# Mining and Climate Change Vulnerability: A Case Study of the Tłı̨chǫ

by

Lucas Schmaus

A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Science

in

Risk and Community Resilience

Department of Resource Economics and Environmental Sociology
University of Alberta

## Abstract

Indigenous self-determination in the Canadian North has and continues to be limited by the extractive and disempowering political economy of the mining industry. This thesis reports a community-based participatory research study which evaluates the perceptions of a sample of residents a group of northern Indigenous communities to the combined impacts of extractive resource development and climate change through individual semi-structured interviews with mine workers, Elders, and local government officials. The Tłı̨chǫ, Dene peoples residing in the Northwest Territories have built capacities, but self-determination continues to be challenged by historical and ongoing colonialism, including the unequal recognition of Indigenous rights, the social and environmental impacts of industrial development and most recently, the impacts of climate change. Taking a political economy focussed approach to vulnerability, this research finds that for the Tłı̨chǫ, self-determination continues to be limited by the impacts of industrial development, which structurally limits the political and financial capacities of Tłı̨chǫ people and thereby increases the pressures of assimilation and cultural erasure. Critically, industrial development remains fundamentally colonial as it demands ongoing access to Indigenous lands and resources. Ongoing colonialism and socioeconomic marginalization in turn exacerbates vulnerability to climate change. Yet, despite the paternalistic relationship between the state of Canada and the Tłı̨chǫ, they have revitalized their culture and made strides towards self-determination. Despite lacking many of the traditional capacities associated with climate resilience, the Tłı̨chǫ have unique strengths that may facilitate adaptivity.

## Preface

This thesis is an original work by Lucas Schmaus. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name “Advancing Impact Assessment for Canada's Socio-Ecological Systems.”, Pro00121714.

## Acknowledgments

I have had the good fortune to have been supported by some great mentors throughout this research. First, thank you to Debra Davidson, John Parkins, and Kevin Jones. I am grateful for the time and energy you have spent reviewing this work and challenging me to continue improving. Thanks also to my fellow graduate students for their help in refining ideas, and thanks to my family, friends, and partner for their support and generosity. I would also like to acknowledge the funding received from the Social Sciences and Humanities Research Council of Canada and the Impact Assessment Agency of Canada. Thank you to our Tłı̨chǫ research partners who made this research possible. Lastly, thank you to all participants for sharing your time and stories. I am thankful for having a chance to get to know you.

# Table of Contents

# Chapter 1- Introduction

Coping with climate change will be one of the defining challenges of the 21st century and beyond. Efforts at emissions mitigation have had little to no effect so far and temperature rises are locked-in to warming due to historical emissions (Overland et al., 2019). In northern regions, adapting to climate change is especially pressing as impacts are likely to be more rapid and severe given a projected three to six degrees increase in warming if the global average is limited to two (Box et al., 2019), while infrastructure and socioeconomic systems are uniquely vulnerable (Ford et al., 2021).

Despite geographically unique climate risks, many argue the key to understand climate change vulnerability in the Canadian north is to understand the nature of northern social and economic systems (Ford et al., 2021). Food systems, road and air transport, electrical grids and housing are considerably more fragile than in most of the rest of Canada due to chronic underinvestment (Clark et al., 2022). Moreover, economies in the north are relatively highly dependent upon resource extraction (Vogel & Bullock, 2020), an industry dependent on infrastructure which is vulnerable to the physical consequences of climate change (Clark et al., 2022; Steenberg et al., 2019). Additionally, research continues to show how resource extraction is often correlated with a host of social problems (Parlee, 2015; Sachs and Warner, 2001). Historically, companies engaged in resource extraction activities have tended to offer limited benefits to local people, while imposing substantial social and environmental impacts (Franks et al., 2014). These effects appear to be especially pronounced for Indigenous peoples who are at the forefront of many resource extraction projects in the north (Kulchyski, 2015; Whyte, 2016).

For Indigenous peoples, adapting to climate change is likely to be constrained by the structural inequalities that continue to plague Indigenous-settler relationships (Kulchyski, 2015).

While prolonged struggles against assimilation and cultural genocide have made gains, many argue contemporary efforts at reconciliation are inadequate to the true goals of anticolonial struggle: recognition of the equal status of Indigenous nations, the repatriation of traditional lands, and reparations adequate to enable Indigenous nations to build distinct, self-determined futures (Alfred, 2001). While a set of cultural and land rights have been granted to many Indigenous groups across Canada (Coulthard 2014), I argue these have been granted only to the extent that power given does not challenge the supremacy of the colonial settler-state of Canada and the ongoing access to Indigenous lands and resources. One result of contemporary neo-colonialism, as exemplified by extractive industry on Tłı̨chǫ lands, is that the vulnerability of Indigenous peoples to the impacts of climate change is elevated.

## Purpose

The overall objective of this study is to understand how two key forces—climate change and resource extraction, in the context of colonialism, have and continue to shape the communities and environment of the Tłı̨chǫ people, and what future outcomes are possible in the context of a rapidly changing physical climate and evolving socioeconomic landscape. As vulnerability to climate change encompasses both biophysical hazard and adaptative capacities, analysis of historical and present forces shaping human systems will be crucial to uncovering the context in which change is occurring, as well as the agency the Tłı̨chǫ possess. From this starting point, social learning, and meaningful ways to further the goals of climate resilience and self-determination more broadly will emerge. Formal research questions are as follows:

1. What impacts of climate change and mining have been observed by Tłı̨chǫ peoples?

2. What opportunities and challenges do Tłı̨chǫ peoples foresee in responding to climate change and changing patterns of industrial development to pursue future community wellbeing?

## Research Objectives

The initial stage of this research provided an opportunity to explore very broad and open-ended questions. Initial objectives were to contribute to an understanding of the perspectives surrounding climate change and mining development that Tłı̨chǫ residents held. Given the mandates for reconciliation between Indigenous peoples and settlers, new legislation being passed governing impact assessment, and pressures to adapt to climate change, resource extraction in the north is a topic of significant interest. The research was guided by the following objectives:

1) To contribute to the sociological understanding of resource development by documenting the unique social and environmental impacts of development in the north.
2) To understand perspectives on climate change and its impacts at a community-level.
3) To delve into the deeper meanings that Indigenous people associate with resource development, including differences in perspectives regarding the costs and benefits of resource extraction.

## Significance

While there is increasing recognition about the rapidity and severity of climate and industrial impacts facing Arctic communities, research on societal aspects of Arctic change remain the

"poor cousin" (Ford et al., 2021) of work focusing on natural systems. This obfuscates meaningful action, as climate change is embedded in complex interactions with non-climatic factors that determine climate resilience, vulnerability, and the effectiveness of adaptation options (Ford & Smit, 2004; Jorgenson et al., 2019). Despite this, non-climatic factors are often treated as being of secondary concern in much of the literature on climate risk and adaptivity (Naylor et al., 2020). The result is a narrow focus on the nature of climate change, which limits the potential of research to fully account for the key drivers of change, and the ways those drivers intersect with the impacts of industrial development. Illustrative of this trend, northern research primarily focuses on the direct impacts of climate change from regional changes rather than those arising from transmission mechanisms from outside the north (i.e., transboundary risk), with few studies examining how socioeconomic factors will affect future risks and adaptation options (Ford et al., 2021). In depth analysis focusing on chains of causation, the role of power, the social and historical construction of risk, evolution of vulnerability/resilience over time, and whether there are "tipping points" in human systems (Nuttall, 2012), are generally lacking. While clearly interlinked, non-climatic factors often change more rapidly than the physical climate, affecting the structure and function of societies and thus how they experience and respond to change. Prioritizing climate as the starting point hides community priorities and diverts attention away from underlying structural factors affecting northern communities (Huntington et al., 2019; O'Brien et al., 2007).

In response, there have been calls to reframe Arctic climate change research to better capture the complex interactions between climatic and non-climatic factors that determine how climate change is experienced, understood, and responded to (e.g., Forbes & Stammler, 2009; Ford, McDowell, & Pearce, 2015; Huntington et al., 2019). Underpinning many of these claims is the

need to move away from top-down approaches that prioritize scientific perspectives of research priorities (Ford et al., 2021). Such an approach can provide a foundation from which climate change can be understood as one of multiple interacting stressors affecting the circumpolar north; sharpen focus on the complexities of human–environment relationships (and how they evolve and change over time); direct attention to often overlooked priorities for communities around health, well-being, and loss; and finally, can uncover the root causes of vulnerability to change, thereby linking climate policy to broader policy goals. Reframing Arctic climate change research will be challenging, but the rapidity of Arctic change adds urgency to such efforts.

Vulnerability research in the Arctic has been criticized on multiple grounds. Ford et al. (2018) reviews areas of neglect that vulnerability assessments have been criticized for: neglect of social drivers, static pictures of human-environment interaction, vagueness about the concept of vulnerability, neglect of cross-scale interactions, passive and negative framing, limited influence on decision-making, and limited collaboration across disciplines. Overall, shortcomings have limited the effectiveness of research in the Canadian north to improve outcomes for communities facing change. Using local perspectives as a starting point is a major strength of community-based research, and this project will address the potential for agency for communities affected by climate change, avoiding a deterministic picture of unavoidable calamity. It will also place front and center local values, which will aid in determining the feasibility of adaptation actions, as well as those desired by locals. Given the urgency of climate change in the Arctic, adaptation so far can only be seen as lackluster. For example, while adaptation has been occurring for some time at the local-level, Canosa et al. (2020) note more than half of all adaptations were in the subsistence harvesting sector, leaving questions about whether social and economic systems—now largely based on natural resource extraction—are adapting sufficiently. Overall, Canosa et

al. (2020) notes incremental adaptation is occurring, yet the rapid transformational adaptation a quickly warming Arctic demands is largely lacking.

One of the most relevant and yet unaddressed areas is the economic adaptation to climate change, as many northern communities remain heavily dependent on resource extraction which require substantial infrastructure that is vulnerable to climate impacts (Steenberg et al., 2019). Interviews with community members can reveal local perceptions of what likely and desirable economic futures look like in the context of climate change. This is especially critical to do through the under researched lens of Indigenous communities (Myette & Riva, 2021), whose lands are staked for many future natural resource development projects (Parlee, 2015) and whose voices remain problematically underrepresented in climate change adaptation research (Ford et al., 2021). The type and health of a local economy is closely linked with many capacities thought to facilitate adaptation to climate change (Ford et al., 2021; Jorgenson et al., 2021).

A common purpose of adaptation analyses in the climate change field is to estimate the degree to which modeled impacts of climate change scenarios could be moderated by adaptation to the impacts (Mendelsohn et al., 2000). The Tłı̨chǫ, living amidst the oppressive legacies of colonialism and uncertainty of the future role natural resource extraction will play in their economy, offer a unique opportunity to evaluate the impacts and benefits of natural resource extraction projects. It is also an opportunity to contribute to the literature on community resilience which will be critical to communities facing the challenges of climate change (Berkes and Ross, 2013; Davidson, 2010). Perhaps more importantly, renewed calls for justice for Indigenous peoples at the national level—i.e., in response to the findings of the Truth and Reconciliation Committee (2015)—in combination with international agreements such as the United Nations Declaration on the Rights of Indigenous Peoples (2017) and the Paris Agreement

(2015), demonstrate the urgent need to explore what Indigenous communities in northern regions—who have done little to create climate change yet will experience the greatest increase in average temperatures of any region globally this century (Box et al., 2019)—perceive as necessary to adapt effectively.

While the dangers are significant, opportunity exists to substantially improve how Arctic communities may respond to climate change. Vulnerability is a function of exposure to hazard and adaptive capacity (Ford and Smit, 2004), therefore strengthening adaptive capacity is critical as "locked in" climate change ensures significant warming will be experienced by Arctic communities (Overland et al., 2019). These trends are expected to continue or accelerate even if global warming is limited to 1.5℃ or 2℃ (Hoegh-Guldberg et al., 2018), with the probability of catastrophic impacts substantially increasing if warming globally exceeds 1.5℃. Supporting adaptive capacity in the Arctic is also an ethical imperative for a nation reckoning with its violent colonial history (Whyte 2016). Despite clear risks being acknowledged for decades (Jodoin et al., 2020), there is little evidence of transformational adaptation taking place. A lack of transformative change extends to the human–environment system associated with resource extraction (Canosa et al., 2020). Simply, adaptation research too often tends to focus on rearranging deck chairs and ignores transformative social change (Canosa et al., 2020). For example, adaptation research has yet to address the likelihood that many planned natural resource extraction projects are impossible if Canada is to meet the goals of the Paris agreement (Steenberg et al., 2019). The complex socioecological consequences of this have yet to be fully explored, but likely entail a fundamental reimagining of many Arctic economies (Naylor et al., 2020; Steenberg et al., 2019). Without planning, this will significantly harm Indigenous communities like the Tłı̨chǫ who are highly dependent on mining. If adaptation research is to

meaningfully contribute to addressing the root causes of the risks imposed by climate change in the next century, while simultaneously adapting to the most significant regional warming globally, transformative adaptation and overcoming barriers must become of central importance.

## Limitations

To focus the study and complete it within a reasonable amount of time, the study's scope is limited in several ways. As an exploratory and community-centered study, it does not make any attempt to assess the consistency of observations and perceptions of interviewees with current scientific literature regarding projected risks of climate change for the Tłı̨chǫ region. I also make no attempt to assess the capacities of the Tłı̨chǫ to adapt to climate change, instead focussing on local perceptions of risk and resilience to change. The scope of questions related to mining and self-determination are similar: no attempt is made to compare residents' views with an academic assessment of the mining impacts and potential for self-determination. To fully understand the above issues, a long-term study would be required, beyond the scope of a Master's thesis.

