al., 2022) including the presence of threatened marine mammals, thawing permafrost, and diminishing sea ice. Yet, this study found little evidence of last chance tourism motivating tourists to visit Utqiagvik. Of far greater importance for most tourists was experiencing Iñupiaq culture and visiting the northernmost point in the United States.

This study uncovered a disconnect between what residents thought motivated tourists to visit Utqiagvik and the professed motivations tourists' themselves provided. This indicates a potentially significant misunderstanding in the community about the drivers of tourism with implications for tourism growth and the shaping of destination image. Planners and policy makers in Utqiagvik and the North Slope Borough should consider three key recommendations: (1) how the destination image of Utqiagvik and the North Slope may focus greater attention on Iñupiaq culture and the existing opportunities for tourists to respectfully interact and learn from the community; (2) that a majority of residents may not want tourism growth in the community and that plans for tourism development may prove counterproductive; and (3) in light of this, whether developing additional ways for tourists to interact with Iñupiaq culture is in the best interests of the community. Future case studies in other parts of the Arctic are called for to establish the prevalence of Indigenous culture as a motivator for tourists visiting the region.

As with any academic undertaking, this study faced limitations. Convenience sampling enabled the authors to interview a significant number of residents and tourists in a relatively short time frame. However, the resulting data may not be representative of the broader populations of those living in and visiting Utqiagvik (D'Souza et al., 2023). This is particularly true in the case of tourists since all interviews were carried out during warm months, often under the Midnight Sun (24-hours of daylight), when a majority of tourists visit the town. As a result, absent from our study are those tourists seeking out the experience of 24-hours of darkness or traveling to see the Northern Lights.

There is no question that last chance tourism is motivating people to visit Arctic destinations, but the results of this study call for a more nuanced approach to understanding tourist motivations in such a complex region facing immense environmental change. As those most affected by tourism, it is critical to understand how residents perceive the motivations of the tourists visiting their home. As environmental change accelerates in the Arctic, future studies investigating these topics will be critical to understanding tourism in the northernmost places of the planet.

Chapter 5. Conclusions

5.1 Summary of results

This dissertation investigated perceptions of Indigenous and local peoples of the Arctic to understand the impacts of global climate change on the region. The following objectives structured this research: (1) Understanding how stakeholders perceived environmental change and the impacts on Indigenous life ways and intangible cultural heritage: The first chapter utilized qualitative interviews to reveal core themes of Inupiaq identity including cultural pride, hunting and fishing, traditional foods, whaling, and heritage. These themes of self-identity were connected to environmental change by permafrost degradation, loss of ice, and severe weather. Results found that Indigenous and local people were focused on their adaptability and resilience in contrast with narratives of victimization. (2) Exploring how films depicted Arctic peoples and how women were situated on an axis of difference from men: Archival research was used in the second chapter to develop an historical GIS database that raised questions then answered through vignettes revealing the abjection of women and Indigenous peoples. By adopting a novel feminist framework based on abjection theory, the study shed light on the false histories of the archive that opened new paths to serious engagements with Arctic cultures. (3) Understanding how stakeholder perspectives of and motivations for Arctic tourism have developed: The third chapter interrogated the narrative of last chance tourism through qualitative content analysis of interviews to uncover tourist motivations and residents' perceptions of tourists themselves. Results found that last chance tourism played little role in motivating tourists and that residents' perceptions of visitor motivations were notably different from tourists' own professed motivations.

5.2 Key recommendations

The findings of this dissertation reinforce the pressing need for more nuanced depictions of the Arctic and improved policy making in the region to address global climate change impacts. Key recommendations include: (1) Documentary and amateur film frequently subjects women and Indigenous peoples of the Arctic to abjection and false histories, and outsiders and policy makers should develop more serious engagements with the region. (2) Indigenous and local knowledge of environmental change should be prioritized in studies of vulnerability and community resilience. (3) Indigenous and local residents of the Arctic should not be seen as victims and often perceive positive senses of place in their communities. (4) Many residents in Arctic destinations may not want increased tourism development in their communities and policy makers should consider this when formulating comprehensive plans. (5) Planners and destination managers should focus greater attention on marketing Indigenous cultures rather than last chance tourism, if this is in the best interest of the community.

5.3 Avenues for future research

Many fruitful investigations may further develop the questions raised by this dissertation including: (1) Additional qualitative case studies are called for to develop a holistic understanding of environmental change in the Arctic. (2) Further studies are needed to establish how widespread Indigenous cultural heritage acts as a motivator for Arctic tourism. (3) More qualitative studies utilizing interviews are needed that reconsider the role of last chance tourism in the Arctic.

References

- 100state. (n.d.). Mark Weller. *100state*. <https://100state.com/artists/mark-weller/>
- Abrahams, Z., Hoogendoorn, G., & Fitchett, J. M. (2022). Glacier tourism and tourist reviews: An experiential engagement with the concept of “Last Chance Tourism.” *Scandinavian Journal of Hospitality and Tourism*, 22(1), 1–14.
<https://doi.org/10.1080/15022250.2021.1974545>
- Abram, S., & Lund, K. A. (2018). *Green Ice: Tourism Ecologies in the European High North*. Palgrave MacMillan.
- Aitken, S. C., & Dixon, D. P. (2006). Imagining Geographies of Film. *Erdkunde*, 60(4), 326–336.
- Aitken, S. C., & Zonn, L. E. (1994). *Place, Power, Situation, and Spectacle: A Geography of Film*. Rowman & Littlefield.
- Akook Arctic Adventures. (2025). *AKOOK ARCTIC ADVENTURES*. AKOOK ARCTIC ADVENTURES. <http://www.akookarcticadventures.com>
- Allen, M. D. (2020). Climate change in Alaska: Social workers’ attitudes, beliefs, and experiences. *International Journal of Social Welfare*, 29(4), 310–320.
<https://doi.org/10.1111/ijsw.12443>
- Allendorf, T. D. (2022). A global summary of local residents’ perceptions of benefits and problems of protected areas. *Biodiversity and Conservation*, 31(2), 379–396.
<https://doi.org/10.1007/s10531-022-02359-z>
- Ap, J. (1992). Residents’ perceptions on tourism impacts. *Annals of Tourism Research*, 19(4), 665–690. [https://doi.org/10.1016/0160-7383\(92\)90060-3](https://doi.org/10.1016/0160-7383(92)90060-3)

- Apollo, M., Jakubiak, M., Nistor, S., Lewińska, P., Krawczyk, A., Borowski, L., Specht, M., Krzykowska-Piotrowska, K., Marchel, Ł., Pęska-Siwik, A., Kardoš, M., & Maciuk, K. (2023). Geodata in science—A review of selected scientific fields. *Acta Sci. Pol. Formatio Circumiectus*, 22(2), 17–40. <https://doi.org/10.15576/ASP.FC/2023.22.2.02>
- Ava, W. (2024, January 22). HBO’s “True Detective” collaborates with Iñupiaq for Alaska accuracy. *Alaska Public Media*. <https://alaskapublic.org/2024/01/22/hbos-true-detective-collaborates-with-inupiaq-for-alaska-accuracy/>
- Baishya, A. R. (2023). “Listening to the Multiple and Multispecies Voices of the Crisis”: Climate Change in Two Cetacean Fictions by Vandana Singh. *South Asian Review*, 44(1), 37–49. <https://doi.org/10.1080/02759527.2022.2156166>
- Baker, A. R. H. (2003). *Geography and History: Bridging the Divide*. Cambridge University Press.
- Bazzini, D. G., McIntosh, W. D., Smith, S. M., Cook, S., & Harris, C. (1997). The aging woman in popular film: Underrepresented, unattractive, unfriendly, and unintelligent. *Sex Roles*, 36(7), 531–543. <https://doi.org/10.1007/BF02766689>
- Beerli, A., & Martín, J. D. (2004). Tourists’ characteristics and the perceived image of tourist destinations: A quantitative analysis—a case study of Lanzarote, Spain. *Tourism Management*, 25(5), 623–636. <https://doi.org/10.1016/j.tourman.2003.06.004>
- Belisle, F. J., & Hoy, D. R. (1980). The perceived impact of tourism by residents a case study in Santa Marta, Colombia. *Annals of Tourism Research, Tourism and Development Anthropological Perspectives*, 7(1), 83–101. [https://doi.org/10.1016/S0160-7383\(80\)80008-9](https://doi.org/10.1016/S0160-7383(80)80008-9)

- Bennett, M., & Dodds, K. (2025). *Unfrozen: The Fight for the Future of the Arctic*. Yale University Press.
- Bercht, A. L. (2021). How qualitative approaches matter in climate and ocean change research: Uncovering contradictions about climate concern. *Global Environmental Change*, 70, 102326. <https://doi.org/10.1016/j.gloenvcha.2021.102326>
- Bernard, H. R. (2018). *Research Methods in Anthropology: Qualitative and Quantitative Approaches* (6th ed.). Rowman & Littlefield.
- Bodenhorn, B. (1990). “I’m Not the Great Hunter, My Wife Is”: Iñupiat and anthropological models of gender. *Études/Inuit/Studies*, 14(1/2), 55–74.
- Born, D. (2019). Bearing Witness? Polar Bears as Icons for Climate Change Communication in National Geographic. *Environmental Communication*, 13(5), 649–663. <https://doi.org/10.1080/17524032.2018.1435557>
- Botha, C., Crompton, J. L., & Kim, S.-S. (1999). Developing a Revised Competitive Position for Sun/Lost City, South Africa. *Journal of Travel Research*, 37(4), 341–352. <https://doi.org/10.1177/004728759903700404>
- Braidotti, R. (2022). *Posthuman Feminism*. Polity Press.
- Broto, V. C., Burningham, K., Carter, C., & Elghali, L. (2010). Stigma and Attachment: Performance of Identity in an Environmentally Degraded Place. *Society & Natural Resources*, 23(10), 952–968. <https://doi.org/10.1080/08941920802705776>
- Brower Jr., H., & Patkotak, J. (2022, March 4). Let Alaska Sell American Energy to the World. *The Wall Street Journal*.
- Buckingham, S. L., & Hutchinson, J. R. (2024). “It’s like having strong roots. We’re firmly planted”: Cultural identity development among Alaska Native University students.