Some methodological limitations also exist. Data collection was limited to two research trips because of the time-constraint on a Master's thesis. Although extensive data collection occurred, there were limits to the length of the secondary review and number of interviews that could be completed. The number of respondents was also limited by availability and in some cases, a language barrier and inability to find a translator. Our sample skewed towards people older than 65, and greater than 50% of respondents were men. Many respondents were women, and several were under 30, therefore this issue is somewhat mitigated, but we were unable to interview those under 18 due to the nature of our ethics agreement, therefore we missed the unique perspectives of young people. We found significant differences in perspectives across age groups based on the

limited data we collected; therefore, this is likely an important avenue to explore in future research. In addition, there were times when participants were uncomfortable being recorded and mentioned they would tell us certain things off the record only. It is possible these sources of data may not reflect the true intentions of relevant actors.

However, as the interviews were conducted with several key representatives of relevant organizations and communities, and the questions were developed after extensive background and exploratory research on key issues in the relevant subject areas, the findings from this research provide a reasonably accurate account of the local perceptions of mining, climate change, and prospects for self-determination that are the primary interest of this study.

The next chapter presents a review of the literature on the impacts of mining and climate change on complex socioecological systems. As resource development is inherently political, the literature review also includes information relevant to past and present relationships between the Tłı̨chǫ (and Indigenous people more broadly) nation and the Canadian state. Lastly, a review of scholarship on climate vulnerability and adaptation is presented.

## Positionality

Working closely with Indigenous research partners and participants led me to constant reflection on my positionality. What was my role and responsibility as a white, male, southern, settler researcher coming from outside of the communities we were working with, with all my preconceived notions of how research should be done, and which questions were important? My interest in this topic was driven by curiosity and concern for how climate change and industrial development are impacting communities at the local level. Even though I consider myself educated and at least somewhat aware of the ongoing impacts of colonialism, I found myself

surprised by the significant cultural differences between Tłı̨chǫ research participants and myself. Firstly, I found my urban background, and even my farming heritage from which I am one generation removed, led me to a different conception of the land and my connection to it. Unlike many research participants I have experienced nature primarily as a place to recreate and protect, with subsistence activities done in specific plots set aside for food production. I also quickly became aware I was a vegetarian in an environment where being a vegetarian is impractical. For these reasons, I was consistently learning to understand how the Tłı̨chǫ saw the land, both in terms of spiritual connection and as the source of food production. Participants were distinctly practical yet saw no distinction between meeting their needs and honoring the sacredness of the land. Adding to the culture shock, Tłı̨chǫ communities remain divided along gender lines, with men traditionally holding positions of power, although this seemed to be changing amongst younger participants.

Next, my ideas of climate change and its role in shaping the future were challenged by participants who saw socioeconomic marginalization and political struggles as the most pressing concern for their community, expressing confidence in their adaptivity regardless of the magnitude of the challenge climate change will present. I was constantly reminded that seeing climate change as an urgent environmental problem was only one perspective.

Participants were wary of being questioned, an attitude I understood as a product of the problematic history of settler-Indigenous relationships. As an example, several participants questioned if we were there to open a new mine, something they had apparently learned to associate with outsiders showing up in their communities. However, throughout my research I was thankful for the generosity of all participants in sharing their stories, and their heartfelt concern for future generations. Overall, I found participants stories added to my understanding of

colonialism, resource development and the environment in ways I could not have predicted and thus challenged my own ideas in critical and productive ways.

## Overview

This monograph-style thesis is organized into seven chapters. This chapter is an introductory chapter and Chapter 7 is a conclusion chapter. Chapter 2 provides a comprehensive literature review of a broad range of relevant social research covering the politics of mining economies, social and environmental impacts of resource extraction, and climate change impacts and adaptation. The dynamics of settler-Indigenous political and economic relations provide an opportunity to explore the broader context in which climate change adaptation and future socioeconomic planning discussions are situated. Chapter 3 presents a description of the case, including relevant historical and contemporary political, economic and climate context. Chapter 4 lays out the methodology used to describe the case, from exploratory scoping research to the nuances of culturally sensitive primary research. Chapter 5 presents the results from interviews and secondary research. The basic guiding questions for Chapter 5 are:

1) What effects has mining had on Tłı̨chǫ wellbeing? How have relationships with industry and government evolved over time?

2) What effects of climate change have been observed by Tłı̨chǫ peoples? Do the Tłı̨chǫ feel capable of coping with climate impacts?

3) What does an ideal future look like for the Tłı̨chǫ people?

Chapter 5 offers an understanding the impacts of mining and climate change on the complex socioecological system the Tłı̨chǫ inhabit. We found visions of the future are diverse, contested, and shaped by many factors including Tłı̨chǫ -state relations, the social impacts of development, perceived economic opportunities, and a desire to maintain Tłı̨chǫ culture.

Chapter 6 presents a discussion of the results of the study, delving deeper into the relationship between the colonial resource extraction economy and Tłı̨chǫ wellbeing. The chapter elaborates upon how structural inequalities in the political and economic relationships between industry/state actors and the Tłı̨chǫ constrain self-determination—with growing implications for climate change vulnerability. Using the frame of the "colonial politics of recognition" as articulated by Glen Coulthard in *Red Skin, White Masks* (2014) this chapter argues the recognition of Indigenous rights by the state as practiced today may limit the efforts of the Tłı̨chǫ to achieve self-determination. This is especially true in regions characterized by resource extraction, where the state has a vested interest in limiting Indigenous self-determination to maintain access to lands and resources. By demanding ongoing access to Tłı̨chǫ lands and resources while simultaneously perpetuating the socioeconomic marginalization of the Tłı̨chǫ, mining development deters the development of alternative political economies. Due to the structural inequalities inherent in these relationships, it is not enough for the state to 'grant' a limited set of cultural rights of Indigenous nations and expect marginalization to evaporate. For example, the land claim that the Tłı̨chǫ settled in 2005 is insufficient on its own to enable Tłı̨chǫ to cultivate locally desired economies outside of capitalist-settler markets, and thus a continual dependence upon the mining economy restricts the agency of the Tłı̨chǫ. Of course, it is vital to situate this research in the context of the already present colonial assimilation and development, and in the pre-existing identity of Tłı̨chǫ peoples—true reconciliation demands the state

recognizes Indigenous nationhood in a meaningful way. Chapter 7, finally, is a summary conclusion chapter, suggesting future avenues for research.

## Chapter 2- Literature Review

This chapter summarizes a large body of research that guided this thesis. The following section provides a review of the literature in settler-colonial and Marxist theory. Following this are sections on (under-)development and resource extraction, as well as climate change impacts and adaptation.

There is an immense body of literature on settler-Indigenous relationships. Scholars in this area come from history, native studies, sociology, political studies, and anthropology. For this thesis project, settler-Indigenous history and contemporary politics surrounding natural resource extraction—and thus, access to Indigenous lands—were of particular interest. As the case study takes place in the Northwest Territories, where the initial and ongoing interest of the state is to exploit the natural resources of the region, the specific character of the political economy—defined here as economic systems and their governance (Hacker et al., 2021)—of resource extraction is of interest. The drive for access to land and resources is common to the projects of colonialism and capitalism, and this analysis argues neither can exist without the other, therefore this literature review considers scholarship examining the social relations constitutive of both colonialism and capitalism to examine the political economy of resource extraction in the north. Specifically, to illustrate the macro-theoretical context of resource extraction, a brief discussion of some Marxist and colonial theory is presented.

Following this, the literature on contemporary Indigenous-settler politics is reviewed. This body of literature focusses on how well Indigenous rights are respected by federal government policy, including the granting of land claims and cultural rights. The literature strongly suggests that Indigenous self-determination is limited by the unequal nature of their relationship with the federal government; hence, this literature review also describes some of the critiques discussing

contemporary Canadian-Indigenous policy frameworks. Lastly, a brief discussion of the predicted impacts of climate change, as well as terminology related to climate change adaptation are discussed. Rather than focussing on climate change as primarily creating biophysical damages, I focus on the potential for adaptation for Indigenous peoples in the north, and how this may be constrained by the political economy of resource extraction.

## Settler Colonialism

Settler-colonial relationships are characterized by the domination of the colonized by settlers, wherein power is organized into a hierarchy of social relations that facilitate dispossession of Indigenous peoples of their lands and capacities for self-determination (Coulthard, 2014, p.7). Historically, domination has occurred through violence and deception, but it is argued by some that more recently negotiations have accomplished the same goals through different means—to maintain ongoing access to land and resources. Indigenous lands are the foundation of the formation of the Canadian state, settlement, and capitalist development (Wolfe, 2006). In this light, we can understand colonialism not as a 'thing', but rather, the sum of the interlocking oppressive social relations that constitute it (Coulthard, 2014, p. 15).

In *Red Skin, White Masks* (2014), Dene scholar Glen Coulthard makes the argument that in the Canadian context, colonial relations of power are no longer reproduced primarily through overt violence, but rather through the asymmetrical exchange of mediated forms of state recognition and accommodation. As a result, a fundamental power imbalance structures Indigenous-settler relationships across Canada. In the Northwest Territories, the federal government retains cavalier, exploitative access to Indigenous lands and resources (Kulchyski, 2015). Resource extraction dominates northern economies today and remains a key strategic

asset for the Canadian state, therefore the need to limit Indigenous sovereignty to ensure access to these lands and resources remains despite the settlement of land claims and expansion of Indigenous cultural rights (Kulchyski, 2015).

Coulthard (2014) is critical of contemporary settler-Indigenous relationships, which he calls the "colonial politics of recognition", a term referring to the stance taken by the Canadian state that injustices are located firmly in the past and can be effectively reconciled through the granting of Indigenous rights by the state. Based on evidence from political discourse in the past 20 years, it appears the federal government believes that through recognition of past harms and acknowledgement of the special rights of the first peoples of Canada, relationships with Indigenous peoples can be repaired. For Coulthard (2014, p.51), this attitude is inattentive to a sociological understanding of power: when there is a structural inequality between two partners in an agreement (such as land claims and what constitutes Indigenous rights), the terms of accommodation end up determined by the interests of the hegemonic partner (Lukes, 2004).

For example, the settlement of land claims has historically been controlled by the state, involving the release and surrender of Aboriginal rights through the 1970s (Dene/Metis Claims Secretariat, 1986 as cited in Coulthard, 2014, p.75). When opposition to this arose in the mid-1970s, the territorial and federal government defended an apolitical discourse of Indigenous "cultural rights" within the land-claims process that it used to rationalize the hegemony of non-Indigenous economic and political interests on Dene territory (Coulthard, p. 67). In the words of Northwest territories government officials at the time, negotiations centered around cultural rights, not political rights "as far as they can be reconciled with predominantly private mode of enterprise" (Keith and Wright, 1978, p.259). Nowadays, formal extinguishment of rights is no longer required, but incorporation of Indigenous people into the capitalist mode of production

and stamping out of alternative socioeconomic visions that could threaten the functioning of the market economy still occurs in practice (Alfred, 2005; Kulchyski, 2015). As Alfred (2005, p.58) argues, in modern times "oppression has become increasingly invisible; [it is] no longer constituted in conventional terms of military occupation, onerous taxation burdens, blatant land thefts… but rather through a fluid confluence of politics, economics, psychology and culture". Crucially, such diffuse sources of power are harder to pin down and resist, adding to the continued position of power of hegemonic interests (Lukes, 2004).

The historical evolution of state attitudes explains why Coulthard (2014) argues that recognition is now the field of power through which colonial relations are produced and maintained. For example, the discourse of sustainability has been used to justify development previously considered fundamentally unethical (Kirsch, 2007). Moreover, land claims lead to significant debt traps for many Indigenous individuals and communities (Gordon, 2009), increasing the pressure to assimilate into settler economies. More subtly, land-claims processes have changed how Indigenous peoples think and act in relation to the land. Coulthard (2014, p.78) argues we have seen "a reorientation of Indigenous struggle from one that was once deeply informed by the land as a system of reciprocal relations and obligations (grounded normativity), which in turn informed our critique of capitalism in the period examined above, to a struggle that is now increasingly for land, understood now as material resource to be exploited in the capital accumulation process." (Coulthard, 2014, p. 78). Indigenous struggles have thus become increasingly framed in colonial terms.

## Primitive Accumulation

The primary goal of colonialism is to gain land and resources to fuel capitalistic modes of production, and understanding the material drive behind colonial relations is critical to understanding settler-Indigenous politics. Marxist literature offers insight into the drive for land and resources in capitalist societies and "to understand the world in which we live… in which power is structured by ownership" (Menzies, 2010). Especially pertinent for colonial contexts such as the Canadian north is Marx's theory of primitive accumulation (Glassman, 2006). The primitive accumulation thesis argues that capitalism required an original surplus, which was acquired by "divorcing the producer from the means of production… [transforming] the social means of production into capital… and the immediate producers into wage laborers" (Marx, 2004, p.714). The violent theft of lands, known as dispossession, took place through different routes in different contexts: laws of enclosure in England which impeded people from subsistence farming of the commons (De Angelis, 2001), or alternatively, dispossession occurred via colonial expansion as in North America. Regardless of how people became dispossessed, the outcome is disconnection from traditional lands—lands now placed in service of production, and often quickly degraded and less able to support traditional lifestyles—and forced to become wage-laborers. Dispossession, followed by proletarianization, whereby Indigenous, peasant and other self-sufficient agricultural producers are torn off their lands and forced to join a new class of laborers as they enter the labor market to survive (Harvey, 2017).

Coulthard (2014, p.10) agrees that primitive accumulation is insightful, but argues that in Indigenous contexts it is more appropriate to shift analysis from the capital relation to the colonial relation, as Marx generally focussed on "the waged male proletariat in the process of commodity production" (Federici, 2004). This overcomes key historical and theoretical limitations to Marx's primitive accumulation thesis: how it places dispossession in the past and

ignores the ongoing theft of Indigenous lands (Harvey, 2017), as well as the normative developmentalism through which Marx often seemed to view history—that capitalism is a necessary phase for societies to pass through, before a worker's revolution leads to a communist utopia (Marx, 2005, p. 409-10). Analyzing the colonial relation is also intersectional, ecologically attentive, and avoids reducing the complexity of colonial relations to economic rationalism (Coulthard, 2014; Federici, 2004).