- Transcultural Psychiatry*, 61(3), 385–398.
<https://doi.org/10.1177/13634615221122524>
- Bunce, A., Ford, J., Harper, S., Edge, V., & IHACC Research Team. (2016). Vulnerability and adaptive capacity of Inuit women to climate change: A case study from Iqaluit, Nunavut. *Natural Hazards*, 83(3), 1419–1441. <https://doi.org/10.1007/s11069-016-2398-6>
- Büscher, B., & Fletcher, R. (2017). Destructive creation: Capital accumulation and the structural violence of tourism. *Journal of Sustainable Tourism*, 25(5), 651–667.
<https://doi.org/10.1080/09669582.2016.1159214>
- Buzinde, C. N., Manuel-Navarrete, D., & Swanson, T. (2020). Co-producing sustainable solutions in indigenous communities through scientific tourism. *Journal of Sustainable Tourism*, 28(9), 1255–1271.
<https://doi.org/10.1080/09669582.2020.1732993>
- Cabana, D., Rölfer, L., Evadzi, P., & Celliers, L. (2023). Enabling Climate Change Adaptation in Coastal Systems: A Systematic Literature Review. *Earth's Future*, 11(8), e2023EF003713. <https://doi.org/10.1029/2023EF003713>
- Carey, M., Jackson, M., Antonello, A., & Rushing, J. (2016). Glaciers, gender, and science. *Progress in Human Geography*, 40(6), 770–793.
<https://doi.org/10.1177/0309132515623368>
- Carmen, E., Fazey, I., Ross, H., Bedinger, M., Smith, F. M., Prager, K., McClymont, K., & Morrison, D. (2022). Building community resilience in a context of climate change: The role of social capital. *Ambio*, 51(6), 1371–1387. <https://doi.org/10.1007/s13280-021-01678-9>

- Castro, D. (2023). Beyond the Giralda: Residents' interpretations of the Seville portrayed in fictional movies and TV series. *European Journal of Cultural Studies*, 26(4), 510–527. <https://doi.org/10.1177/13675494221112967>
- Chandler, M. J., & Lalonde, C. E. (2008). Cultural Continuity as a Protective Factor against Suicide in First Nations Youth. *Horizons --A Special Issue on Aboriginal Youth, Hope or Heartbreak: Aboriginal Youth and Canada's Future*, 10(1), 68–72.
- Chanter, T. (2008). *The Picture of Abjection: Film, Fetish, and the Nature of Difference*. Indiana University Press.
- Cheer, J. M., Mostafanezhad, M., & Lew, A. A. (2022). Cultural ecosystem services and placemaking in peripheral areas: A tourism geographies agenda. *Tourism Geographies*, 24(4–5), 495–500. <https://doi.org/10.1080/14616688.2022.2118826>
- Cheetham, M. A. (2024). Monumental Ephemera: British Sculpture in the Arctic, Icebergs in London, an Inuit Map. *Art History*, 47(2), 372–397. <https://doi.org/https://doi.org/10.1093/arthis/ulae019>
- Clairbaux, M., Rönkä, M., Anker-Nilssen, T., Artukhin, Y., Danielsen, J., Gavrilov, M., Gilchrist, G., Hansen, E. S., Hedd, A., Kaler, R., Kuletz, K., Olsen, B., Mallory, M. L., Merkel, F. R., Strøm, H., Fort, J., & Grémillet, D. (2024). An ecologically sound and participatory monitoring network for pan-Arctic seabirds. *Conservation Biology*, 38, e14287. <https://doi.org/10.1111/cobi.14287>
- Cohen, E. (1984). The Sociology of Tourism: Approaches, Issues, and Findings. *Annual Review of Sociology*, 10, 373–392.
- Condon, R. G., & Stern, P. R. (1993). Gender-Role Preference, Gender Identity, and Gender Socialization among Contemporary Inuit Youth. *Ethos*, 21(4), 384–416.

- Conley, T. (2007). *Cartographic Cinema* (1st edition). Univ Of Minnesota Press.
- Cooper, E. (2023). Making sense of sustainable tourism on the periphery: Perspectives from Greenland. *Tourism Geographies*. (world).
<https://www.tandfonline.com/doi/abs/10.1080/14616688.2022.2152955>
- Cope, M. (Ed.). (2021). Organizing, Coding, and Analyzing Qualitative Data. In *Qualitative Research Methods in Human Geography* (5th ed., pp. 359–368). Oxford University Press. <https://global.oup.com/academic/product/qualitative-research-methods-in-human-geography-9780199034215?cc=us&lang=en>
- Cresswell, T. (2013). *Geographic Thought: A Critical Introduction*. Wiley-Blackwell.
<https://www.wiley.com/en-us/Geographic+Thought%3A+A+Critical+Introduction-p-9781405169400>
- Cronin, J. (2019). The Cuyahoga fire at fifty: A false history obscures the real water crisis that never ceased. *Journal of Environmental Studies and Sciences*, 9(3), 340–351.
<https://doi.org/10.1007/s13412-019-00550-3>
- Cunsolo Willox, A., Harper, S. L., Ford, J. D., Landman, K., Houle, K., & Edge, V. L. (2012). “From this place and of this place:” Climate change, sense of place, and health in Nunatsiavut, Canada. *Social Science & Medicine*, 75(3), 538–547.
<https://doi.org/10.1016/j.socscimed.2012.03.043>
- Cunsolo Willox, A., Stephenson, E., Allen, J., Bourque, F., Drossos, A., Elgarøy, S., Kral, M. J., Mauro, I., Moses, J., Pearce, T., MacDonald, J. P., & Wexler, L. (2014). Examining relationships between climate change and mental health in the Circumpolar North. *Regional Environmental Change*, 15(1), 169–182. <https://doi.org/10.1007/s10113-014-0630-z>

- Cuomo, C. J., Eisner, W., & Hinkel, K. (2008). *Environmental Change, Indigenous Knowledge, and Subsistence on Alaska's North Slope* (SSRN Scholarly Paper No. 1474410). Social Science Research Network.
<https://papers.ssrn.com/abstract=1474410>
- D Anthony. (n.d.). *Mark Weller – D Anthony*. Retrieved January 28, 2026, from
<https://danthonygallery.com/mark-weller/>
- Dann, G. M. S. (1977). Anomie, ego-enhancement and tourism. *Annals of Tourism Research*, 4(4), 184–194. [https://doi.org/10.1016/0160-7383\(77\)90037-8](https://doi.org/10.1016/0160-7383(77)90037-8)
- Dann, G. M. S. (1981). Tourist motivation an appraisal. *Annals of Tourism Research*, 8(2), 187–219. [https://doi.org/10.1016/0160-7383\(81\)90082-7](https://doi.org/10.1016/0160-7383(81)90082-7)
- Dawson, J., Johnston, M. J., Stewart, E. J., Lemieux, C. J., Lemelin, R. H., Maher, P. T., & Grimwood, B. S. R. (2011). Ethical considerations of last chance tourism. *Journal of Ecotourism*, 10(3), 250–265. <https://doi.org/10.1080/14724049.2011.617449>
- De Sutter, F., & Van Bauwel, S. (2023). Uncovering the hidden bias: A study on ageism in Hollywood's portrayal of ageing femininities in romantic comedies (2000-2021). *DIGEST. JOURNAL OF DIVERSITY AND GENDER STUDIES*, 10(1), 19–34.
<https://doi.org/10.21825/digest.85865>
- DeMarban, A. (2021, March 24). Last-minute Trump administration order targets Alaska polar bear guides. *Anchorage Daily News*. <https://www.adn.com/alaska-news/rural-alaska/2021/03/24/last-minute-trump-administration-order-targets-alaska-polar-bear-guides/>
- Denley, T. J., Woosnam, K. M., Ribeiro, M. A., Boley, B. B., Hehir, C., & Abrams, J. (2020). Individuals' intentions to engage in last chance tourism: Applying the value-belief-

- norm model. *Journal of Sustainable Tourism*, 28(11), 1860–1881.
<https://doi.org/10.1080/09669582.2020.1762623>
- Destination Analysts. (2023). *Alaska 2022-2023 Visitor Profile Report* (p. 60). Alaska Travel Industry Association. <https://www.alaskatia.org/resources/research>
- Dodds, K., & Salazar, J. F. (2021). Gateway geopolitics: Assembling infrastructure, policies, and tourism in Hobart and Australian Antarctic Territory/East Antarctica. In *Tourism Geopolitics: Assemblages of Infrastructure, Affect, and Imagination* (pp. 351–375).
<https://researchdirect.westernsydney.edu.au/islandora/object/uws%3A60042/>
- Dohmen, J. (2016). Disability as Abject: Kristeva, Disability, and Resistance. *Hypatia*, 31(4), 762–778. <https://doi.org/10.1111/hypa.12266>
- Druick, Z. (2007). Documenting false history: Errol Morris and Mr. Death. *Studies in Documentary Film*, 1(3), 207–219. (505219320).
https://doi.org/10.1386/sdf.1.3.207_1
- D’Souza, J., Dawson, J., & Groulx, M. (2023). Last chance tourism: A decade review of a case study on Churchill, Manitoba’s polar bear viewing industry. *Journal of Sustainable Tourism*, 31(1), 14–31. <https://doi.org/10.1080/09669582.2021.1910828>
- Dunn Ross, E. L., & Iso-Ahola, S. E. (1991). Sightseeing tourists’ motivation and satisfaction. *Annals of Tourism Research*, 18(2), 226–237.
[https://doi.org/10.1016/0160-7383\(91\)90006-W](https://doi.org/10.1016/0160-7383(91)90006-W)
- Earley-Spadoni, T. (2017). Spatial History, deep mapping and digital storytelling: Archaeology’s future imagined through an engagement with the Digital Humanities. *Journal of Archaeological Science, Archaeological GIS Today: Persistent Challenges*,

- Pushing Old Boundaries, and Exploring New Horizons*, 84, 95–102.
- <https://doi.org/10.1016/j.jas.2017.05.003>
- Eijgelaar, E., Thaper, C., & Peeters, P. (2010). Antarctic cruise tourism: The paradoxes of ambassadorship, “last chance tourism” and greenhouse gas emissions. *Journal of Sustainable Tourism*, 18(3), 337–354. <https://doi.org/10.1080/09669581003653534>
- England, K. (2015). Producing Feminist Geographies: Theory, Methodologies and Research Strategies. In *Approaches to Human Geography: Philosophies, Theories, People and Practices* (2nd ed., pp. 361–372). SAGE.
- Erfani, G. (2022). Reconceptualising Sense of Place: Towards a Conceptual Framework for Investigating Individual-Community-Place Interrelationships. *Journal of Planning Literature*, 37(3), 452–466. <https://doi.org/10.1177/08854122221081109>
- Escobar, A. (2017). Complexity theory and the place of the now. *Cultural Dynamics*, 29(4), 333–339. <https://doi.org/10.1177/0921374017740460>
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4.
- Farish, M. (2005). Cities in Shade: Urban Geography and the Uses of Noir. *Environment and Planning D: Society and Space*, 23(1), 95–118. <https://doi.org/10.1068/d185>
- Finegan, C. (2015). The Alaska Lands Controversy: A Fight Bigger than the Last Frontier. *The George Wright Forum*, 32(3), 290–298.
- Fodness, D. (1994). Measuring tourist motivation. *Annals of Tourism Research*, 21(3), 555–581. [https://doi.org/10.1016/0160-7383\(94\)90120-1](https://doi.org/10.1016/0160-7383(94)90120-1)

- Ford, J. D., King, N., Galappaththi, E. K., Pearce, T., McDowell, G., & Harper, S. L. (2020). The Resilience of Indigenous Peoples to Environmental Change. *One Earth*, 2(6), 532–543. <https://doi.org/10.1016/j.oneear.2020.05.014>
- Ford, J. D., Pearce, T., Canosa, I. V., & Harper, S. (2021). The rapidly changing Arctic and its societal implications. *WIREs Climate Change*, 12(6), e735. <https://doi.org/10.1002/wcc.735>
- Foster, J. K. (2025). *Postmodern Historiography: Centres, Margins and Peripheries in the Historical Narrative in turn of the millennium Spanish Conquest Films* [RMIT University]. https://research-repository.rmit.edu.au/articles/thesis/Postmodern_Historiography_Centres_Margins_and_Peripheries_in_the_Historical_Narrative_in_turn_of_the_millennium_Spanish_Conquest_Films/28851950?file=54028592
- Galappaththi, E. K., Ford, J. D., Bennett, E. M., & Berkes, F. (2019). Climate change and community fisheries in the arctic: A case study from Pangnirtung, Canada. *Journal of Environmental Management*, 250, 109534. <https://doi.org/10.1016/j.jenvman.2019.109534>
- Gao, Q., Yin, D., & Zhu, H. (2020). Urban regeneration and emotional politics of place in Liede Village, Guangzhou, China. *Habitat International*, 103, 102199. <https://doi.org/10.1016/j.habitatint.2020.102199>
- Garland, A., Bukvic, A., & Maton-Mosurska, A. (2022). Capturing complexity: Environmental change and relocation in the North Slope Borough, Alaska. *Climate Risk Management*, 38, 100460. <https://doi.org/10.1016/j.crm.2022.100460>

- Gartler, S., Scheer, J., Meyer, A., Abass, K., Bartsch, A., Doloisio, N., Falardeau, J., Hugelius, G., Irrgang, A., Haukur Ingimundarson, J., Jungsberg, L., Lantuit, H., Nymand Larsen, J., Lodi, R., Martin, V. S., Mercer, L., Nielsen, D., Overduin, P., Povoroznyuk, O., ... Ingeman-Nielsen, T. (2025). A transdisciplinary, comparative analysis reveals key risks from Arctic permafrost thaw. *Communications Earth & Environment*, 6(1), 21. <https://doi.org/10.1038/s43247-024-01883-w>
- Gavrilov, A. N., & Kholosha, M. V. (2020). Arctic Tourism: New Opportunities for Russia. *Asia-Pacific Journal of Marine Science & Education*, 10(1), 60–69.
- Gill, K. (2014). Tourists’ Perceptions about Tourism Impacts: A Literature Review. *Journal of Business Thought*, 5, 71–85.
- Gladden, J. N. (2001). Wilderness Politics in Finnish Lapland: Core and Periphery Conflicts. *Northern Review*, (23), Article 23. <https://thenorthernreview.ca/nr/index.php/nr/article/view/166>
- Gnoth, J. (1997). Tourism motivation and expectation formation. *Annals of Tourism Research*, 24(2), 283–304. [https://doi.org/10.1016/S0160-7383\(97\)80002-3](https://doi.org/10.1016/S0160-7383(97)80002-3)
- Goehring, C. (2022). “I’m Not Your Adventure”: Trans Fetishism on Contemporary Television. In *Transmedia and Public Representation: Transgender People in Film and Television* (pp. 37–53). Peter Lang.
- Gone, J. P., Hartmann, W. E., Pomerville, A., Wendt, D. C., Klem, S. H., & Burrage, R. L. (2019). The impact of historical trauma on health outcomes for indigenous populations in the USA and Canada: A systematic review. *American Psychologist*, 74(1), 20–35. <https://doi.org/10.1037/amp0000338>

- González-García, R. J., Martínez-Rico, G., Bañuls-Lapuerta, F., & Calabuig, F. (2022). Residents' Perception of the Impact of Sports Tourism on Sustainable Social Development. *Sustainability*, 14(3), Article 3. <https://doi.org/10.3390/su14031232>
- Good, A., Sims, L., Clarke, K., & Russo, F. A. (2021). Indigenous youth reconnect with cultural identity: The evaluation of a community- and school-based traditional music program. *Journal of Community Psychology*, 49(2), 588–604. <https://doi.org/10.1002/jcop.22481>
- Gössling, S. (2002). Global environmental consequences of tourism. *Global Environmental Change*, 12(4), 283–302. [https://doi.org/10.1016/S0959-3780\(02\)00044-4](https://doi.org/10.1016/S0959-3780(02)00044-4)
- Grafton, D., Quandt, A., & Chu, V. (2025a). Last chance tourism? Revealing true tourist motivations for visiting northernmost Alaska. *Annals of Tourism Research Empirical Insights*, 6(2), 100183. <https://doi.org/10.1016/j.annale.2025.100183>
- Grafton, D., Quandt, A., & Chu, V. W. (2025b). Iñupiaq cultural heritage and local perspectives of environmental change in northernmost Alaska. *Environmental Research: Ecology*, 4(4), 045003. <https://doi.org/10.1088/2752-664X/ae23d3>
- Gregory, I. N., & Geddes, A. (Eds.). (2014). *Toward Spatial Humanities: Historical GIS and Spatial History*. Indiana University Press.
- Griffiths, A. (2025). *Nomadic Cinema: A Cultural Geography of the Expedition Film* (p. 368 Pages). Columbia University Press.
- Groulx, M., Lemieux, C., Dawson, J., Stewart, E., & Yudina, O. (2016). Motivations to engage in last chance tourism in the Churchill Wildlife Management Area and Wapusk National Park: The role of place identity and nature relatedness. *Journal of*

- Sustainable Tourism*, 24(11), 1523–1540.
- <https://doi.org/10.1080/09669582.2015.1134556>
- Guest, G., Namey, E., & Chen, M. (2020). A simple method to assess and report thematic saturation in qualitative research. *PloS One*, 15(5), e0232076.
- <https://doi.org/10.1371/journal.pone.0232076>
- Guyer, J. P. (2013). *Introduction to Utilidors, Power Distribution and Communication Systems in Cold Regions*. Continuing Education and Development, Inc.
- <https://www.cedengineering.com/userfiles/Utilidors,%20Power%20Dist%20&%20Com%20Sys%20in%20Cold%20Regions.pdf>
- Hall, C. M. (2015). Elaborating Core-Periphery Relations in Tourism. In *Challenges in Tourism Research* (pp. 162–170).
- Hallam, J., & Roberts, L. (2014). Mapping the City in Film. In *Toward Spatial Humanities: Historical GIS and Spatial History* (pp. 143–171). Indiana University Press.
- Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, 14(3), 575–599.
- <https://doi.org/10.2307/3178066>
- Haraway, D. J. (2016). *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press Books.
- Hay, I., & Cope, M. (Eds.). (2021). *Qualitative Research Methods in Human Geography* (5th ed.). Oxford University Press. <https://global.oup.com/academic/product/qualitative-research-methods-in-human-geography-9780199034215?cc=us&lang=en>
- Herman-Mercer, N. M., Laituri, M., Massey, M., Matkin, E., Toohey, R. C., Elder, K., Schuster, P. F., & Mutter, E. (2019). Vulnerability of Subsistence Systems Due to