## Contemporary Settler-Indigenous Politics

Anticolonial scholars have written extensively about how the structural imperatives of a capitalist political economy actively sabotage Indigenous struggles for self-determination. Alfred (2005, p.37) has repeatedly argued that the goal of any traditionally rooted struggle for self-determination should be to protect that which constitutes the "heart and soul of Indigenous nations: a set of values that challenge the homogenizing force of Western liberalism and free-market capitalism; that honor the autonomy of individual conscience, non-coercive authority, and the deep interconnection between human beings and other elements of creation.". This vision has disappeared in the eyes of Coulthard (2014), and he argues that the pressure to assimilate for northern Indigenous communities has effectively erased radical alternative visions of what Indigenous nations can and should be. When Indigenous persons are integrated into capitalist modes of production—as they frequently are in the Canadian north where few economic alternatives exist—the potential for self-determination is diminished.

However, other scholars are more optimistic, arguing that contemporary politics of recognition are fruitful avenues to enable Indigenous sovereignty. Philosopher Charles Taylor (1995) reconciles the contradiction between the needs of state-sanctioned capitalism and

Indigenous self-determination via state redistribution schemes like granting certain cultural rights and concessions to Aboriginal communities through self government and land claims agreements. Likewise, Indigenous scholar Dale Turner (2006) advocates an ethics of participation, arguing if Indigenous peoples seek self-determination, the most effective path forward is "to engage the state's legal and political discourses in more effective ways.". For scholars subscribing to this viewpoint, Indigenous peoples must develop (state-sanctioned) capacities to interject unique perspectives into (state-sanctioned) legal, economic, and political spaces. Yet this branch of scholarship on recognition of Indigenous rights appears to be lacking responses to address the structural features that maintain Indigenous oppression (Blondin, 1990).

From a Marxist perspective, although the granting of Indigenous rights advocated by Turner, Taylor and others may alter the intensity of some of the effects of colonial-capitalist exploitation and domination, it does little to address their generative structures. Rights are still granted by the state to Indigenous people and thus, the legitimacy of the Canadian state's claim to sovereignty, as well as the standing of the state as the appropriate form of government, go unchallenged (Usher, 1993). In the economic sphere, scholarship on the "curse of independence" (Turner, 2006) highlights how Indigenous self-determination is oppressed by market forces that prey upon the vulnerable position Indigenous peoples have been left in due to colonization.

In the northern context, rights and land claim agreements have done little to empower alternatives to natural resource extraction, and economic opportunities remain limited (Cameron, 2012). A dependency on natural resource extraction remains with little in the way of economic alternatives or momentum towards cultivating more sustainable economies (Ford et al., 2021).

Further complicating matters, the insidiousness of capitalism extends to how settler ideology can begin to erase traditional culture. Just as Marx illuminates the materiality of colonial

relations, the work of Frantz Fanon in *Black Skin, White Masks* (2008) considers the psychosocial effects colonization continues to have in shaping Indigenous ways of life. Key to Fanon's (2008) position is how, unwillingly, colonized subjects commit to positions of continued domination. "In situations where colonial rule does not depend solely on the exercise of state violence, its reproduction instead rests on the ability to entice Indigenous peoples to identify, either implicitly or explicitly, with the profoundly asymmetrical and nonreciprocal forms of recognition either imposed on or granted to them by the settler state and society." (Fanon, 2008). For Fanon, the colonized are turned into subjects when the values of colonial society inevitably seep into the colonized (Fanon, 2004). This is based on the premise that humans, as social actors, develop identities dialogically with other actors and the larger world they inhabit. This idea was popularized by Hegel's (2018) notion of master and slave relationships and aligns with empirical findings from social psychology: humans do not develop their identities in isolation, rather they are formed through dialogue, in agreement or struggle with others recognition of us (Tappan, 2005). For Hegel (2018), identity formation occurs in dialogue with others, and this can positively or negatively affect your status as a self-determining agent. Considering the exposure to racism and dehumanizing conditions Indigenous people in colonial societies have been exposed to, Fanon (2008) argues an internalization of inferiority is possible and can have lasting detrimental effects. Colonized people may develop "psycho-affective" (Fanon, 2008) attachments to these modes of recognition; for one, Indigenous peoples could become ideologically attached to the colonial worldview. This theory aligns with Alfred's (2005) more recent observation that struggles for Indigenous rights have increasingly become defined by the values and mechanisms of settler society, losing their distinct anticolonial spirit.

## Resource Extraction and Underdevelopment

The role of resource extraction as a key part of northern Indigenous economies divides researchers as well. Bernauer (2019) sees the history of state-Indigenous relations in Canada as an ongoing process of ensuring that the land and resource theft necessary for industrial production continues to occur. In the 1970's, agreements called "Comprehensive Land Claims" were signed between the Canadian state and Indigenous nations, supposedly to ensure Indigenous communities captured benefits from use of their lands, like rents from resource extraction projects (Kulchyski, 2015). Updated agreements have largely retained this stated objective. Researchers are divided on the impact of these policies, with some emphasizing that monetary benefits can contribute to self determination and cultural revitalization (Slowey, 2008) while others maintain natural resource extraction is inherently unethical as it is based upon dispossession of Indigenous lands (Gordon, 2009). Others have pointed out that the supposed monetary benefits for Indigenous peoples are miniscule compared to those flowing to colonial centers (Whyte, 2016). Most wealth from resource extraction continues to accrue in urban settler communities (Bernauer, 2019), yet policymakers continue to tout natural resource projects as a way for Indigenous communities to develop economically and improve social outcomes (Parlee, 2015). Adding to these concerns, many natural resource projects will likely not fit with climate goals and are vulnerable to the impacts of climate change (Ford et al., 2021; Steenberg et al., 2019), casting further uncertainty on the role such projects will play in the future.

Simultaneously, new socioeconomic impacts have been revealed by research into communities dependent on resource extraction. Sachs & Warner (2001) identify a paradoxical "resource curse" wherein poor economic outcomes plague communities dependent on natural resource extraction. Economic stagnation, worse health outcomes, and lower levels of wellbeing

are found in communities with a heavy reliance on natural resource extraction, with these effects being especially pronounced in Indigenous communities (Parlee, 2015). In communities reliant on resource extraction, the health and wellbeing of Indigenous peoples is impacted through various direct and indirect social-ecological pathways (Myette & Riva, 2021). While pollution and workplace accidents are direct burdens, extraction also has systemic impacts such as changing environmental conditions, affecting access to land, alteration of community and family relations, as well as impacting spirituality, food, housing, education, and economic opportunity (Myette & Riva, 2021). Resource extraction projects are supported by the government of Canada as ways to gain an economic foothold for northern communities, yet it remains an open question whether the benefits of these projects outweigh the costs or are sustainable long-term (Southcott et al., 2022).

From a political angle, despite land claims granting a degree of Indigenous sovereignty in many regions (Anderson et al., 2006), many question whether meaningful inclusion of Indigenous persons in natural resource projects has been achieved, or is even possible, considering the long history of colonialism (Kulychski, 2015; Wolfe, 2006). Notably, Indigenous communities continue to be socio-economically marginalized (Corntassel, 2012), even in resource rich areas often thought to be ripe for “development” (Corntassel, 2012; Parlee, 2015). When natural resources marked for extraction are located on Indigenous lands in the Northwest Territories, adverse socio-economic and ecological effects are often felt by these communities, while benefits tend to accrue elsewhere (O'Faircheallaigh, 1998; Ford et al., 2021). Worryingly, resource extraction has been linked to the erosion of key social and human dimensions of resilience thought to be essential to coping with climate change (Ford et al., 2021)

## Climate Change

Northern regions are undergoing rapid climate change at more than double the global average—with 2.7℃ warming already documented from 1971 to 2017—and is projected to warm more than any other region this century (Box et al., 2019). Sea ice volume has decreased by 75% in the Arctic Ocean since the 1980's (Gerland et al., 2019) and the IPCC estimates that approximately half of this loss is due to anthropogenic emissions, with the other half reflecting internal variability (Meredith et al., 2019). Food system disruptions, increasing disaster losses, and at-risk infrastructure are well-established consequences, but longer growing seasons, new shipping routes opening, and opportunities for economic development show climate change is perceived in diverse ways by different stakeholders (Ford et al., 2021).

Environmental impacts attributed to climate change and mining have significantly impacted Tłı̨chǫ culture, which has deep interconnectivity with the regional landscape. The caribou are a particularly important species for the Tłı̨chǫ, and the Bathurst Caribou herd—one of the largest in the NWT—has declined from approximately 470,000 animals in the mid-1980s to just over 20,000 in 2015 (Chen et al., 2018). The Bluenose-East Caribou herd is another large herd in the NWT, and its population has also declined in recent years from 100,000 animals in the early 2000s to 35,000 animals in 2015 (Boulanger & Adamczewski, 2015). The caribou that remain have shifted northwards, away from their traditional range close to Tłı̨chǫ communities, making hunting difficult. As climate impacts mount, consequences for the Tłı̨chǫ culture that is so closely linked to the land will likely be significant. Infrastructure is susceptible to permafrost thaw and buildings are at risk from erosion, likely foreshadowing the necessary replanning and even relocation of some northern settlements (Vogel & Bullock, 2020).

Yet responses to climate change have so far been limited in their scope and effectiveness (Canosa et al., 2020). Due to continued socioeconomic marginalization the capacities of the Tłı̨chǫ to adapt has been weakened, and underinvestment and poor planning means biophysical consequences are projected to have greater than necessary financial and safety impacts (Ford et al., 2021). For example, mining activities have fragmented the landscape, with declining wildlife populations and the erosion of traditional subsistence hunting activities resulting in many regions (Hall, 2013). Moreover, the negative social impacts of natural resource extraction have compromised the social capacities in the region thought to be essential to adapting to climate change (Barnes et al, 2020; Hall, 2013).

## Resilience, Vulnerability and Adaptation

As the impacts of climate change mount, northern scholars have become interested in adaptation and questioning if development is truly aiding efforts to make northern communities resilient. Adaptation in a social science context refers to "adjustments in a system's behavior and characteristics that enhance its ability to cope with external stress" (Brooks, 2003). When speaking of adaptation to climate change, adapting refers to adjusting to the projected climate and its effects (Sietsma et al., 2021). Adaptations can be anticipatory or reactive and can be analyzed from the level of the individual to global society. Economic, social, and cultural adaptations are common categories of interest. It is commonly agreed upon that adaptation at an individual or community level is constrained by political, economic, and social processes at higher scales (Smit & Wandel, 2006).

Vulnerability refers to the susceptibility to harm in a system relative to a stimulus or stimuli (Ford & Smit, 2004). Formally, vulnerability is a function of exposure of a community to climate-change effects and its adaptive capacity to deal with that exposure:

$$V_{ist} = f(E_{ist}, A_{ist})$$

where $V_{ist}$ = vulnerability of community *i* to stimulus *s* in time *t*; $E_{ist}$ = exposure of *i* to *s* in *t*; and $A_{ist}$ = adaptive capacity of *i* to deal with *s* in time *t*. While context, location, sector, and timescale vary and the functional relationship between the two elements is not specified, it is understood that vulnerability is a positive function of a community's exposure and a negative function of a community's adaptive capacity (Sietsma et al., 2021). Vulnerability has a biophysical component, exposure to physical hazards, and a social component, meaning social, political, and economic conditions change how much harm is possible when an event occurs. A system's vulnerability to climate change is thus a function of both its exposure to climatic risks and its adaptive capacity to deal with these risks (Ford & Smit 2004).

Adaptive capacity refers to the ability of socioecological systems to adapt to change (Siders, 2019). While adaptive capacity is complex and contextual, Barnes et al. (2020) demonstrate empirically that social learning, organization, and agency are key social determinants of community adaptive capacity necessary to respond effectively to climate change. It has also been established that local adaptive capacity is a function of managerial ability, access to financial and other resources, infrastructure, political and institutional environment, amongst other factors (Smit & Wandel, 2006). Critically, adaptive capacity is not static, and social, institutional, technological change can increase or decrease adaptive capacity (Siders, 2019). Adaptive capacity is conceptually similar to adaptability, coping ability, management capacity, stability, robustness, flexibility, and resilience (Smit & Wandel, 2006). Reductions in vulnerability due to

initiatives that improve adaptive capacity are often tangible at the community level, making it an attractive level of analysis (Sietsma et al., 2021). While community encompasses many things—histories, cultures, and relationships—community as a unit of analysis is defined here as an aggregation of interconnected households in a limited spatial extent (Coombes et al., 1988).

For communities living legacies of historical inequality while simultaneously seeking to adapt to a rapidly changing climate, resilience theory offers a potentially valuable set of conceptual tools (Berkes and Ross, 2013). Initially an ecological concept, resilience thinking is underdeveloped in the social sciences, especially at the local and community level (Berkes and Ross, 2013; Davidson, 2010). Roughly, resilience refers to the ability of a community to adapt to impacts and retain its structure and functioning (Berkes and Ross, 2013). When applied to social-ecological systems, a community is seen as both social and ecological, an intertwined, coupled, and coevolving system—embedded within larger systems which affect or are affected by the community level (Berkes and Ross, 2013). All levels of analysis, micro, meso and macro, or for example individual, community and state are worthy of study (Berkes and Ross, 2013). Yet the community level is especially important because communities have unique capacities unseen in the larger and smaller systems. Communities are a source of identity and normative standards, they are flexible and responsive to local changes, and they are a source of strength for individuals facing hardship (Berkes and Ross, 2013). Indigenous communities have shown substantial resilience in flourishing despite ongoing attempts at genocide by the colonial state (Wolfe, 2006). Resilience is key to enduring climate chaos as well, as demonstrated by Arctic Indigenous peoples coping with changing sea ice (Berkes and Jolly, 2002).