- Social and Environmental: A Case Study in the Yukon-Kuskokwim Delta, Alaska. *Arctic*, 72(3), 258–272.
- Herrmann, V. (2017). America's first climate change refugees: Victimization, distancing, and disempowerment in journalistic storytelling. *Energy Research & Social Science, Narratives and Storytelling in Energy and Climate Change Research*, 31, 205–214. <https://doi.org/10.1016/j.erss.2017.05.033>
- Hersher, R. (2016, December 1). Barrow, Alaska, Changes Its Name Back To Its Original “Utqiagvik.” *NPR*. <https://www.npr.org/sections/thetwo-way/2016/12/01/503979353/barrow-alaska-changes-its-name-back-to-its-original-utqiagvik>
- Hillmer-Pegram, K. (2016). Integrating Indigenous values with capitalism through tourism: Alaskan experiences and outstanding issues. *Journal of Sustainable Tourism*, 24(8/9), 1194–1210. <https://doi.org/10.1080/09669582.2016.1182536>
- Hindley, A., & Font, X. (2018). Values and motivations in tourist perceptions of last-chance tourism. *Tourism and Hospitality Research*, 18(1), 3–14. <https://doi.org/10.1177/1467358415619674>
- Holmes, A. P., Grimwood, B. S. R., & King, L. J. (2016). Creating an Indigenized visitor code of conduct: The development of Denesoline self-determination for sustainable tourism. *Journal of Sustainable Tourism*, 24(8/9), 1177–1193. <https://doi.org/10.1080/09669582.2016.1158828>
- Holmgaard, S. B., Thuestad, A. E., Myrvoll, E. R., & Barlindhaug, S. (2019). Monitoring and Managing Human Stressors to Coastal Cultural Heritage in Svalbard. *Humanities*, 8(1), Article 1. <https://doi.org/10.3390/h8010021>

- Huang, S. (Sam). (2021). Tourist motivation: A critical overview. In *Routledge Handbook of the Tourist Experience*. Routledge.
- Huh, C., & Vogt, C. A. (2008). Changes in Residents' Attitudes toward Tourism over Time: A Cohort Analytical Approach. *Journal of Travel Research*, 46(4), 446–455.
<https://doi.org/10.1177/0047287507308327>
- Huntington, H. P., Carey, M., Apok, C., Forbes, B. C., Fox, S., Holm, L. K., Ivanova, A., Jaypoody, J., Noongwook, G., & Stammeler, F. (2019). Climate change in context: Putting people first in the Arctic. *Regional Environmental Change*, 19(4), 1217–1223.
<https://doi.org/10.1007/s10113-019-01478-8>
- Huntington, H. P., Quakenbush, L. T., & Nelson, M. (2017). Evaluating the Effects of Climate Change on Indigenous Marine Mammal Hunting in Northern and Western Alaska Using Traditional Knowledge. *Frontiers in Marine Science*, 4.
<https://doi.org/10.3389/fmars.2017.00319>
- Hvenegaard, G. T. (2012). Last Chance Birding. In *Last Chance Tourism: Adapting Tourism Opportunities in a Changing World* (pp. 71–88). Routledge.
- Ibekwe, D. (2024, March 3). Climate Change and 'Last-Chance Tourism.' *The New York Times*. <https://www.nytimes.com/2024/03/03/briefing/last-chance-tourism.html>
- Irrgang, A. M., Bendixen, M., Farquharson, L. M., Baranskaya, A. V., Erikson, L. H., Gibbs, A. E., Ogorodov, S. A., Overduin, P. P., Lantuit, H., Grigoriev, M. N., & Jones, B. M. (2022). Drivers, dynamics and impacts of changing Arctic coasts. *Nature Reviews Earth & Environment*, 3(1), 39–54. <https://doi.org/10.1038/s43017-021-00232-1>
- Irvine, R. D. G., Bodenhorn, B., Lee, E., & Amarbayasgalan, D. (2019). Learning to See Climate Change: Children's Perceptions of Environmental Transformation in

- Mongolia, Mexico, Arctic Alaska, and the United Kingdom. *Current Anthropology*, 60(6), 723–740. <https://doi.org/10.1086/706606>
- Jacobson, D., & Mustafa, N. (2019). Social Identity Map: A Reflexivity Tool for Practicing Explicit Positionality in Critical Qualitative Research. *International Journal of Qualitative Methods*, 18, 1–12. <https://doi.org/10.1177/1609406919870075>
- Johnson, D. E., Parsons, M., & Fisher, K. (2021). Indigenous climate change adaptation: New directions for emerging scholarship. *Environment and Planning E: Nature and Space*, 5, 1541–1578. (Sage UK: London, England).
<https://doi.org/10.1177/25148486211022450>
- Johnson, L. B. (2015). Why are you here? Toward reflexivity, positionality, and multivocality at the intersections of research and tourism. In *Scientific Tourism: Researchers as Travellers* (pp. 9–21). Routledge.
- Johnston, B. (2024, May 21). *See this magnificent place before it's gone forever*. The Age.
<https://www.theage.com.au/traveller/inspiration/see-this-magnificent-place-before-it-s-gone-forever-20240506-p5fpbs.html>
- Kearns, G. (Ed.). (2007). Taking theory for a walk in Ireland. In *Practising the Archive: Reflections on Methodology and Practice in Historical Geography* (pp. 9–22). Royal Geographical Society.
- Kennedy, C., & Lukinbeal, C. (1997). Towards a holistic approach to geographic research on film. *Progress in Human Geography*, 21(1), 33–50.
<https://doi.org/10.1191/030913297673503066>

- Kleinberg, S., & Toomey, A. H. (2023). The use of qualitative research to better understand public opinions on climate change. *Journal of Environmental Studies and Sciences*, 13(3), 367–375. <https://doi.org/10.1007/s13412-023-00841-w>
- Klenosky, D. B. (2002). The “Pull” of Tourism Destinations: A Means-End Investigation. *Journal of Travel Research*, 40(4), 396–403. <https://doi.org/10.1177/004728750204000405>
- Kohm, S., & Richtik, T. (2018). Representing Justice in Indigenous Canadian Crime Films. *Interdisciplinary Justice Research*, 7, 68–95.
- Kozak, M. (2002). Comparative analysis of tourist motivations by nationality and destinations. *Tourism Management*, 23(3), 221–232. [https://doi.org/10.1016/S0261-5177\(01\)00090-5](https://doi.org/10.1016/S0261-5177(01)00090-5)
- Kozak, M., Kim, S. (Sam), & Chon, K. (2017). Competitiveness of overseas pleasure destinations: A comparison study based on choice sets. *International Journal of Tourism Research*, 19(5), 569–583. <https://doi.org/10.1002/jtr.2130>
- Krausz, P. (2003). Screening Indigenous Australia An Overview of Aboriginal Representation on Film. *Australian Screen Education*, (32), 90–95. (11539360).
- Kristeva, J. (1982). *Powers of Horror: An Essay on Abjection*. Columbia University Press.
- Kristeva, J. (1994). *Strangers to Ourselves*. Columbia University Press.
- Ksenofontov, S. S., & Petrov, A. N. (2024). Global Change Impacts on Indigenous Sustainability in Sakha Republic: A Synthesis of Knowledge. *Sustainability*, 16(3), Article 3. <https://doi.org/10.3390/su16031157>

- Kucukergin, K. G., & Gürlek, M. (2020). ‘What if this is my last chance?’: Developing a last-chance tourism motivation model. *Journal of Destination Marketing & Management*, 18, 100491. <https://doi.org/10.1016/j.jdmm.2020.100491>
- Kumalasari, D. A., Thalib, B., & Ekasari, S. (2025). ANALYSIS OF ECONOMIC ADAPTATION PATTERNS OF COASTAL COMMUNITIES IN THE ERA OF CLIMATE CHANGE: A SYSTEMATIC REVIEW OF SUSTAINABLE LIVELIHOOD STRATEGIES. *INTERNATIONAL JOURNAL OF ECONOMIC LITERATURE*, 3(4), 44–55.
- Lam, D. P. M., Hinz, E., Lang, D. J., Tengö, M., von Wehrden, H., & Martín-López, B. (2020). Indigenous and local knowledge in sustainability transformations research: A literature review. *Ecology and Society*, 25(1), 3.
- Laugrand, F. B., & Oosten, J. G. (2013). “We’re Back with Our Ancestors”: Inuit Bowhead Whaling in the Canadian Eastern Arctic. *Anthropos*, 108(2), 431–443.
- Le Teno, S., & Frison, C. (2021). Sea-ice melting, collective inuit peoples’ rights and the human rights discourse: A critical legal analysis of the nunavut governance system. *Environmental Policy and Law*, 51(4), 223–234. Scopus. <https://doi.org/10.3233/EPL-201067>
- Lebel, L., Paquin, V., Kenny, T.-A., Fletcher, C., Nadeau, L., Chachamovich, E., & Lemire, M. (2022). Climate change and Indigenous mental health in the Circumpolar North: A systematic review to inform clinical practice. *Transcultural Psychiatry*, 59(3), 312–336. <https://doi.org/10.1177/13634615211066698>