Indigenous communities are often thought to have substantial adaptive capacity due to their extensive knowledge and experience in their environment, their mobility and flexibility of group

sizes, and strong social networks (Ford & Smit, 2004). Yet, the magnitude and pace of climate change in the Arctic has strained the adaptive capacity of those living there, leading some to wonder about the limits of current capacities to deal with the existential risk climate and environmental change present (Canosa et al., 2020; Ford et al., 2021). Wall & Marzal (2006) argue the dependency on extractive industry in the north could jeopardize the potential for meaningful adaption to climate change. Crucial sources of adaptive capacity, such as the flexibility of subsistence lifestyles, strong social ties, and knowledge of the environment, can be eroded by the cultural, environmental, and economic changes brought on by the colonial resource extraction economy (Ford, McDowell and Pearce, 2015). Clearly, for climate change vulnerability research to capture the complexity of socio-ecological systems, socioeconomic processes are critical (Ford et al., 2021).

# Chapter 3- Case Study Description

This chapter provides background context for the Tłı̨chǫ, the case study area, Tłı̨chǫ-state relationships as they have evolved from contact with settlers to present day, and the history of mining in the region. The case study region is the area where the Tłı̨chǫ hold rights settled via their land claim, although many interviewees live and work outside these boundaries. In this region, the Tłı̨chǫ hold rights to land uses, including hunting, surface and subsurface (mineral) rights. In a larger area, they comanage land use with the territorial and federal governments. A map of the region is provided in Appendix A. The case study region is characterized by resource extraction, particularly diamond mining, and there is considerable potential in the region for expanded production of diamonds, rare earth mineral and other mining operations in the future. This makes an understanding of the system behind natural resource decision-making, as well as a history of settler- Tłı̨chǫ relations when it comes to mining, essential in developing a social, political, and economic picture of the case study region. I will describe these aspects of the case study region with an emphasis on the diamond mining sector.

## Tłı̨chǫ Background

The Tłı̨chǫ identify with the Dene (translation: ‘the people’); the Dene are comprised of Chipewyan, Slavey, Dogrib (the colonial name for the Tłı̨chǫ), Mountain, Bearlake, Hare, and eastern Gwich’in peoples (Helm, 2000). The Tłı̨chǫ inhabit an area of approximately 295,000 square kilometres, located east of the Mackenzie River between Great Slave Lake and Great Bear Lake in the Northwest Territories of Canada. Settler society administration is relatively recent compared to the rest of Canada, beginning in 1969, and was overturned following the settlement of their land claim agreement, the 2005 Tłı̨chǫ Land Claim (White, 2020). Now, they

are a self-governing nation, having been granted a self-government agreement by the Canadian Parliament in 2005, and possess control over 39,000 square kilometres of land, alongside control of their education, health, and social services. Surface and sub-surface rights are held by the Tłı̨chǫ over a set portion of their management area, and they comanage the remaining area with the governments of the Northwest Territories and Canada.

A long history of forming trade relationships and partnerships is essential to understanding Tłı̨chǫ oral histories and catalogs the importance of such relationships through to the present. While self-governance is a recent development, Tłı̨chǫ -Canadian state relations are marked by a series of agreements, so much so that relationships define Tłı̨chǫ understandings of Indigenous - state relationships to this day. This includes many unwritten practices of exchange and reciprocity (MacDonald, Zoe and Satterfield, 2014).

When Tłı̨chǫ Elders and leaders orate their history, it centers around five central agreements and relationships with animals, other Indigenous groups, the federal government, and mining companies. Firstly, the Tłı̨chǫ made an agreement with the animals to coexist (Zoe, 2005). The early Tłı̨chǫ genesis myths have become the foundation of Dene law, codifying vital cultural philosophies about human/animal relations and respectful co-habitation and use of the landscape. The creation stories tell of the transfiguration of humans to animals, clashes between predatory animals and humans, and means of reconciliation of these conflicts (MacDonald, Zoe and Satterfield, 2014). Later, agreements with other humans take on a more important role. The “time of respect” dawned when Tłı̨chǫ made agreements with their tribal neighbours, ending longstanding feuds (Zoe, 2006). This was followed by “the time of darkness” often dated as beginning in 1921, when Treaty 11 was signed and the federal government forced children into residential schools, infectious diseases spread, and attempts to erase Tłı̨chǫ language and culture

via assimilation occurred (LaBoucane-Benson et al., 2012). The settlement of the Tłı̨chǫ Land Claim and other acts of self-determination marked the emergence from the time of darkness. Elder John B. Zoe says, “we have designed our own healing path” (Zoe, 2006) through numerous acts of self-determination. Key to self-determination were provisions to protect lands, participate in co-management bodies, and set the rules for treatment of lands, water, and animals in the Tłı̨chǫ land claim region. For Tłı̨chǫ, oral history is often told out on the land; connecting words and the land is essential to the proper transmission of stories (Fenge et al., 1999). In travelling the land, the Tłı̨chǫ relive their stories and reinforce connections to their culture (MacDonald, Zoe and Satterfield, 2014).

In the early 1900s, the fur trade operated alongside the mining economy of the Northwest Territories. Ten forts established in the region to support the fur trade were along the Deh Cho (Mackenzie) River. With the fur trade, many Tłı̨chǫ became involved in trapping commercially to trade furs to settlers or were traders themselves. Fort Rae was established in 1852, providing an exclusive point of trade for the Tłı̨chǫ (Helm, 2000). The fur trade was the primary economy for Tłı̨chǫ people well into the 1900s. The market value of harvesting furs was greater than that of gold until 1939; following the increase in the cost of goods and decrease in fur prices following World War II, Tłı̨chǫ were increasingly pressured to integrate into the cash economy (Watkins, 1977). Currently, fur sales from the entirety of the Northwest Territories generate less than $1 million each year (NWT Bureau of Statistics, 2021)

Following the signing of Treaty 8 in 1899 (Treaty 11 replaced Treaty 8 in 1921), the north was opened immediately for mineral exploration (Macdonald, Zoe and Satterfield, 2014). Prospectors made use of local knowledge and travelled along Tłı̨chǫ traditional canoe routes and harvesting trails. They were notoriously uncongenial and made no effort to understand Tłı̨chǫ culture or

build relations, leading the Tłı̨chǫ to call them “kweti ji”: the secretive people (who look for rocks) (MacDonald, Zoe and Satterfield, 2014). Natural resource extraction would not have been possible were it not for the contributions of Indigenous people in sharing the land, to labour, to providing the supportive infrastructure that allowed survival, settlement, and extraction in the first place. Tłı̨chǫ oral history reflects these relationships between Indigenous peoples and the miners, while colonial history largely eschews it in favor of myths of settlers carving out an existence on a rugged frontier via their grit and ingenuity alone. This disparity marks an unequal relationship; where there is failed exchange for the Tłı̨chǫ, history is dark and destructive (MacDonald, Zoe and Satterfield, 2014).

Very few Tłı̨chǫ men were employed in the mines prior to the 1930s (Abel, 2005). Thanks to the increasing levels of political agency in more recent years, agreements with mining companies have enabled Tłı̨chǫ to capture some benefits from the emerging mining economy. Agreements were reached with Ekati (BHP Billiton) in 1999, Diavik (Rio Tinto) in 2000 prior to the signing of the Tłı̨chǫ Land Claim, and Snap Lake (De Beers) in 2006 after the land claim was settled. Impact benefit agreements (IBA’s) are a key intervention in modern times to rectify the tendency for profit and employment being directed to non-Tłı̨chǫ interests (O’Faircheallaigh, 2021). Measures negotiated into the IBA’s for operating mines also continue to protect the traditional sites and agreements from the past. Some argue these agreements have moved the Tłı̨chǫ out of a position of marginal economic engagement and opened possibilities for economic development, a realm from which they were excluded in the early years of mining (Bebbington et al., 2008). In a sense, then, the IBAs extend rights and privileges to the Tłı̨chǫ that were previously intentionally ignored by the settler society. The agreements, at least in part, serve the purpose of

remedying past exclusions. IBA's are used to reduce fundamental inequities of the past (MacDonald, Zoe and Satterfield, 2014).

Yet, contemporary relationships with mining proponents leave much to be desired. Mining companies tend to adhere to a business model that focuses on increasing employment, business opportunities, environmental protection, and economic potential (MacDonald, Zoe and Satterfield, 2014). In other words, the companies secure a stable labour force, reduce social and political risks to land tenure and mineral rights, and encourage the arrival of business partners who they can depend on to maximize profits over other concerns (MacDonald, Zoe and Satterfield, 2014). The Tłı̨chǫ are depicted to the company shareholders as a risk to finances, rather than as a partner. In other words, relationships are of instrumental value only. Moreover, the structural dynamics of fluctuating global mineral markets are not conducive to long-term relationship building or social investment in local regions (Franks et al., 2014). And of course, fiduciary responsibility dictates corporate interests are motivated to maximize profits, minimizing the benefits likely to be captured by the Tłı̨chǫ.

## Tłı̨chǫ Communities

Most Tłı̨chǫ citizens live in four settlements that are located between Great Slave and Bear Lake, with 2983 citizens speaking a combination of Tłı̨chǫ Yatıì and English. Behchokǫ̀ (formerly known as Fort Rae) is the largest community with 2,029 residents, located 91 kilometres northwest of Yellowknife, which it is connected to via an all-season road (Canadian Census, 2016). Behchokǫ̀ houses the administrative headquarters of the Tłı̨chǫ Government. Behchokǫ̀ was established when the federal government relocated the Tłı̨chǫ from their traditional lands to a centralized location near a pre-existing Hudson's Bay trading post in the 1950s (Helm, 2000)

Whatì is the next biggest community and next closest to Yellowknife, with 460 residents, and it is 50 kilometres from Behchokǫ̀ via an all-season road completed in 2019 (Canadian Census, 2016). Whatì, bordering Lac La Martre, is a particularly rich ecosystem, and hosts tens of thousands of migratory birds in addition to being renowned for having some of the largest lake trout and northern pike in the world (Tłı̨chǫ History, 2014). Gamèti is smaller, with 277 people (Canadian Census, 2016), and more remote, 206 kilometres from Yellowknife, accessible only by ice-road in the winter or by small plane in the summer months, and because of this, locals have limited access to services and seasonally stock up on supplies. Long used as a camp during parts of the year, in the 1970s Gamèti became a permanent settlement (Tłı̨chǫ History, 2014). Wekweètì has 163 people, and like Gamèti it is accessible via ice road or airplane depending on the season. Wekweètì was founded in 1962 by Elder Alexis Arrowmaker and several families seeking to maintain a traditional lifestyle away from the influence of settler society (Tłı̨chǫ History, 2014). The site, 192 kilometres from Yellowknife, was chosen because of its proximity to the migratory route of the Bathurst caribou (Schmidt, 2014).

## Resource Management in the Mackenzie Valley

Tłı̨chǫ lands are in the Mackenzie River Basin, a large watershed that spans over 1.8 million square kilometers in northern Canada, including parts of the Northwest Territories, Yukon, British Columbia, Alberta, and Saskatchewan (White, 2020). The basin is rich in natural resources, including gold, diamonds, copper, rare earth and other minerals, oil, and gas, which have long attracted interest from mining and energy companies (GNWT Mining Recorder's Office, 2022). There are several active mines in the Mackenzie River Basin, including the Ekati, Gahcho Kué and Diavik diamond mines. Projects in the Mackenzie Valley must pass impact

assessment reviews, with the Mackenzie Valley Review Board widely touted as state of the art in terms of Indigenous engagement (Christensen, Ehrlich and White, 2007). Impact benefit agreements for projects on Indigenous lands are mandated by law, ensuring a portion of resource development benefits remain in local communities (Sam-Aggrey, 2021). Unlike most other locations globally, where governance of mining operations is widely understood to be poorly regulated and enforced (Franks et al., 2014), mining companies operating on Canadian soil are required by law to consult with Indigenous groups via public meetings, workshops, and consultation with traditional knowledge holders. Overall, guidelines seek to build trust, mutual respect, and meaningful, sustained engagement over the complete life cycle of the mine (Christensen, Ehrlich and White, 2007).

## Economic Overview

According to the NWT Bureau of Statistics (2021), diamond mining accounts for approximately 26% of the territorial GDP ($4.1 billion CAD). As of March 2022, there are over 200 active mineral claims in the territory (GNWT Mining Recorder's Office, 2022). Tłı̨chǫ workers are employed at all the currently operating mines, comprising about 10% of the total mining workforce (GNWT Bureau of Statistics, 2021). Tłı̨chǫ employment is up 6.3% relative to 1990 rates, prior to the opening of the modern generation of diamond mines (GNWT Bureau of Statistics, 2021), and 26% of Tłı̨chǫ Government revenue comes from mining (Tłı̨chǫ Government, 2022). However, a survey found southern workers hold nearly all (98.2%) of management and ‘higher skill’ jobs (GNWT Bureau of Statistics, 2021), and 80% of Tłı̨chǫ employees in the mines are men—a number that has historically been even more male-dominated (Helm, 2000). So, it appears the benefits of mining are not equitably distributed

between non-Indigenous and Indigenous workers, nor equally distributed among northern Indigenous men and women.

But economic alternatives beyond mining are limited, and Tłı̨chǫ communities and government currently depend upon mining revenues to fund social services and cultural programs (Tłı̨chǫ Government, 2022). In terms of revenue, tourism, hunting, traditional arts and crafts, renewable energy, construction, forestry, and other small businesses account for most of rest of the Tłı̨chǫ economy (GNWT Bureau of Statistics, 2020). However, many currently operating mines are expected to close in the next 15 years, and mining revenue is expected to drop from 26% to less than 5% of the Tłı̨chǫ Government operating budget, without new mines (Tłı̨chǫ Government, 2022). While there is potential for new operations, these projects remain in early stages and require significant planning and capacity-building to ensure Tłı̨chǫ benefit from them maximally (Tłı̨chǫ Government, 2022). Regardless, the environmental impacts of mines and limited benefits seen locally limit desire for more mining in favor of more diverse, sustainable, and culturally acceptable industries (Southcott et al., 2018).

## Relationship with the State

The relationship between the Government of Canada and the Tłı̨chǫ people has been shaped by a long history of colonization and assimilation policies, as well as by the negotiation and implementation of modern treaties. The 19th and 20th centuries are characterised by attempts at cultural genocide, a subaltern place in politics, and the settlement and degradation of Tłı̨chǫ lands (Coulthard, 2014, p. 4; Helm, 2000). It is important to note such tactics were an intentional strategy by the state to extinguish the ‘Indian problem’. In 1890 the commissioner of Indian Affairs writes:

> *"The work of sub-dividing reserves has begun in earnest. The policy of destroying the tribal or communist system is assailed in every possible way and every effort [has been] made to implant a spirit of individual responsibility instead."* (Canada, 1890).

More recently, the infamous "White Paper" released by the Department of Indian Affairs in 1969 called for widespread assimilation of the status Indian population via the removal of all legal and political differences between First Nations and non-native Canadians (Watkins, 1977). Residential schools took Tłı̨chǫ children from their families and punished them for speaking their language and practicing their culture (Watkins, 1977). More generally, policy sought to erode traditional ways of life by forcing Indigenous peoples into settler modes of production, agriculture in the prairies and the natural resource industry in the thin soiled north (Carter, 2019). Ongoing colonialism contributes to social and economic disparities in Tłı̨chǫ communities, seen in limited access to education, healthcare, and high poverty rates (GNWT Bureau of Statistics, 2021).

Despite attempts at extinguishing Indigenous culture, Indigenous-led resistance to colonialism has never been extinguished. Struggles took on new life following the publishing of the White Paper when widespread coalitions of Indigenous "Red Power" activism emerged in response to defend culture and protect Indigenous ways of life from mounting pressures of assimilation (Dickason & McNab, 2009). One such was pressure was that settler populations in the north were rapidly increasing at the same time, and these new settlers were pushing for northern development, and were increasingly appropriating Indigenous lands (Coulthard, 2014, p.56). From the state's perspective, the oil crisis of the 1970s renewed interest in exploiting untapped resources in the north (Abele, Graham and Maslove, 2000). Recognizing the mounting pressures to develop the NWT, the Dene bemoaned a lack of political agency, "we were finding ourselves

to have less say… every year more mines were discovered, [more] roads were built… without our consent" (Dene Nation, 1984). The discovery of a huge oil deposit in Prudhoe Bay, Alaska, and subsequent plans to build a pipeline through the heart of the Mackenzie Valley seemed to spell the next chapter of the state ignoring Indigenous voices.

Development plans hit a snag when Dene interests claimed rights to more than one million square kilometres of the land to be appropriated; the subsequent legal processes that followed became known as the "Berger Inquiry", widely recognized as a precedent setting case for future Indigenous state relations (Southcott et al., 2018). Justice Thomas Berger, after hearing the testimony of nearly one thousand expert witnesses and Indigenous people in the Mackenzie Valley, recommended no pipeline be built, and furthermore, recommended a ten-year moratorium on development (Berger, 1977). The Dene had articulated a critique of capitalism and industrialization (Usher, 1993), and now had a prominent legal case upholding their rights to land and a different way of life. The legacy of the Berger Inquiry is a world leading process of Indigenous engagement and co-management of much of the Northwest Territories under the oversight of the Mackenzie Valley Review Board (Southcott et al., 2018).

Out of this activist milieu, renewed appetite for recognition of Indigenous people as self-determining nations gained momentum. In 1973, the Calder Decision recognized Aboriginal title to land pre-existed British sovereignty, and Dene people used this momentum to assert their rights to their lands (McKee, 2009). One of the key moments in this era of Dene self-determination was the signing of the Dene Nation Declaration in 1975 (Watkins, 1977). This declaration, signed by a coalition of Dene leaders from the Sahtú, Gwich'in, Tłı̨chǫ, Yellowknives, Northern Slavey and Chipewyan nations, affirmed the Dene people's right to self-determination and to control their lands and resources. The Dene Nation also proposed a political

system based on direct democracy and cooperatively owned, sustainable economic interests (IB-NWT, 1976 as cited in Coulthard, 2014).

However, radical challenges to colonial sovereignty and capitalist modes of production outlined by the Dene Declaration were a challenge to the primacy of the state and capitalist modes of production. From the state's perspective, a radically different political economy was a non-starter, and true recognition of Indigenous nationhood (as peers to Canada) has never come to pass (Coulthard, 2014 p. 66). More recent cases (i.e., Delgamuukw v. British Columbia), where the doctrine of Crown sovereignty enabled the state to infringe upon Indigenous rights in the name of national interest highlight how the state continues to ignore Indigenous self-determination when convenient (Alfred, 2001). Put another way, although the state no longer dominates Indigenous peoples directly via violence, Indigenous rights are still in practice valued as lesser than the legal, political, and economic interests of the state (Povinelli, 2002). The Dene eventually acquiesced to the unbudging hegemony of the state, and contemporary Indigenous land claims in the NWT have shed their radical demands (nationhood, rejection of private property and colonial laws) in favor of a smaller set of rights to self-government and land rights (Kulchyski, 2015).

The settlement of the Tłı̨chǫ Land Claim faces the same limitations. The Tłı̨chǫ Agreement includes provisions for economic and cultural development in a self-determined fashion (Sam-Aggrey, 2021). Under the Tłı̨chǫ Agreement, the Tłı̨chǫ have established their own government, which has jurisdiction over a range of areas, including land and resource management, education, and social services. Economic development plans that prioritize sustainable resource development, education, and job training have added meaningfully to Tłı̨chǫ communities. Additionally, there have been efforts to promote Indigenous-led businesses and to ensure that the

benefits of resource development on Tłı̨chǫ lands are shared equitably (Sam-Aggrey, 2021). Furthermore, the Government of Canada has ongoing obligations under the Tłı̨chǫ Agreement and other treaty obligations, providing funding and support for the Tłı̨chǫ Government and works collaboratively with the Tłı̨chǫ on a range of issues, including environmental management, economic development, and social programs. Yet in no way does the Tłı̨chǫ land claim provide the economic and political infrastructure necessary to cultivate alternatives to a dependence on non-renewable resource extraction (Coulthard, 2014, p. 76). Mineral rights allow the Tłı̨chǫ to capture a small percentage of profits from mines on their lands, but challenging capitalist modes of production is not foundational to visions of self-determination as it was in previous eras (Dene Nation, 1981; Coulthard, 2014, p. 75). Political recognition has devolved into a limited set of rights to self-government, far from the peer-to-peer relationship initially sought (Coulthard, 2014, p. 77). Crown sovereignty, the doctrine of paramountcy (where federal laws supersede local) and the lack of a veto given to Indigenous communities facing resource development on the lands that fall under their land claim limit Indigenous sovereignty, even when a land claim is in place (Coulthard, 2014; Hall, 2013).

## History of Mining

In the 1930s, prospectors began exploring the area around what would, because of substantial mineral deposits, become Yellowknife, and in the 1940s and 1950s, several large gold mines were developed, including Con, Giant, and Discovery Mines and Rayrock uranium mine. The mining industry in the area continued to grow throughout the 20th century, and by the 1990s, several large diamond mines had been developed, including the Ekati, Diavik, Gahcho Kué and Snap Lake mines (Hall, 2013).

While mining has brought some level of economic benefits and jobs to the region, it has also impacted the environment and traditional ways of life of the Tłı̨chǫ people. The mining industry has caused significant disruption to the land, including the destruction of habitat, the contamination of waterways, and the displacement of wildlife (Couch, 2002). There have also been concerns about the impact of mining on the health and well-being of the Tłı̨chǫ people, who rely on the land for their food, medicine, and cultural practices (Tłı̨chǫ Government, 2022). In 2016, the Tłı̨chǫ Government signed a new co-management agreement with the government of the Northwest Territories to regulate mining activities on Tłı̨chǫ lands (Sam-Aggrey, 2021). This agreement gives the Tłı̨chǫ more control over decision-making related to mining and ensures that their traditional knowledge and values are considered in the management of mining activities.

## Historical Mines

### Rayrock

The Rayrock Uranium Mine is a former mine located in Kwetı̨ı̨ʔaà, land once used for hunting and harvesting, in the heart of Tłı̨chǫ lands, approximately 80 kilometres northeast of Great Bear Lake. It operated from 1957 to 1962 and was one of the first uranium mines in Canada (Helm, 2000). The mine produced approximately 500,000 tons of uranium ore during its operation. The remediation of the Rayrock Mine site began in the early 2000s, but uranium is a notoriously persistent environmental pollutant and Tłı̨chǫ still avoid the area. A partnership between the Tłı̨chǫ government and CIRNAC (Crown-Indigenous Relations and Northern Affairs Canada) are leading remediation work, including the removal of contaminated soil and the installation of a cover system to prevent water infiltration and reduce the release of contaminants (Tłı̨chǫ Government, 2022). The remediation project is ongoing.

Snap Lake

The Snap Lake Diamond Mine is located 80 kilometres northeast of Whatì, the second most-populous Tłı̨chǫ community. It was operated by De Beers Canada and produced 1.6 million carats since its inception in 2008 but was placed into temporary closure in 2015 due to challenging market conditions (Tłı̨chǫ Government, 2022).

The IBA was signed in 2005, one of the first agreements of its kind in the diamond mining industry in Canada. De Beers committed to providing employment and training opportunities to Tłı̨chǫ people, as well as contracting opportunities for Tłı̨chǫ -owned businesses. The company also committed to providing financial compensation to the Tłı̨chǫ Government for the use of Tłı̨chǫ lands and resources, as well as for the impacts of the mine on the environment. The IBA also includes provisions related to environmental protection and cultural heritage protection, including requirements for the company to consult with the Tłı̨chǫ Government on any activities that could impact Tłı̨chǫ cultural sites or artifacts.

In 2018, De Beers Canada announced that the Snap Lake Diamond Mine would be permanently closed and decommissioned; the Tłı̨chǫ Government and De Beers negotiated a Closure Agreement that outlined the responsibilities of both parties related to the closure and decommissioning of the mine. The Closure Agreement included provisions related to environmental monitoring and protection, as well as a commitment from De Beers to continue to support the Tłı̨chǫ people through employment and training opportunities, as well as community development initiatives.

## Currently Operating Mines

### Ekati

The Ekati Diamond Mine is located about 70 kilometres northeast of Wekweètì. It was the first diamond mine to be developed in Canada and began production in 1998 (Tłı̨chǫ History, 2014). The mine was owned and operated by Dominion Diamond Mines, a Canadian mining company, until it was sold to Harry Winston Diamond Corporation for US$500 million in 2012 (CBC, 2012). Ekati is an open pit mine that has pits spread over an area of approximately 122 square kilometers. The mine produced an average of $750 million, 6% of the world supply of rough diamonds from 2007-2012 (*Ekati Mine*, 2023). According to Dominion Diamond Mines, the Ekati mine has produced over 67 million carats of rough diamonds since it began operations, with an estimated value of over US$5.7 billion (*Ekati Mine*, 2023).

The development of Ekati has employed over 1,500 people, including many Tłı̨chǫ. However, the mine has been criticized for its impact on water quality and wildlife as well as concerns about labor practices and treatment of Indigenous people (Couch, 2002). The IBA was signed in 1996, in which Dominion Diamond Mines committed to providing employment and training opportunities to Tłı̨chǫ people, financial compensation to the Tłı̨chǫ Government for the use of lands and resources, as well as contracting opportunities for Tłı̨chǫ -owned businesses (Tłı̨chǫ Government, 2022). The company also committed money and resources to minimizing and remediating the impacts of the mine on the environment during operation and after closure.

### Diavik

Diavik is located about 40 kilometres northwest of Gamètì, making it the closest mine to any Tłı̨chǫ community. It is one of the largest diamond mines in the world and is jointly owned by Rio Tinto (60%) and Dominion Diamond Mines (40%). Diavik opened in 2003 and is an open pit mine that is spread over an area of approximately 20 square kilometers. The mine produces a range of high-quality diamonds, including white, yellow, and pink diamonds, which are highly valued in the global diamond market. According to a corporate annual report, the Diavik mine produced 5.7 million carats of diamonds in 2020 alone, with an estimated value of US$751 million (*Diavik*, 2023). Since the mine began production in 2003, it has produced over 120 million carats of diamonds, with an estimated total value of over US$10 billion. The mine employs over 1,000 people, and like Ekati, an Impact Benefit Agreement (IBA) with the Indigenous communities in the region was signed prior to the opening of Diavik (Tłı̨chǫ Government, 2022).

Gahcho Kué

The Gahcho Kué (Misery) Mine, owned by De Beers (51%) and Mountain Province Diamonds (49%) began production in March 2017 and is expected to have a mine life of approximately 12 years. It is an open pit mine, expected to produce approximately 54 million carats of diamonds over its mine life, making it one of the largest diamond mines in the world. In 2019, the mine generated approximately CAD $1.1 billion and employed approximately 450 people. According to a press release from De Beers, the mine has produced over 17.3 million carats of diamonds since it began production, with an estimated value of US$2.2 billion (*Gahcho Kué Mine*, 2023). The Gahcho Kué Mine also has an IBA with the Indigenous governments in the region, including the Tłı̨chǫ Government, the Yellowknives Dene First Nation, and the North Slave Métis Alliance

(Tłı̨chǫ Government, 2022). It was the first mine in Canada to be certified under the new Canadian Diamond Code of Conduct, which requires companies to adhere to strict environmental and social responsibility standards.

### Future Mining Potential

The Northwest Territories has significant mineral potential—in addition to diamonds, there is potential for gold, lead, zinc, copper, silver, and rare earth mineral development. Strategies outlined in the *Canadian Minerals and Metals Plan* (Natural Resources Canada, 2022) indicate these resources are of key strategic interest for governments, which makes sense as renewable energy, electric transport, and emerging technologies of substantial profitability depend upon these resources (Natural Resources Canada, 2022). Many of these minerals are in the Mackenzie Valley, and hundreds of exploration permits are under review (GNWT Mining Recorder's Office, 2022).