- Lee, Y. S., Weaver, D. B., & Prebensen, N. K. (Eds.). (2017). *Arctic tourism experiences: Production, consumption and sustainability* (1st ed.). CABI.
<https://doi.org/10.1079/9781780648620.0000>
- Lemelin, H., Dawson, J., & Stewart, E. J. (Eds.). (2012). *Last Chance Tourism: Adapting Tourism Opportunities in a Changing World* (1st ed.).
- Lemelin, H., Dawson, J., Stewart, E. J., Maher, P., & Lueck, M. (2010). Last-chance tourism: The boom, doom, and gloom of visiting vanishing destinations. *Current Issues in Tourism*, 13(5), 477–493. <https://doi.org/10.1080/13683500903406367>
- Lemelin, H., & Whipp, P. (2019). Last chance tourism: A decade in review. In D. J. Timothy (Ed.), *Handbook of Globalization and Tourism* (pp. 316–322). Edward Elgar Publishing.
- Lenzen, M., Sun, Y.-Y., Faturay, F., Ting, Y.-P., Geschke, A., & Malik, A. (2018). The carbon footprint of global tourism. *Nature Climate Change*, 8(6), 522–528.
<https://doi.org/10.1038/s41558-018-0141-x>
- Liew, M., Xiao, M., Jones, B. M., Farquharson, L. M., & Romanovsky, V. E. (2020). Prevention and control measures for coastal erosion in northern high-latitude communities: A systematic review based on Alaskan case studies. *Environmental Research Letters*, 15(9), 093002. <https://doi.org/10.1088/1748-9326/ab9387>
- Lin, G., Xiang, L., & Sang, K. (2022). Scenic Railway Mapping: An Analysis of Spatial Patterns in France Based on Historical GIS. *ISPRS International Journal of Geo-Information*, 11(2), Article 2. <https://doi.org/10.3390/ijgi11020099>

- Livingston, S. B. (2016). *THE GOOEY, THE BLOODY, AND JUST PLAIN GROSS: EXPLORING ART AND VISUAL CULTURE WITH AN ABJECT VISUAL METHODOLOGY*. University of Illinois at Urbana-Champaign.
- Lukinbeal, C. (2024). *Cinematic Cartography: Scale, Analysis, Topography* (1st edition). Routledge.
- Lukinbeal, C. L. (2000). "On location" in San Diego: Film, television and urban thirdspace [Ph.D., University of California, Santa Barbara].
<https://www.proquest.com/docview/304600315/abstract/22E5051D495F4E7BPQ/1>
- Maher, P. T., Gelter, H., Hillmer-Pegram, K., Hovgaard, G., Hull, J., Jóhannesson, G. Þ., Karlsdóttir, A., Rantala, O., & Pashkevich, A. (2014). Arctic Tourism: Realities and Possibilities. *Arctic Yearbook*, (2014), 290–306.
- Maldonado, J. K., Shearer, C., Bronen, R., Peterson, K., & Lazrus, H. (2014). The impact of climate change on tribal communities in the US: Displacement, relocation, and human rights. In J. K. Maldonado, B. Colombi, & R. Pandya (Eds.), *Climate Change and Indigenous Peoples in the United States: Impacts, Experiences and Actions* (pp. 93–106). Springer International Publishing. https://doi.org/10.1007/978-3-319-05266-3_8
- Malik, I. H., & Ford, J. D. (2025). Barriers and limits to adaptation in the Arctic. *Current Opinion in Environmental Sustainability*, 73, 101519.
<https://doi.org/10.1016/j.cosust.2025.101519>
- Mandolini, N. (2023). Re-appropriating abjection: Feminism, comics, and the macabre coming-of-age. *Feminist Encounters: A Journal of Critical Studies in Culture and Politics*, 7(2), 32. <https://doi.org/10.20897/femenc/13560>

- Mannell, R. C., & Iso-Ahola, S. E. (1987). Psychological nature of leisure and tourism experience. *Annals of Tourism Research*, 14(3), 314–331.
[https://doi.org/10.1016/0160-7383\(87\)90105-8](https://doi.org/10.1016/0160-7383(87)90105-8)
- Manzo, L. C. (2005). For better or worse: Exploring multiple dimensions of place meaning. *Journal of Environmental Psychology*, 25(1), 67–86.
<https://doi.org/10.1016/j.jenvp.2005.01.002>
- Manzo, L. C., Williams, D. R., Masso, A. D., Raymond, C. M., & Gulsrud, N. (2023). Using Senses of Place to Help Communities Navigate Place Disruption and Uncertainty. *Landscape Journal*, 42(1), 37–52. <https://doi.org/10.3368/lj.42.1.37>
- Marjavaara, R., Nilsson, R. O., & Müller, D. K. (2022). The Arctification of northern tourism: A longitudinal geographical analysis of firm names in Sweden. *Polar Geography*, 45(2), 119–136. <https://doi.org/10.1080/1088937X.2022.2032449>
- Markowitz, E. M., & Shariff, A. F. (2012). Climate change and moral judgement. *Nature Climate Change*, 2(4), Article 4. <https://doi.org/10.1038/nclimate1378>
- McCahey, D. (2021). ‘The last refuge of male chauvinism’: Print culture, masculinity, and the British Antarctic Survey (1960-1996). *Gender, Place & Culture: A Journal of Feminist Geography*, 1–18. <https://doi.org/10.1080/0966369x.2021.1873746>
- McClanahan, P. (2024). *The New Tourist: Waking Up to the Power and Perils of Travel*. Simon & Schuster.
- McHugh, T.-L. F., Coppola, A. M., & Sabiston, C. M. (2014). “I’m thankful for being Native and my body is part of that”: The body pride experiences of young Aboriginal women in Canada. *Body Image*, 11(3), 318–327.
<https://doi.org/10.1016/j.bodyim.2014.05.004>

McIntosh, M. O. (2024). *“The Whole Thing Was to Try to Make a Living Here”: Labor, Land, and the Relationships They Produced on the Trans-Alaska Pipeline System, 1974-Present* [M.A., University of Oregon].
<https://www.proquest.com/docview/3083846407/abstract/E50AB6BD0B2C4E29PQ/>

1

Mendenhall, E. (2016). The Discursive Construction of the New Arctic. In *The WSPC Reference on Natural Resources and Environmental Policy in the Era of Global Change* (Vol. 2, pp. 33–60). WORLD SCIENTIFIC.
https://doi.org/10.1142/9789813208162_0002

Merriam, S. B., & Tisdell, E. J. (2009). *Qualitative Research: A Guide to Design and Implementation* (Fourth Edition). Jossey-Bass.

Mey, K. (2016). Corpus delicti. In *Abject visions: Powers of horror in art and visual culture* (pp. 144–159). Manchester University Press.

Miller, J. S. (2004). *The Horror Spoofs of Abbott and Costello—McFarland*. McFarland.
<https://mcfarlandbooks.com/product/the-horror-spoofs-of-abbott-and-costello/>

Miller, L. B. (2019). *On the Edge of the World: Examining ProEnvironmental Outcomes of Last Chance Tourism in Kaktovik, Alaska* [Clemson University].
https://tigerprints.clemson.edu/all_theses/3072

Moerlein, K. J., & Carothers, C. (2012). Total Environment of Change: Impacts of Climate Change and Social Transitions on Subsistence Fisheries in Northwest Alaska. *Ecology and Society*, 17(1). <https://www.jstor.org/stable/26268996>

- Moghaddam, J., Momper, S., & Fong, T. (2013). Discrimination and Participation in Traditional Healing for American Indians and Alaska Natives. *Journal of Community Health, 38*(6), 1115–1123. (91843093). <https://doi.org/10.1007/s10900-013-9721-x>
- Moreira Gregori, P. E., Román, C., & Martín, J. C. (2022). Residents' perception of a mature and mass tourism destination: The determinant factors in Gran Canaria. *Tourism Economics, 28*(2), 515–534. <https://doi.org/10.1177/1354816620968330>
- Mosoni, C., Hildén, M., Fronzek, S., Reyer, C. P. O., & Carter, T. R. (2024). Cross-border dimensions of Arctic climate change impacts and implications for Europe. *WIREs Climate Change, 15*(5), e905. <https://doi.org/10.1002/wcc.905>
- Müller, D. K. (2021). Tourism in National Arctic Strategies: A Perspective on the Tourism-Geopolitics Nexus. In *Tourism Geopolitics: Assemblages of Infrastructure, Affect, and Imagination* (pp. 91–122). University of Arizona Press.
<http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-186485>
- Müller, D. K. (2025). Polar tourism and the changing geographies of the Arctic and the Antarctic regions. *Tourism Geographies, 27*(3–4), 872–880.
<https://doi.org/10.1080/14616688.2025.2462777>
- Müller, D. K., & Viken, A. (2017). Indigenous Tourism in the Arctic. In *Tourism and indigeneity in the Arctic.: Tourism and Cultural Change 51* (pp. 21–40). Channel View Publications. <https://www.cabdirect.org/cabdirect/abstract/20173178157>
- Mulvey, L. (1996). *Fetishism and Curiosity*. Indiana University Press.
- Murphy, J. (2015). The role of women in film: Supporting the men -- An analysis of how culture influences the changing discourse on gender representations in film. *Journalism Undergraduate Honors Theses*. <https://scholarworks.uark.edu/jouruht/2>