### Mine Remediation

Mine remediation refers to the process of restoring and rehabilitating mine to minimize the long-term environmental and social impacts of mining (Sandlos and Keeling, 2012). Decommissioning of mine facilities, the treatment and disposal of mine waste and tailings, and the restoration of ecosystems and habitats that may have been impacted by mining activities is necessary. Historical mines were not subject to modern environmental regulations or standards; as a result, there are many abandoned or inactive mine sites in the region that pose a risk to the environment and public health (Canada, 2019). The GNWT is responsible for overseeing mine

remediation activities in the region and has developed several partnerships with local Indigenous groups to address the issue. The Abandoned Mines program is responsible for identifying and assessing abandoned mine sites and developing plans for their remediation and closure (Canada, 2019). In addition, mining companies operating in the NWT are required to provide financial assurances to cover the costs of mine closure and remediation in case the company becomes unable to fund the activities themselves (GNWT Mining Recorder's Office, 2022). However, the remediation of Giant Mine, which left behind 237000 tons of toxic arsenic trioxide and is estimated to cost taxpayers $5 billion CAD, alerted the public that proponent funds for cleanup have not always been sufficiently secured (Sandlos and Keeling, 2012). Many argue that not only are environmental impacts often underestimated and proponents overly confident in their ability to deal with them, but social and cumulative impacts are ill-considered (Alfred, 2021). As such, mine remediation is currently a contested subject in impact review processes.

## Regional Vulnerability to Climate Change

In addition to significant impacts from mining, the Tłı̨chǫ are expected to face a range of impacts from climate change. Projected impacts of climate change on Tłı̨chǫ lands include thawing permafrost, which can change the landscape, destabilize infrastructure, and increase passive greenhouse gas emissions from previously stable underground frozen carbon (Clark et al., 2022). Climate change is also expected to impact the quantity and quality of freshwater resources in the region by altering precipitation patterns, snowmelt, and glacial melt (Song et al., 2018). There is also expected to be an increased risk of wildfires (Song et al., 2018), impacts on distribution and abundance of wildlife due to changes in temperature, precipitation, and snow cover can affect the breeding, migration, and survival of wildlife, which can have cascading impacts on the

ecosystem (Meredith et al., 2019). The barren ground caribou central to Tłı̨chǫ culture are expected to crash further due to the changes in vegetation and interactions with new species brought about by warming temperatures (Russell et al., 2018)

Mining operations are subject to these same threats, facing increased risks of flooding, landslides, and other natural hazards (ExChange, 2015). These conditions can make it more costly to build and maintain roads, airstrips, and other infrastructure needed to support mining activities (Clark et al., 2022). Tailings ponds and waste may seep into the surrounding land as permafrost destabilizes frozen discard (Keeling and Sandlos, 2016). In addition to the physical consequences, climate change can also have an impact on the socio-economic factors related to mining, such as changes in the workforce and the demand for minerals, further threatening the continuity of the industry as a stable source of regional employment.

## Chapter 4- Methods

This study was conducted as part of the larger SSHRC-funded research project "Advancing Impact Assessment for Canada's Socio-Ecological Systems". It took place in the Northwest Territories from the fall of 2022 to spring 2023. The collection of interview data required me to travel to Yellowknife, Behchokǫ̀, Gamètì, and Whatì. More information about these communities is in the Case Study Description chapter.

This study uses a qualitative research approach. An iterative approach informed my interpretation of the case, working back and forth between concepts present in published literature to inductive ideation as themes became salient in the process of data collection. A qualitative approach was best suited to this research as the purpose is to describe Tłı̨chǫ perspectives on how mining development and climate change are affecting their communities, without reducing the findings to a hypothesis test. Specifically, this research followed a case study approach, whereby in-depth analysis of a specific community is generated (Hancock, Algozzine & Lim, 2021). The case study approach is appropriate to describe the meanings individuals ascribe to the world they inhabit (Hancock, Algozzine & Lim, 2021). This approach entails a strong focus on the impacts of mining development in Tłı̨chǫ localities, enabling future cross-community analysis to identify themes of impacts of resource development across Canada, particularly for Indigenous communities.

As this research entailed working with Indigenous communities, coproducing research in an ethically rigorous and locally relevant fashion at all stages was of particular importance. Therefore, this research sought to be culturally sensitive, mindful of the ongoing processes of colonization and cultural experiences of Tłı̨chǫ citizens participating in the study (Burnette et al., 2014). As such, reflexivity, self-awareness about one's multiple identities and how they influence

research processes, was necessary to make research decisions in ways that balance power imbalances between researchers and participants (Bishop, 1998). In practice, this meant taking a community-based participatory research approach (Minkler & Wallerstein, 2011), where Tłı̨chǫ government members acted as full research partners, formulating concepts that guided the development of research questions, as well as directing the identification of the first wave of participants. Before field research began, Dr. Davidson and other members of the research project met with our community partners to determine and refine research priorities. In those meetings, our Tłı̨chǫ partners expressed an interest in exploring the social impacts of mining and the effectiveness of the impact assessment process. In addition, they expressed an interest in collecting community perspectives on two additional themes: citizens perceived vulnerability to climate change and desired resources to adapt to change, as well as perspectives regarding the appropriate role of mining in the future. Our project thus adapted to center around these themes. As research progressed, collaborative dissemination of research, use of local research assistants, Tłı̨chǫ ownership of data, and compensation for participants were also key parts of how this research was conducted in a participatory fashion.

All interviews and information collected were part of one case, rather than separated out explicitly based on role, location, or other factors. The bounds within which a case study is conducted are set to try and pin down a focus of the study rather than attempting to answer a multitude of questions (Hancock, Algozzine & Lim, 2021). The case for this study is bounded by its subject matter to the impacts of mining and climate change on Tłı̨chǫ people. Specifically, the study happened to be centered around community members who have direct experience with the impacts of mining development (commonly said to have begun in the NWT in 1938 with the opening of Con Mine, although prospectors came earlier) and climate change, the effects of

which have begun to emerge over the past two decades. This focus was expanded via interviews with key informants who have participated in decision making or deliberations around mining projects through their work. The collection of interviews in this way falls in line with the method described as a descriptive case study, enabling the researcher to explore phenomena (mining and climate change) and the real-world context in which they are unfolding (Tłı̨chǫ communities) (Hancock, Algozzine & Lim, 2021). Analysis occurred in an iterative fashion as topics developed within and between interviews (Creswell et al., 2006). This approach gives depth and dimension to the sociological explanation produced by this study. Sociological investigation involves more than mere facts or items; it scrutinizes the meanings and symbols involved in the interactions of social actors; meanings and symbols enter actors' environments and define their points of view on these interactions, consciously or unconsciously (Hamel et al, 1993, p.16-17).

The qualitative case study is well suited for the "exploration of a phenomenon within its context using a variety of data sources… the issue is not explored through one lens, but rather a variety of lenses which allows for multiple facets of the phenomenon to be revealed and understood" (Baxter & Jack, 2008, p.544). The initial stages of the research were intentionally broad; more specific themes were refined throughout the data collection process. The nature of the qualitative interview data collected did not allow for a comparison of factors across individuals explicitly, as time or individual expertise meant not all questions were asked of each participant, nor were they asked in the same way each time. The analysis was more organic, occurring at multiple levels at once, and each interview with an individual was unique, and therefore did not lend itself well to variable based analysis. Instead, commonalities and common threads of discourses and framing were the focus of analysis, in the spirit of Ragin (1987, p.83)

who argued “synthetic strategy should allow analysis of parts in a way that does not obscure wholes”.

The initial stages of the research were open-ended. Reaching out to our community research partners at the Tłı̨chǫ Government allowed the first round of participants to be identified. In the case of this research, participants were asked for referral to members of their community who had also been affected by mining or climate impacts and could offer insights that were different from their own. Interviews were collected up to the point saturation was reached (Low, 2019) and graduation timelines demanded the conclusion of this thesis. As the research relied on snowball sampling, it was important to remain within the communities where there was an uptake and a willingness to participate. Generous information sharing and referrals by some interview participants resulted in a focus on interviews in three of the four Tłı̨chǫ communities: Behchokǫ̀, Whatì, and Gamètì, as well as in Yellowknife. The research method used has its challenges and limitations, which are readdressed in the limitations section in the introduction, but this method allowed rich and diverse data to be captured in a nonintrusive way led by local research partners (Kilian et al., 2019). The data collected is not representative of the wider population of Indigenous peoples in Canada or elsewhere. It is merely a snapshot of perspectives held in a particular place at a particular time. Therefore, this research cannot be generalizable to larger segments of the population but can be useful in generating new ways of looking at the complex issues of the settler-Indigenous relations and resource development in Canada.

## Exploratory Research

The first phase of this research was conducted from May 2022 to November 2022. This phase comprised a thorough review of key policy, previous research and legislative documents relating

to the Tłı̨chǫ Land Claim and review processes around mining developments, as well as a look at the impacts of historical mines. Meetings with Tłı̨chǫ government research partners helped identify research priorities for the communities which guided the development of research strategy and questions. The social impacts of settler colonization and mining were the focus of this phase of the scoping review, which allowed me to form an understanding of the history and impacts of mining developments for Tłı̨chǫ people. A review of the present day and anticipated impacts of climate change was also undertaken. The results of this scoping review were used to inform the section describing the regime of resource extraction in the Northwest Territories, which can be found in the chapters 'Case Study Description' and 'Literature Review' under the section describing the history of mining in the Northwest Territories.

## Interviews

The second phase of the project was conducted from November 2022 to May 2023. This phase involved the administration of semi-structured interviews in Tłı̨chǫ communities experiencing climate and mining impacts. This phase of the project forms the greater part of this Master's thesis and major findings are described in the Results chapter of this thesis.

### Research Instrument

Data was collected using a semi-structured interview questionnaires conducted in a combination of face-to-face and virtual interviews. Using a semi-structured interview method "allowed interviewees a degree of freedom to explain their thoughts and to highlight areas of particular interest" (Horton, Macve & Struyven, 2004, p. 340). It also enabled further questioning of points of interest in depth and the "resolution of contradictions" (Horton, Macve & Struyven, 2004, p.340). Three semi-structured interview guides were prepared: one each for mine workers/

family, government officials and Elders (see Appendix B to D). Interview questions were tailored to highlight the unique experience of Elders or those involved in prior mining-community engagement processes. Interview questions focussed on historical and ongoing impacts of mining operations on Tłı̨chǫ culture, economy, and lands. Several questions were generated based on the interests of our local research partners. Other questions were based on a review of the literature on the social impacts of mining operations on local people, as well as the emerging impacts of climate change. In general, respondents were asked to identify means for improving social and environmental outcomes for Tłı̨chǫ people. Respondents were asked to identify opportunities and constraints to Tłı̨chǫ self-determination.

During fieldwork, 54 interview sessions were conducted with 56 individuals, two interviews being with two participants at a time, and all others were one-on-one. Two interviews were later discarded due to lack of relevance to our subject matter. Interviews were conducted with representatives from Tłı̨chǫ communities, government agencies and associated organizations. Specifically, we interviewed three officials who were not Tłı̨chǫ citizens, as well as eight Tłı̨chǫ citizens who worked in local government or for a Land and Water Board. We also interviewed 45 Tłı̨chǫ citizens, 18 of whom were Elders, with the rest being current or present day mine workers and their spouses. From these interviews, I selected the 15 I found most relevant to my project and to trim down to a more manageable amount of data. This led to a focus on Elders and government officials, as well as interviewees who were particularly knowledgeable about social and environmental impacts they perceived to be tied to mining or climate change. Initial respondents were recommended by Tłı̨chǫ government officials based on their involvement with mining engagement processes during past developments, and these people were asked who else they thought would have relevant knowledge about climate change and/or mining to share. I

conducted many of the interviews, Dr. Debra Davidson conducted one interview, and another graduate student studying social impacts of mining conducted the others. Interviews were tape recorded and transcribed by me and the other graduate student. Efforts were made to ask all the interview questions, but time-constraints and participant interest in exploring different ideas meant not all questions were asked. Questions were clarified or altered during the interview based on participants' understanding of the question.

Respondents were contacted by email or phone and an appointment was arranged at a mutually convenient time and location. Interviews lasted an hour to two hours and were conducted in various locations: coffee shops, restaurants, the Mackenzie Valley resource management board offices, Tłı̨chǫ government offices in each community, Wek'èezhii Land and Water Board offices, or virtually.

## Sampling

### Sampling Method

Initial respondents were chosen based on recommendations from our community research partners, and then snowball sampling was used. Therefore, this study used a combination of purposive and snowball sampling. Snowball sampling involved respondents recommending participants they are linked to in a greater social network (Trotter, 2012). Network samples focus on specific relationships as well as their intensity, directionality, and frequency. A network sample is designed to describe a larger group that is tied together by some common relationship (Trotter, 2012, p.400). Specifically, respondents who were involved in or were knowledgeable about the impacts of climate change and/or mining on Tłı̨chǫ peoples, through experiences on the

land, involvement in community-company engagement, or those who had knowledge of working at the mines themselves or a close family member. Elders were also sought for their deep knowledge of the land and at the request of the community to document their knowledge. Respondents met at least one of the following criteria:

1. Are Tłı̨chǫ citizens.
2. Familiarity with mining engagement/impact assessment processes.
3. Familiarity with Tłı̨chǫ lands and impacts of climate change.

Our sample consists of predominately Tłı̨chǫ citizens, and those who were not have longstanding relationships with Tłı̨chǫ lands and people through their positions with government, land, and water boards, or as employees of the Tłı̨chǫ government. It was important to the community partners that interviewees have a deep understanding of the Tłı̨chǫ and their way of life, and therefore this sample reflects remaining earnest to local perspectives over other considerations. The exploratory phase of this research also predominately collected information from Tłı̨chǫ people at community hearings. Responses from current and past employees at the mines on Tłı̨chǫ lands were collected by a graduate student as part of a separate project with the same case study and same interview guide. There was overlap in interview questions of interest to both cases.

## Description of the Sample

The sample for this thesis project is a subset Tłı̨chǫ citizens who have been impacted by mining development and climate change. Of the 15, seven were Tłı̨chǫ citizens, three men between the

ages of 35 and 55, two living in Behchokǫ̀ and the other in Whatì, and four women between the ages of 29 and 60, with one individual living in Yellowknife, one in Behchokǫ̀ and two in Whatì. All three men had worked at one of the currently operating diamond mines, in various roles (more than one per person in all cases) including diamond polishing, operating machinery, cook and janitor. One was a current employee and two were ex-employees. Of the four women, three had spouses who worked in the mines, and the other had previously worked in the mine as part of the cleaning staff. three of the four now held roles within government as administrative staff and in community engagement and research roles. Five respondents were Elders: three men living in Gamètì, Whatì and Behchokǫ̀, and two women living in Gamètì. This leaves three government officials to fill out our sample, two men in their 30s and 40s living in Yellowknife and working for the Wek'èezhii Land and Water Board and the Tłı̨chǫ government's caribou monitoring program, and one woman in her 50s who works for the Firelight Consulting Group and lives in Edmonton.

Mine workers and their spouses offered unique insights into the cultural and social impacts of working at the mine, and how those affected family and community dynamics. Interviewees selected had worked at or been involved in the community engagement for currently operating or historical mines on Tłı̨chǫ lands: Gahcho Kué, Snap Lake, Ekati and Diavik. Elders provided longstanding cultural stories and a longer history of the landscape, adding historical depth to the study. In terms of climate change, many interviewees had extensive experience hunting, travelling, and performing other cultural activities on the land, and others were familiar with scientific literature relating to local historical and projected climate impacts.

Government officials who are involved in development and community planning processes offered insights into the formal assessment processes around mining developments. These

representatives were members of local (Tłı̨chǫ or community) governments or part of a resource management board (i.e., Wek'èezhii Renewable Resource Board) and their experience was drawn upon for specific questions meant to evaluate the efficacy of mining development to contribute to Tłı̨chǫ social and environmental wellbeing. Further, particular interest was paid to how they see climate change adaptation factoring into community planning.

Elders were of key interest for our community partners who wished to capture their knowledge to share with future generations. For research purposes, both the depth of their historical knowledge and intimate experience on the land were of keen interest for understanding how mining and climate change are affecting the environment and thus Tłı̨chǫ culture.

Limitations of the Sample

The sample reflects the perspectives of a diverse range of Tłı̨chǫ citizens who have been affected by mining developments, especially when considering the additional perspectives gathered in the exploratory phase of the research. Still, the number of respondents during the interviews was limited, although this limitation is somewhat offset by the extensive exploratory phase of research adding to the number of Tłı̨chǫ voices considered, as well as analysis of documents from mining development processes and land claim hearings. There was a limited response from Tłı̨chǫ citizens living in Wekweètì, as smaller population and the need to fly-in to this community made collection of interviews more challenging. Our window to fly-in to the community was cancelled at the last minute due to a large community event making interviews impractical. Furthermore, as initial respondents were selected from a list provided by our research partners at the Tłı̨chǫ government, there is potential for our sample to be skewed towards citizens in a subset of the larger social network. We heard talk of favoritism amongst hiring decisions, and a relatively small number of family names in our sample may reflect the

opportunity to participate in an interview being passed preferentially through a smaller social network. Our sample also skews older than the age distribution in communities due to our interest in interviewing Elders and inability to interview those under 18. We also interviewed more men than women due to our interest in talking to mine workers, a predominately male field. Lastly, our criteria meant we interviewed mostly those who had been employed at a mine and due to this, we may have missed the perspectives of those who have not benefitted financially from mining income, who may have had a more negative perspective on mining impacts.

## Data Analysis

Following interview transcription, interviews were coded using NVivo 12.0 qualitative data analysis software. The analysis in NVIVO proceeded at multiple levels: individual interviews were examined in addition to the identification of common points of emphasis. To organize the data, codes were developed and linked to concepts to build a thematic analysis. Codes are "labels for assigning units of meaning to descriptive or inferential data complied during a study" and are attached to words, sentences, or paragraphs (Miles & Huberman, 1994 p.56). Following Bazeley (2009) the term "code" denotes the descriptive level of coding, whereas "concept" is a term denoting the ideas raised in each code, and theme is used to describe an integrating, relational idea from the data. Coding took place over the course of several readings allowing for several levels of analysis: open, axial and selective. First, open coding identified themes (Miles & Huberman, 1994). In this stage, I read through interviews looking for major themes; to ensure the full range of phenomena were explored, I did not confine coding to a specific conceptual framework. While I agree with Bazeley (2009) that truly emergent themes are unlikely to emerge *ex nihilo*, not being confined to a specific conceptual framework allowed nuance and somewhat

unexpected points of emphasis to emerge. Axial coding involved assigning labels to themes (Miles & Huberman, 1994). Chunks of text were assigned to categories (e.g., 'Climate change perceptions' or 'mining: environmental impacts'). As interviews were organized based on a structured interview questionnaire, data were also coded by organizing text according to the specific question which elicited a response. Under each question, responses were then categorized more finely. For example, when respondents were asked about the social impacts of mining, responses were categorized: 'financial', 'family', 'hunting' amongst others. Selective coding is then applied to parse themes and compare data from between themes (Miles & Huberman, 1994). The content of each category was compared across individual codes to find overlapping themes. Using the same example of social impacts of mining, responses were linked to themes such as 'economy', and 'culture'. Finally, only at this stage were themes linked to broader theoretical concepts. A set of key themes at both the descriptive and conceptual level was thus generated.

Key themes were identified using the results from this analysis and were categorized according to perceived impacts from mining and climate change: historical, current, and anticipated. For example, a response that suggested mining damaged the environment was classified as: 'mining: environmental impacts'. Alternatively, a response that described the challenges of trying to work in the mine and simultaneously partake in cultural activities was classified as: 'mining: cultural impacts'. Many other categories were generated during data analysis.

## Ethics

The Ethics protocol defined by the University of Alberta Human Research Ethics Board was used to guide this thesis project. The research plan and interview questionnaires were reviewed and approved by the ethics board to ensure the study was rigorously constructed and would not pose an unacceptable risk of harm to participants. Additionally, the project was reviewed and approved of by the Aurora Research Institute—an organization that oversees research conduct in northern Canada. Research partners with the Tłı̨chǫ government were also consulted at all stages of the research process to ensure procedures were in accordance with Tłı̨chǫ ethical standards for research, research was conducted in a manner locals were comfortable with, and the outcomes of research were of interest.

Protocol for approaching respondents was defined by the board and the Department of Culture and Lands Protection (Tłı̨chǫ Government). Respondents were contacted well ahead of the interview and were provided with an information sheet describing the goals of the research project (see Appendix). Respondents were given the choice to participate in the interview. Before the interview, they were asked to sign consent forms (from both the University of Alberta and the Tłı̨chǫ Government) stating that they understood the risks of participating in the study. During the interview, respondents were free to refuse any questions or stop the interview if/when desired. Comments could also be made off-the-record. Post-interview, anonymity was ensure as respondents were identified by a code rather than by name. In any publications, names are used only when consent was given.

## Chapter 5- Results

The major themes that emerged during interviews are presented in this chapter. Responses from interviews tie into categories based on findings from the exploratory phase of research and a review of the literature on mining (under-)development and climate change vulnerability. Interviewees explained that several impacts from both mining and climate change have deeply affected community wellbeing for the Tłı̨chǫ. A limited sense of agency and local capacities to engage in development projects on equal footing, as well as the significant negative environmental and social impacts from historical and modern-day colonial development were key factors respondents believed to be threatening Tłı̨chǫ cultural stability and self-determination. Because of the state's role in historical assimilation processes, pushing resource development and continuing to limit the political capacity of the Tłı̨chǫ, the state was perceived to have negatively impacted Tłı̨chǫ community wellbeing. Several areas were emphasized as key to improving the outcomes of mining development for the Tłı̨chǫ, including but not limited to capturing a greater share of financial benefits locally, limiting the pace and scale of development to ensure cumulative impacts do not threaten ecological and cultural integrity of the communities, and engaging with corporate interests as equals. Factors constraining more equitable processes include the negative legacies of historical relationships between Tłı̨chǫ and settlers, as well as ongoing power imbalances between Tłı̨chǫ, state and corporate actors, and the short-term profiteering exhibited by state and corporate interests which does not align with Tłı̨chǫ values.

Under each of these themes, brief excerpts from interviews are provided to illustrate better the interviewees' responses. Because respondents are not always asked the same number of

questions, quantification is not particularly important, rather the content of themes themselves are significant.

## Mining Impacts

The impacts of mining on the totality of the Tłı̨chǫ socioecological system were explored in several sections of the interview questionnaire. Questions were developed based on themes already present in the literature review on the impacts of mining developments for Indigenous, northern, and local communities in general, in addition to those identified during the first phase of the research program. Themes relating to mining impacts are organized into several sections, including social impacts, cultural impacts, the natural resource regime, engagement efficacy, environmental impacts, as well as the influence of the territorial and federal governments in both development and protective capacities.

### Social Impacts

The relationship between mining and Tłı̨chǫ community wellbeing was one of the most common and significant themes of interest for interviewees. The following section outlines major themes emerging from interview data, suggesting that the development of mines on Tłı̨chǫ lands has had a mix of positive and negative effects on Tłı̨chǫ culture, economies, and community cohesion.

#### Impacts of Colonialism

*Exploitative Relationships in the 20$^{th}$ Century*

As settler-contact and northern development has disrupted Tłı̨chǫ communities since at least a century ago, one interview question related to the how mining has impacted the Tłı̨chǫ over time. While this question initially focussed on mining, it quickly became apparent that understanding the broader context of Canadian state-Tłı̨chǫ relations was essential to a robust understanding of

how development has negatively impacted Tłı̨chǫ wellbeing. Processes of assimilation were reported to be a key part of enabling 'northern development'. Many respondents emphasized how past relationships (or lack thereof) with both the state and prospectors continues to shape how these relationships exist today. The traumas caused by residential schools were a particularly salient and lasting cultural force according to multiple Tłı̨chǫ citizens and Elders:

> *I think residential school has stripped a lot of people of a certain generation from their pride in their language, pride in themselves, plus a lot of abuses that happened… a lot of people are suffering, and we see it trickle down to language, community cohesiveness, family togetherness, and so much more. (Tłı̨chǫ citizen #1)*

> *I was there, you know, at my camp, and the plane swooped down and grabbed me and took me to school. (Tłı̨chǫ Elder #1)*

Beyond residential schools, the forceful nature of resource development in the north also left a legacy of distrust of corporate and state actors. Most respondents expressed that past mining operations were unethical, environmentally destructive, and did not engage with Tłı̨chǫ people in a meaningful way. Environmental protections were nonexistent. They also highlighted how these processes made it loud and clear that the state did not care about Indigenous rights, favoring strategies that removed this obstacle so developing the resources in the north could take place unabated. One respondent put it this way: development was imposed upon the Tłı̨chǫ without their consent, and ever since they have been playing catch-up to try and protect their lands and wellbeing. The following responses highlight the one-sided nature of these relationships, with settlers prioritizing resources over cooperation with local Indigenous peoples.

> *[There is a] legacy of developments being carried out in sort of, like a unilateral way, by Canada, and in terms of supporting resource development and enabling resource development, with basically zero involvement from Tłı̨chǫ people... there's damage done there, for sure, and every community meeting, or every discussion we have about these topics, this kind of legacy comes up. (Government official #1)*

> *We didn't have that voice, we didn't have that power and that's a lot of the problem with the Crown and the federal government and the territorial government is that for a long time, we didn't have a say, and considering we were Indigenous and first peoples to this land, we were the last ones that were able to vote in Canada. So, we were displaced. They tried to assimilate us. (Tłı̨chǫ citizen #2)*

Respondents elaborated how outright lies and bad faith negotiations were used to manufacture Tłı̨chǫ consent to development, without knowledge of the magnitude and severity of the environmental and social harms these projects would entail. Of course, the very first prospectors did not bother to consult local peoples about the use of their lands, but those who did soon after took advantage of locals' lack of knowledge about what mining would entail. Multiple respondents emphasized that those who negotiated with mining companies did not understand the severity of mining impacts on the environment, nor the scale of development the first mines would eventually pave the way for.

> *From the Elders perspective, they didn't realize what was really going to happen on the land and on the ground. (Tłı̨chǫ Elder #2)*

Over the course of interviews, many citizens, Elders and government employees cited the colonial legacies of 20th century mining. Environmental problems from this era are discussed below, but equally significant for respondents was how this era was characterized by the state doing little to nothing to respect Indigenous rights. Overt assimilation was coupled with disregard for the Indigenous sovereignty over their lands; even when the federal government began to pay lip service to Indigenous rights in the latter part of the 20th century, resources were still valued more than Indigenous peoples and their rights to decide what happens on their lands. Using the example of Rayrock Uranium Mine, one respondent highlighted that when the state needed resources in the name of national interest, in this case, to make nuclear bombs, they took

those resources. This lens is also how multiple respondents viewed mineral mining for profit in general, as a state interest that supersedes consideration of Indigenous rights.