- Nadasdy, P. (2016). First Nations, Citizenship and Animals, or Why Northern Indigenous People Might Not Want to Live in Zoopolis. *Canadian Journal of Political Science*, 49(1), 1–20. <https://doi.org/10.1017/S0008423915001079>
- Naylor, R. S., & Hunt, C. A. (2021). Tourism and Livelihood Sovereignty: A Theoretical Introduction and Research Agenda for Arctic Contexts. *Societies*, 11(3), Article 3. <https://doi.org/10.3390/soc11030105>
- Nel, A. (2012). The repugnant appeal of the abject: Cityscape and cinematic corporality in District 9. *Critical Arts*, 26(4), 547–569. <https://doi.org/10.1080/02560046.2012.723845>
- Nenasheva, M. V. (2023). Resilience of Arctic Communities: Concept, Methodology and Research Directions. *Arctic and North*, (51), 262–273. <https://doi.org/10.37482/issn2221-2698.2023.51.262>
- Nicu, I. C., & Fatorić, S. (2023). Climate change impacts on immovable cultural heritage in polar regions: A systematic bibliometric review. *WIREs Climate Change*, 14(3), e822. <https://doi.org/10.1002/wcc.822>
- Nikolaus, C. J., Johnson, S., Benally, T., Maudrie, T., Henderson, A., Nelson, K., Lane, T., Segrest, V., Ferguson, G. L., Buchwald, D., Blue Bird Jernigan, V., & Sinclair, K. (2022). Food Insecurity among American Indian and Alaska Native People: A Scoping Review to Inform Future Research and Policy Needs. *Advances in Nutrition*, 13(5), 1566–1583. <https://doi.org/10.1093/advances/nmac008>
- Nilsson, P.-E. (2019). Fuck Autonomy: Neo-Orientalism and Abjection in Michel Houellebecq's *Soumission*. *European Review*, 27(4), 600–614. <https://doi.org/10.1017/S1062798719000206>

- Nishiyama, H. (2024). Mainland ignorance: Okinawa and Japanese colonial unknowing. *Geoforum*, 157, 104146. <https://doi.org/10.1016/j.geoforum.2024.104146>
- North Slope Borough. (2014). *Soaring to the future: Barrow comprehensive plan 2015-2035* (Comprehensive Plan Final Draft). City of Barrow. http://www.north-slope.org/assets/images/uploads/Barrow_Comp_Plan_March_2015_FINAL.pdf.
- North Slope Borough. (2019). *North Slope Borough Comprehensive Plan, 2019-2039* (Comprehensive Plan Nos. 75-06–73; p. 504). North Slope Borough. https://www.north-slope.org/wp-content/uploads/2022/02/NSB_Comprehensive_Plan_2019-2039.pdf
- Nozari, E. (2017, November 19). *This Alaskan Town Is Being Overrun by Polar Bears and Tourists*. Condé Nast Traveler. <https://www.cntraveler.com/story/alaskan-town-kaktovik-polar-bears-and-tourists>
- Nunkoo, R. (Ed.). (2018). *Handbook of Research Methods for Tourism and Hospitality Management*. Edward Elgar Publishing. <https://www.elgaronline.com/display/edcoll/9781785366277/9781785366277.xml>
- Nunkoo, R., Smith, S. L. J., & Ramkissoon, H. (2013). Residents' attitudes to tourism: A longitudinal study of 140 articles from 1984 to 2010. *Journal of Sustainable Tourism*, 21(1), 5–25. <https://doi.org/10.1080/09669582.2012.673621>
- Obituary – Remembering Don Clocksin*. (2020). <https://donclocksin.com/obituary/>
- Odyseos, L. (2025). Against Archival Abjection: Black Annotation and Critical Fabulation as Aesthetic-Poetic Interventions into the Violence of the Archive. *Global Studies Quarterly*, 5(3), ksaf081. <https://doi.org/10.1093/isagsq/ksaf081>

- O'Malley, J. (2017, June 20). *A Teen Whaler in the Age of Cyberbullies*. Hakai Magazine.
<https://hakaimagazine.com/features/teen-whaler-age-cyberbullies/>
- Paiva, D., Carvalho, L., Brito-Henriques, E., Sousa, A. M., Soares, A. L., & Azambuja, S. T. (2023). Digital storytelling and hopeful last chance tourism experiences. *Tourism Geographies*, 25(5), 1428–1444. <https://doi.org/10.1080/14616688.2023.2224043>
- Pannekoek, F. (2001). Cyber Imperialism and the Marginalization of Canada's Indigenous Peoples. In *The Handing Down of Culture, Smaller Societies, and Globalization* (pp. 64–80). grubstreet.
- Parks, K. I. (2022). Indigenous Boarding Schools in the United States and Canada: Potential Issues and Opportunities for Redress as the United States Government Initiates Formal Investigation. *American Indian Law Review*, 47(1), 37–70.
- Parry, A. J., Altaf, S., & Shah, A. H. (2024). Gender Dynamics in Artificial Intelligence: Problematising Femininity in the Film Alita: Battle Angel. *3L, Language, Linguistics, Literature*, 30(4), 16–32. <https://doi.org/10.17576/3L-2024-3004-02>
- Pearce, P. L., & Lee, U.-I. (2005). Developing the Travel Career Approach to Tourist Motivation. *Journal of Travel Research*, 43(3), 226–237.
<https://doi.org/10.1177/0047287504272020>
- Pearce, T., Ford, J., Duerden, F., Furgal, C., Dawson, J., & Smit, B. (2015). Factors of Adaptation: Climate Change Policy Responses for Canada's Inuit. In *From Science to Policy in the Western and Central Canadian Arctic: An Integrated Regional Impact Study (IRIS) of Climate Change and Modernization* (pp. 403–427). ArcticNet.
- Pearson, J., Jackson, G., & McNamara, K. E. (2023). Climate-driven losses to knowledge systems and cultural heritage: A literature review exploring the impacts on Indigenous

- and local cultures. *The Anthropocene Review*, 10(2), 343–366.
<https://doi.org/10.1177/20530196211005482>
- Pemberton, J. (2018, September 6). In *Kaktovik, sea ice loss means a boom in polar bear tourism*. Alaska Public Media. <https://alaskapublic.org/news/2018-09-05/in-kaktovik-sea-ice-loss-means-a-boom-in-polar-bear-tourism>
- Perez, J. E. (2020). Speculating Ancestor(ie)s: The Cavernous Memory of White Innocence and Fluid Embodiments of Afrofuturist Memory-Work. *Humanities*, 9(4).
<https://doi.org/10.3390/h9040138>
- Peterson, D., Hanazaki, N., & Berkes, F. (2020). Do We All Speak the Same Language When Talking Conservation? Caiçara Understandings of Conservation in their Landscape. *Conservation and Society*, 18(3), 238–251. https://doi.org/10.4103/cs.cs_18_123
- Pheko, L. (2025). The Fourth Industrial Revolution (4IR) and new Colonialism: An Afrikan feminist-decolonialist perspective. *African Journal of Pedagogy and Curriculum*, 7(1), 72–94. <https://doi.org/10.63569/ajopac/07/01/06>
- Philip, J., Newman, J., Bifelt, J., Brooks, C., & Rivkin, I. (2022). Role of social, cultural and symbolic capital for youth and community wellbeing in a rural Alaska Native community. *Children and Youth Services Review*, 137, 106459.
<https://doi.org/10.1016/j.childyouth.2022.106459>
- Piovan, S. E. (2020). *The Geohistorical Approach: Methods and Applications*. Springer.
- POLARIN. (n.d.). *Barrow Arctic Research Center, US*. <https://eu-polarin.eu/barrow-arctic-research-center-us/>
- Povoroznyuk, O., Vincent, W. F., Schweitzer, P., Laptander, R., Bennett, M., Calmels, F., Sergeev, D., Arp, C., Forbes, B. C., Roy-Léveillé, P., & Walker, D. A. (2023). Arctic

- roads and railways: Social and environmental consequences of transport infrastructure in the circumpolar North. *Arctic Science*, 9(2), 297–330.
<https://doi.org/10.1139/as-2021-0033>
- Prebensen, N. K., Woo, E., Chen, J. S., & Uysal, M. (2013). Motivation and Involvement as Antecedents of the Perceived Value of the Destination Experience. *Journal of Travel Research*, 52(2), 253–264. <https://doi.org/10.1177/0047287512461181>
- Pride, T., Lam, A., Swansburg, J., Seno, M., Lowe, M. B., Bomfim, E., Toombs, E., Marsan, S., LoRusso, J., Roy, J., Gurr, E., LaFontaine, J., Paul, J., Burack, J. A., Mushquash, C., Stewart, S. H., & Wendt, D. C. (2021). Trauma-informed Approaches to Substance Use Interventions with Indigenous Peoples: A Scoping Review. *Journal of Psychoactive Drugs*, 53(5), 460–473.
<https://doi.org/10.1080/02791072.2021.1992047>
- Pugh, J., & Chandler, D. (2021). *Anthropocene Islands: Entangled Worlds*. University of Westminster Press.
- Qiu, W., Chen, Y., Zheng, X., & Lv, X. (2023). What do tourists look like to destination residents? Development of a tourist image scale from a high cultural distance perspective. *Journal of Retailing and Consumer Services*, 70, 103140.
<https://doi.org/10.1016/j.jretconser.2022.103140>
- Raj, K. (2016). Go-Betweens, Travelers, and Cultural Translators. In *A Companion to the History of Science* (pp. 39–57). John Wiley & Sons, Inc.
- Rantanen, M., Karpechko, A. Y., Lipponen, A., Nordling, K., Hyvärinen, O., Ruosteenoja, K., Vihma, T., & Laaksonen, A. (2022a). The Arctic has warmed nearly four times faster

- than the globe since 1979. *Communications Earth & Environment*, 3(1), 168.
<https://doi.org/10.1038/s43247-022-00498-3>
- Rantanen, M., Karpechko, A. Y., Lipponen, A., Nordling, K., Hyvärinen, O., Ruosteenoja, K., Vihma, T., & Laaksonen, A. (2022b). The Arctic has warmed nearly four times faster than the globe since 1979. *Communications Earth & Environment*, 3(1), 1–10.
<https://doi.org/10.1038/s43247-022-00498-3>
- Raymond, C. M., Williams, D. R., Masso, A. D., Manzo, L. C., & Wirth, T. von. (2021). Introduction: Senses of place in the face of global challenges. In *Changing senses of place: Navigating global challenges* (pp. 1–18). Cambridge University Press.
<https://research.fs.usda.gov/treesearch/63942>
- Reed, J. C. (1969). The Story of the Naval Arctic Research Laboratory. *ARCTIC*, 22(3), 177–183. <https://doi.org/10.14430/arctic3211>
- Reich, J. A. (2021). Power, Positionality, and the Ethic of Care in Qualitative Research. *Qualitative Sociology*, 44(4), 575–581. <https://doi.org/10.1007/s11133-021-09500-4>
- Reid, S. (2017, February 24). *Tiny Eskimo village becomes “polar bear capital of United States.”* The Independent. <https://www.independent.co.uk/travel/americas/polar-bear-capital-united-states-us-eskimo-village-alaska-arctic-circle-kaktovik-barter-island-a7594216.html>
- Rellihan, K. (2024, July 3). Why it’s time to rethink what it means to be a tourist. *BBC News*. <https://www.bbc.com/travel/article/20240702-why-its-time-to-rethink-what-it-means-to-be-a-tourist>

- Revich, B. A., Eliseev, D. O., & Shaposhnikov, D. A. (2022). Risks for Public Health and Social Infrastructure in Russian Arctic under Climate Change and Permafrost Degradation. *Atmosphere*, 13(4), Article 4. <https://doi.org/10.3390/atmos13040532>
- Rode, K. D., Douglas, D. C., Atwood, T. C., Durner, G. M., Wilson, R. R., & Pagano, A. M. (2022). Observed and forecasted changes in land use by polar bears in the Beaufort and Chukchi Seas, 1985–2040. *Global Ecology and Conservation*, 40, e02319. <https://doi.org/10.1016/j.gecco.2022.e02319>
- Rogerson, R. (2022, November 30). *Biden administration commits \$50 million to relocation of two Alaska villages threatened by climate change*. Anchorage Daily News. <https://www.adn.com/alaska-news/rural-alaska/2022/11/30/white-house-announces-50-million-to-relocate-2-alaska-communities/>
- Roth, R. E. (2021). Cartographic Design as Visual Storytelling: Synthesis and Review of Map-Based Narratives, Genres, and Tropes. *The Cartographic Journal*, 58(1), 83–114. <https://doi.org/10.1080/00087041.2019.1633103>
- Runge, C. A., Daigle, R. M., & Hausner, V. H. (2020). Quantifying tourism booms and the increasing footprint in the Arctic with social media data. *PLoS ONE*, 15(1), 1–14. <https://doi.org/10.1371/journal.pone.0227189>
- Rust, N. A., Abrams, A., Challender, D. W. S., Chapron, G., Ghoddousi, A., Glikman, J. A., Gowan, C. H., Hughes, C., Rastogi, A., Said, A., Sutton, A., Taylor, N., Thomas, S., Unnikrishnan, H., Webber, A. D., Wordingham, G., & Hill, C. M. (2017). Quantity Does Not Always Mean Quality: The Importance of Qualitative Social Science in Conservation Research. *Society & Natural Resources*, 30(10), 1304–1310. <https://doi.org/10.1080/08941920.2017.1333661>

- Ruth, D. (2020). Indigenous wisdom, capital, technology and education. *New Zealand Journal of Educational Studies*, 55(2), 405–422.
- Saarinen, J., & Varnajot, A. (2019). The Arctic in tourism: Complementing and contesting perspectives on tourism in the Arctic. *Polar Geography*, 42(2), 109–124.
<https://doi.org/10.1080/1088937X.2019.1578287>
- Sachar, S. (2024). Gender Representation in Film and Media. *Research Invention Journal of Research in Education*, 4, 33–36. <https://doi.org/10.59298/RIJRE/2024/433336>
- Saito, K., Kugo, Y., Koskey, M., Iwahana, G., Hirasawa, Y., Tatsuzawa, S., Zhegusov, Y., Jambaljav, Y., & John, T. A. (2024). Food life history and cold storage in Greater Beringia. Part I: Preliminary interdisciplinary investigation. *Polar Science, Special Issue on “The Seventh International Symposium on Arctic Research (ISAR-7),”* 41, 101092. <https://doi.org/10.1016/j.polar.2024.101092>
- Sakakibara, C. (2017). People of the Whales: Climate Change and Cultural Resilience Among Iñupiat of Arctic Alaska. *Geographical Review*, 107(1), 159–184.
<https://doi.org/10.1111/j.1931-0846.2016.12219.x>
- Sakakibara, C. (2020). *Whale Snow: Iñupiat, Climate Change, and Multispecies Resilience in Arctic Alaska*. The University of Arizona Press.
- Sakakibara, C., & Ahtuanguaruak, R. (2021). “We are torn about our future”: Big Oil and Iñupiaq community health in Arctic Alaska. In *Cold Water Oil*. Routledge.
- Salee, A., Rasoolimanesh, S. M., & Kusumo, C. M. L. (2022). Tourism impacts on destinations: Insights from a systematic review of literature. *APJIHT*, 11(1), 121–148.
- Salim, E., Mayer, M., Sacher, P., & Ravanel, L. (2023). Visitors’ motivations to engage in glacier tourism in the European Alps: Comparison of six sites in France, Switzerland,

- and Austria. *Journal of Sustainable Tourism*, 31(6), 1373–1393.
<https://doi.org/10.1080/09669582.2022.2044833>
- Salim, E., & Ravanel, L. (2023). Last chance to see the ice: Visitor motivation at Montenvers-Mer-de-Glace, French Alps. *Tourism Geographies*, 25(1), 72–94.
<https://doi.org/10.1080/14616688.2020.1833971>
- Schlingmann, A., Graham, S., Benyei, P., Corbera, E., Martinez Sanesteban, I., Marelle, A., Soleymani-Fard, R., & Reyes-García, V. (2021). Global patterns of adaptation to climate change by Indigenous Peoples and local communities. A systematic review. *Current Opinion in Environmental Sustainability*, 51, 55–64.
<https://doi.org/10.1016/j.cosust.2021.03.002>
- Schmuland, A. (2023, January 24). *Libraries, Archives, Museums: Journalism primary sources: UAF Rasmuson Library, APRCA Alaska Film Archives*. Alaska State Library. Statewide Library Electronic Doorway.
<https://lam.alaska.gov/c.php?g=1290499&p=9476278>
- Sem, J., & Goff, P. (1996). *North Slope Borough Visitor Profile*. Arctic Development Council, Inc.
- Sharp, L. (2018). Embodied cartographies of the unscene: A feminist approach to (geo)visualising film and television production. *NECSUS: An International Journal of the European Network for Cinema and Media Studies*, 72(2), 161–181.
- Sharpley, R. (2014). Host perceptions of tourism: A review of the research. *Tourism Management*, 42, 37–49. <https://doi.org/10.1016/j.tourman.2013.10.007>

- Shaw, R. M., Howe, J., Beazer, J., & Carr, T. (2020). Ethics and positionality in qualitative research with vulnerable and marginal groups. *Qualitative Research*, 20(3), 277–293. <https://doi.org/10.1177/1468794119841839>
- Sheldon, P. J., Var, T., & Var, T. (1984). Resident attitudes to tourism in North Wales. *Tourism Management*, 5(1), 40–47. [https://doi.org/10.1016/0261-5177\(84\)90006-2](https://doi.org/10.1016/0261-5177(84)90006-2)
- Shiva, V. (2023). Women and Vanishing Waters. In *Foundations of Socio-Environmental Research: Legacy Readings with Commentaries* (pp. 549–557). Cambridge University Press.
- Šimková, E., & Holzner, J. (2014). Motivation of Tourism Participants. *Procedia - Social and Behavioral Sciences*, 5th World Conference on Psychology, Counseling and Guidance, WCPCG-2014, 1-3 May 2014, Dubrovnik, Croatia, 159, 660–664. <https://doi.org/10.1016/j.sbspro.2014.12.455>
- Sisneros-Kidd, A. M., Monz, C., Hausner, V., Schmidt, J., & Clark, D. (2019). Nature-based tourism, resource dependence, and resilience of Arctic communities: Framing complex issues in a changing environment. *Journal of Sustainable Tourism*, 27(8), 1259–1276. <https://doi.org/10.1080/09669582.2019.1612905>
- Slater, T. (2019). Agnotology. In *Keywords in Radical Geography: Antipode at 50* (pp. 20–24). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781119558071.ch3>
- Soutar, C., & Wand, A. P. F. (2022). Understanding the Spectrum of Anxiety Responses to Climate Change: A Systematic Review of the Qualitative Literature. *International Journal of Environmental Research and Public Health*, 19(2), Article 2. <https://doi.org/10.3390/ijerph19020990>

- State of Alaska. (2024). *Utqiagvik (formerly Barrow), AK | Things to do, Recreation, & Travel Information | Travel Alaska*. Travel Alaska.
<https://www.travelalaska.com/Destinations/Cities-Towns/Barrow-Utqiagvik>
- Stenport, A. W., & Vachula, R. S. (2017). Polar bears and ice: Cultural connotations of Arctic environments that contradict the science of climate change. *Media, Culture & Society*, 39(2), 282–295. <https://doi.org/10.1177/0163443716655985>
- Stewart, E. J., Welling, J., Espiner, S., & Wilson, J. (2017). Comparing Motives of Glacier Tourists to Westland Tai Poutini National Park, New Zealand and Vatnajökull National Park, Iceland. In *CAUTHE: 27th: 2017* (pp. 592–597). Department of Tourism, University of Otago.
- Stirling, I., & Derocher, A. E. (2012). Effects of climate warming on polar bears: A review of the evidence. *Global Change Biology*, 18(9), 2694–2706. Scopus.
<https://doi.org/10.1111/j.1365-2486.2012.02753.x>
- Stoler, A. L. (2011). Colonial Aphasia: Race and Disabled Histories in France. *Public Culture*, 23(1), 121–156. <https://doi.org/10.1215/08992363-2010-018>
- Suhud, U., Mamoon, A., & Willson, G. (2021). The Relationship between Push-Pull Motivation, Destination Image, and Stage of Visit Intention: The Case of Belitung Island. *International Journal of Hospitality and Tourism Systems*, 14(1), 9–20.
- Tamasiga, P., Mogomotsi, P. K., Onyeaka, H., & Mogomotsi, G. E. J. (2024). Amplifying climate resilience: The impact of social protection, social cohesion, and social capital on public support for climate change action. *Sustainable Environment*, 10(1), 2361568. <https://doi.org/10.1080/27658511.2024.2361568>

- Teeroovengadum, V., & Nunkoo, R. (2018). Sampling Design in Tourism and Hospitality Research. In *Handbook of Research Methods for Tourism and Hospitality Management* (pp. 477–488). Edward Elgar Publishing.
- Telbisz, T., Mari, L., Gessert, A., Dická, J. N., & Gruber, P. (2022). Attitudes and perceptions of local residents and tourists – a comparative study of the twin national parks of Aggtelek (Hungary) and Slovak Karst (Slovakia). *Acta Carsologica*, 51(1), Article 1. <https://doi.org/10.3986/ac.v51i1.10683>
- The Secretary of the Interior. (2021, January 19). *SO 3392—Local Participation in Commercial Polar Bear Viewing Services in the Arctic National Wildlife Refuge and Other Commercial Visitor Services in Alaska Conservation System Units* [Document: Secretary’s Order]. <http://www.doi.gov//document-library/secretary-order/so-3392-local-participation-commercial-polar-bear-viewing-services>
- Tran, J., Divine, L. M., & Heffner, L. R. (2021). “What are you going to do, Protest the Wind?”: Community Perceptions of Emergent and Worsening Coastal Erosion from the Remote Bering Sea Community of St. Paul, Alaska. *Environmental Management*, 67(1), 43–66. <https://doi.org/10.1007/s00267-020-01382-6>
- Trout, L., Wexler, L., & Moses, J. (2018). Beyond two worlds: Identity narratives and the aspirational futures of Alaska Native youth. *Transcultural Psychiatry*, 55(6), 800–820. <https://doi.org/10.1177/1363461518786991>
- Tse, S., & Tung, V. W. S. (2022). Measuring the Valence and Intensity of Residents’ Behaviors in Host–Tourist Interactions: Implications for Destination Image and Destination Competitiveness. *Journal of Travel Research*, 61(3), 565–580. <https://doi.org/10.1177/0047287521997576>

- Ugar, E. T. (2023). The Fourth Industrial Revolution, Techno-Colonialism, and the Sub-Saharan Africa Response. *Filosofia Theoretica: Journal of African Philosophy, Culture and Religions*, 12(1), 33–48. <https://doi.org/10.4314/ft.v12i1.3>
- UIC Science. (2019, October 3). *Science logistics support in the Arctic* | UIC Science. <https://uicalaska.com/our-companies/uic-science-llc/>
- Unangst, M. (2023). (De)Colonial historical geography and historical GIS. *Journal of Historical Geography*, 79, 76–86. <https://doi.org/10.1016/j.jhg.2022.12.003>
- University of Alaska Fairbanks. (n.d.). *Ronald Brower, Sr.* Project Jukebox | Digital Branch of the University of Alaska Fairbanks Oral History Program. <https://jukebox.uaf.edu/p/2236>
- Untersteiner, N., Thorndike, A. S., Rothrock, D. A., & Hunkins, K. L. (2007). AIDJEX Revisited: A Look Back at the U.S.-Canadian Arctic Ice Dynamics Joint Experiment 1970–78. *ARCTIC*, 60(3), 327–336. <https://doi.org/10.14430/arctic233>
- Upadhyay, J. (2025). Abject Reflections: Representation of Breasts and Reimagining of Gender in the Artworks of Kara Inez and Suzanna Scott. *Studies in Gender and Sexuality*, 26(3), 256–279. <https://doi.org/10.1080/15240657.2025.2532268>
- URS Corporation. (2005). *North Slope Borough Comprehensive Plan* [Comprehensive Plan]. North Slope Borough.
- U.S. Census Bureau. (2020). *Utqiagvik city, Alaska*. <https://data.census.gov/cedsci/profile?g=1600000US0281920>
- Vareiro, L., & Mendes, R. (2019). Travel motivations of the residents of Guimarães. *PASOS. Revista de Turismo y Patrimonio Cultural*, 17(4), 643–653. <https://doi.org/https://doi.org/10.25145/j.pasos.2019.17.046>

- Varnajot, A., & Saarinen, J. (2021). ‘After glaciers?’ Towards post-Arctic tourism. *Annals of Tourism Research*, 91, 1–3. <https://doi.org/10.1016/j.annals.2021.103205>
- Vedoà, M. (2024). Revealing the administrative history of Milan through historical GIS technologies. *Proceedings of the 45th International Conference of Representation Disciplines Teachers*, 3831–3838.
- Viken, A., & Müller, D. K. (2017). *Tourism and indigeneity in the Arctic.: Tourism and Cultural Change 51*. Channel View Publications.
<https://www.cabdirect.org/cabdirect/abstract/20173178157>
- Vogel, B., & Bullock, R. C. L. (2021). Institutions, indigenous peoples, and climate change adaptation in the Canadian Arctic. *GeoJournal*, 86(6), 2555–2572.
<https://doi.org/10.1007/s10708-020-10212-5>
- Vynne, C., Dovichin, E., Fresco, N., Dawson, N., Joshi, A., Law, B. E., Lertzman, K., Rupp, S., Schmiegelow, F., & Trammell, E. J. (2021). The Importance of Alaska for Climate Stabilization, Resilience, and Biodiversity Conservation. *Frontiers in Forests and Global Change*, 4. <https://doi.org/10.3389/ffgc.2021.701277>
- Wartmann, F. M., & Purves, R. S. (2018). Investigating sense of place as a cultural ecosystem service in different landscapes through the lens of language. *Landscape and Urban Planning*, 175, 169–183. <https://doi.org/10.1016/j.landurbplan.2018.03.021>
- Wells, R. D. (1969, September 1). *The Naval Arctic Research Laboratory*. U.S. Naval Institute. <https://www.usni.org/magazines/proceedings/1969/september/naval-arctic-research-laboratory>

- Wenzel, G. W. (2009). Canadian Inuit subsistence and ecological instability—If the climate changes, must the Inuit? *Polar Research*, 28(1), 89–99.
<https://doi.org/10.1111/j.1751-8369.2009.00098.x>
- West, P. (2008). Tourism as Science and Science as Tourism: Environment, Society, Self, and Other in Papua New Guinea. *Current Anthropology*, 49(4), 597–626.
<https://doi.org/10.1086/586737>
- Whitworth, W., & Ayers, O. (2022). Mapping Black London in World War II: A staged approach to digital spatial history. *Digital Scholarship in the Humanities*, 37(4), 1339–1357. <https://doi.org/10.1093/llc/fqab085>
- Wildlife Management. (2024). *Common Mammals of the North Slope*. Official Website of the North Slope Borough. <https://www.north-slope.org/departments/wildlife-management/other-topics-of-interest/common-mammals-of-the-north-slope/>
- Wilk, K. (2024). Feminist Film Theory: The Impact of Female Representation in Modern Movies. *Studia Humana*, 13(4), 13–22. <https://doi.org/10.2478/sh-2024-0021>
- Wolfe, K., & Hsu, C. H. C. (2004). An Application of the Social Psychological Model of Tourism Motivation. *International Journal of Hospitality & Tourism Administration*, 5(1), 29–47. https://doi.org/10.1300/J149v05n01_02
- Woods Hole Oceanographic Institute. (n.d.). *Beaufort Gyre Exploration Project | History | US Drifting Stations*. https://www.whoi.edu/beaufortgyre/history/history_usdrift.html
- Zavattaro, S. (2019). Using Feminist Geography to Understand Feelings of Safety and Neighborhood Image. *Journal of Health & Human Services Administration*, 42(2), 167–205.