> *The way I look at it, 'cause it's kind of an emergency, eh?... they take it out, started to make a nuclear bomb. Yeah, that's what happened at Rayrock. (Tłı̨chǫ Elder #3)*

> *They went and mined whatever they want to: gold, you name it, and they took all the money out of a gold vein; they make money, and they left a mess, now it's people like me that have to live with it, clean it up. (Tłı̨chǫ Elder #4)*

*Contemporary Colonialism*

While many respondents associated colonialism with events that took place in the late 19th and 20th century, others commented on how colonialism continues to negatively affect Tłı̨chǫ wellbeing today. While overt violence no longer characterizes colonial relationships, pressure to assimilate into settler society is enormous due to the erosion of environments and traditional ways of life. Integrating into settler society was perceived to be necessary for survival, most obviously seen in the need to make money. With few alternative sources of profit, mining is seen as a necessary evil. But several respondents thought that a dependency on mining economies engenders individualism, materialism, and limit time available for communities to revitalize Tłı̨chǫ culture. One respondent sums up well the history of colonialism and how it has forced the Tłı̨chǫ to accept that their lands and lives are now governed by settler values:

> *Residential school, the policies of the federal government, the blunt force of colonization, the harsh force of colonization, the emphasis on English... television as a colonizing tool, all of those components together in addition to people being in the mines two [weeks] on two off in a wage force economy structured by capital, structured by the colonizer, with the values of the colonizer at play, which is: dig a lot of ground up and find some diamonds. So, that being the primary wage economy. (Government official #1)*

Additionally, poor social indicators highlight continued marginalization, with respondents mentioning that many Tłı̨chǫ still do not have their basic needs met consistently. Low levels of education and training, alcohol, and drug abuse, with few rehabilitation options, as well as a lack of access to police, medical and social services were other pertinent reports of neo-colonialism in Tłı̨chǫ communities. Additionally, respondents emphasized that these problems were worsened by the unfair allocation of the financial benefits from mining, with the territorial and federal governments capturing a greater than fair share of resource royalties and failing to reinvest the necessary capital in Tłı̨chǫ communities to enable them to flourish.

Another manifestation of colonial culture being imposed upon Tłı̨chǫ communities was how Tłı̨chǫ workers were subject to mistreatment at mines, including racism, limited opportunities for advancement, and threats of being fired for speaking out against unsafe environmental or operating practices. When Tłı̨chǫ workers were let go, several workers mentioned they were replaced with non- Tłı̨chǫ workers, in violation of the terms of the IBA's companies signed with local communities. In general, respondents bemoaned the colonial, hierarchical culture that workers were subjected to at the mines, a culture based on efficiency and maximizing financial benefits at the cost of worker wellbeing and environmental health. Due to the extractive mindset of mining companies and their ignorance of Tłı̨chǫ land ethics, respondents commented on how most Tłı̨chǫ workers did not find the work particularly fulfilling, with effects ranging from substance abuse, debt, and poor mental health as workers struggled to cope. Several respondents offered concrete instances of their personal experience with the intimidation Tłı̨chǫ workers faced on the job, to keep quiet about shady practices or lose their livelihood.

> *But if he said anything, they're going to get rid of him. They can still go after him, maybe you think so, he said you know, there's a lot of stuff that they do that people don't like. The workers, they can't say nothing. (Tłı̨chǫ citizen #3)*

> *You going to have to watch what you say. They can fire you too, yeah? I seen that happen, yeah. (Tłı̨chǫ citizen #7)*

Economic Impacts

Proponents often emphasize the impressive financial benefits mining operations provides for the local economy, so we asked about participants' livelihood and the financial impacts the mining economy has brought to Tłı̨chǫ communities. In response, many interviewees commented on the economic benefits mining has brought to Tłı̨chǫ communities through individual employment, resource royalties and impact benefit agreements. Respondents emphasized the boon this has been to fund participation in cultural activities like hunting, which are becoming prohibitively expensive due to the shrinking size of local caribou herds as well as rising costs of supplies in the north. Money gained from employment in the mines was also reported to be crucial to enabling Tłı̨chǫ individuals and communities to be independent, something multiple respondents took pride in.

> *So, with people having working in the mines, having their own money to spend, making sure that their household is well taken care of, and also having fun time with their money, I guess, holidays and buying sports toys and going out on the land and have cabins. They have more funds to do a lot more Western and traditional activities. (Tłı̨chǫ citizen #1)*

It was not lost on respondents that few other economic alternatives appear to exist, and the Tłı̨chǫ are dependent on mining for a significant chunk of their incomes. Economic hardship was reported to be widespread in the generations living prior to mines opening.

> *25-30 years ago, it was before the diamond mines came into the North here in the Northwest Territories. That was not a lot of employment opportunities for people. If they didn't leave their community, the only jobs available in the community was either working in the store, school, bus driver. (Tłı̨chǫ citizen #1)*

In the 30 years since, mines have become a staple industry offering employment for many Tłı̨chǫ, but other job opportunities have not materialized and a strong dependency on mining remains. Multiple respondents expressed fear that mine closure would mean unemployment spikes in communities, as well as the Tłı̨chǫ government would lose access to revenue that is critical to funding services and cultural activities.

> *If…there's no mine, where are we going to find work? (Tłı̨chǫ Elder #4)*

Somewhat surprisingly given most respondents emphasis on how essential the jobs in mining are for their communities, only a small percentage of the total Tłı̨chǫ population work in the mines. Nevertheless, respondents relayed that financial benefits often spread to extended families and beyond due to the collectivist tendencies inherent to Tłı̨chǫ culture.

> *Unlike in non-Tłı̨chǫ society, in Tłı̨chǫ society I find that one household, one income can be spread quite broadly within a family or across like multiple, a variety of families. (Tłı̨chǫ citizen #4)*

The sharing of mining revenues beyond workers operated at an institutional level as well, with mining revenue used by the Tłı̨chǫ government to support cultural programming, perhaps the most often cited community-level positive benefit to come out of mining. One source of pride for many respondents was the success of the Tłı̨chǫ Ịmbè on the Land program, which is funded by mining revenues collected by the Tłı̨chǫ government from impact benefit agreements with mines. Youth learn language, history, and other cultural skills directly from Elders and other teachers while out on the land. This program would not be possible without the money from the mines to pay salaries, fuel transport, and buy supplies. Respondents took pride in the Tłı̨chǫ using the capital from mining to invest in what was most important to their communities: strengthening Tłı̨chǫ culture.

> *What the Tłı̨chǫ have done with the money from the revenues of diamond mines, they've taken those revenues and they've applied them against things they care most about. Tłı̨chǫ Ɨmbè Program being a good example: more than 75 youth have gone through the Ɨmbè program, had access to Elders, had access to traditional skills, and had, as a result of that funding, eight weeks of on the land programming annually for the last... I'm going to say last eight years … and so it is really fundamental to have access to capital. (Government official #1)*

However, while many respondents believed the Tłı̨chǫ were making effective use of the financial resources they have captured, there is significant consternation that the financial gains from the mines were a pittance compared to the profits corporations generate, or even the resource royalties captured by the territorial and federal governments. As the terms of IBA's are private, details were scarce, but respondents pointed to the billions generated by the mines while their communities remain economically marginalized as evidence of this claim. Compounding this inequality, respondents also cited how higher paying jobs were filled by white, southern workers, not the Tłı̨chǫ, further limiting the total financial benefits Tłı̨chǫ are able to capture. Mining jobs are also overwhelmingly filled by men, creating gendered income inequality in Tłı̨chǫ communities. We also heard reports of favoritism in hiring decisions, with a few local families holding a disproportionate amount of mining and government jobs. As such, multiple respondents feel mining has not financially benefitted all the Tłı̨chǫ equally.

> *Majority of our positions are entry level. Very little mid management or higher management, very little. We're not represented in that area… as we should be. (Tłı̨chǫ citizen #5)*

*Future Economic Outlook*

Additional doubts were raised by multiple participants about the long-term sustainability of this income stream as multiple major mines are projected to close in the next ten years or less with no current plans confirmed for new mining activities; for both individuals working at the mines and

the community government, there are no readymade replacements for the income the mines generate. New mines are seen as desirable and likely by many, and the resource base is far from tapped, but some believed the government had significant work to do if there was to be a seamless transition between legacy and new projects, otherwise, a gap may occur which may be harmful to communities.

> *There will be a rapid drop off in revenues for the Tłı̨chǫ government… there may be some appetite for new projects. That said, there's not a lot on the horizon and the Tłı̨chǫ government has a lot of work to do… (Tłı̨chǫ citizen #6)*

> *Yes, people want jobs; my son works here, right from day one, and in two years time this is going to shut down. Now, where do we put my son? (Tłı̨chǫ Elder #5)*

Despite being aware of the short-term nature of mining projects due to impending closures, a continued dependency on the industry was the dominant perspective we heard. Alternative employment opportunities are perceived as vanishingly scarce, therefore insufficient to provide for the needs of the communities, leading to resignation with continued dependence on the mining industry. Interestingly, very few respondents sought new avenues for development outside of extractive industry, nor a return to traditional ways of life. Resignation with a continued integration into industrial ways of life was portrayed by many as undesirable, but unavoidable.

> *There's lots of other economies that could be looked for… both the public administration of land, and then, particularly if you were to think about it being conservation lands, and then also for the opportunities that come from Public Lands Management, like Guardian programs that the Tłı̨chǫ government is getting up and running, those jobs are not as plentiful as they're... they are when you're digging a hole up in the ground. (Tłı̨chǫ citizen #6)*

> *The best thing we have is to mine… that's the only thing, that's the only way I see us making money. what else? I thought about this for a long time: how can we make money? Agriculture? Can't raise nothing. You can't bring cattle in, start ranching, or... what other ways can we make money? (Tłı̨chǫ Elder #4)*

Cultural Impacts

Cultural impacts were a consistent theme and many passionate responses identified cultural changes that have occurred contemporaneously with mining on Tłı̨chǫ lands. This category was somewhat hard to pin down as multiple respondents emphasized the holistic nature of Tłı̨chǫ culture and how impacts on any one area, economic, environmental, social, inevitably rippled out and affected culture in some fashion. Therefore, changes from mining that impact any dimension of Tłı̨chǫ socioecological systems often impacts the whole, as respondents emphasized Tłı̨chǫ culture is interdependent with the land, past and future generations, and relationships with other nations, companies, and governments.

> *Language, caribou… everything is tied. So unfortunately, when I say like, one thing, it's all tied to the same thing. (Tłı̨chǫ citizen #6)*
>
> *The Tłı̨chǫ, they think about everything. So, it's not just from an environmental perspective, we have to think about how does it benefit our people? How does it you know, like, affect our relationships with other nations? How does it affect like, like, you know, like the agreements we already have with other governments, so like looking at from like, environmental perspective, health, social wellbeing, like... yeah, just all sorts of ways, and then also trying to figure out how it affects the future as well, and future generations. (Tłı̨chǫ citizen #4)*

*Overlap Between Economic and Cultural Impacts*

The economic impacts mentioned in the previous section had significant cultural repercussions, as money and the wage economy came to be increasingly important in structuring day to day life. Respondents discussed how settler values such as concern for money and material goods have slowly infiltrated Tłı̨chǫ culture as more and more individuals have worked at the mines or other wage economy jobs brought about by colonization. While respondents reported Tłı̨chǫ communities have been changed in ways both positive and negative by the wage economy, one impact is that financial benefits from mining jobs come at the expense of more fulfilling careers. Over the course of interviews, several respondents highlighted that while the economic benefits

from the mines are needed, at least in the short term, there is a preference for more diverse and culturally appropriate employment opportunities. The work is not particularly fulfilling for most people; in the words of one respondent:

> *Yeah, like working at the mine is, it makes money, but I don't think people like it. Very few people actually enjoy the work. It's just the way to get funding to support your family, right? And to have money to go hunting. (Tłı̨chǫ citizen #3)*

Another consequence of Tłı̨chǫ becoming increasingly integrated into money economies was that concern for cash bled from mining into other aspects of life, changing cultural values. For example, a respondent reported people stopped coming to community events if they were not paid (as mining companies often pay for community consultations), degrading community closeness that was perceived by respondents as a foundational strength of the Tłı̨chǫ people. As a concrete example of the encroachment of individualism, an Elder mentioned how caribou that used to be divided for the use of multiple families were now often sold for cash, and this incentivized overhunting.

> *If you shoot four, five, that's fine. But we've seen people to shoot 20, 30, 40. That's too much! One, I seen one... one group they shot 40, and the following week they shot another 40…it's pretty hard... you know, 40 caribou, it could be feed... by.... eight, could be eight family, 5 each, for the whole year. Instead, just for money, to sell it. (Tłı̨chǫ Elder #3)*

When speaking more broadly about balancing economic benefits and the stability of Tłı̨chǫ culture, doubts were raised by multiple respondents whether the economic benefits were net positive given the deleterious environmental and cultural harms that resource extraction has caused. One major concern was that in getting used to mining, Tłı̨chǫ are increasingly planning futures that are structured by settler values. Even money itself was reported to be damaging by some respondents, as it creates a dependency on continual cash flow and a more materialistic lifestyle, driving some into debt and devaluing traditional values in favor of monetary ones.

Multiple respondents also pointed out money enables the purchase of drugs and alcohol which has been hugely damaging to communities.

*Other Negative Effects on Culture*

Besides the cultural impacts the new wage economy has created, respondents highlighted several other mostly deleterious effects that mining has had on Tłı̨chǫ culture. Lack of time to practice language and culture was the single most frequently mentioned negative impact of working at the mines. This was seen to be limiting recent attempts to revitalize elements of Tłı̨chǫ culture that were suppressed by the impacts of colonialism in the 20th century.

> *The biggest loss I think is the language... and time, spending time on your language, spending time teaching your language, spending time with your children talking your own language. (Tłı̨chǫ citizen #1)*

Other negative impacts included the ecological destruction that mining incurred, disrupting cultural activities like hunting or connecting to essential cultural stories often told out on the land, leading to boredom and lack of storytelling. For one Elder, the effects on community connectedness and mental health generally were huge when faced with the impoverishment of life that has occurred as the Tłı̨chǫ have integrated into the mundane wage economy and less fulfilling forms of entertainment.

> *I'm kind of a little bit worried because before we used to go to house, talk and everything… We'd come in, everybody respected each other, give us a cup of tea, and we talk… Now, I will go see somebody house... you know what kind of story they can give. Yesterday we had Bingo, I look for one number or [another], you know? And next week we're going to have same thing again. What stories would they have now? Nothing! Nothing like hunting, trapping. (Tłı̨chǫ Elder #3)*

In many ways, industrial development is clearly opposed to Tłı̨chǫ culture. One respondent bemoaned how new roads near Whatì blocked a traditional seasonal trail. Making matters worse, this concern was raised by Tłı̨chǫ to the mining operation constructing the road, and they asked

for a tunnel to be built so they could go under the road, but it never was. This is one of many clear examples of how the broader story of how environmental degradation that has occurred as mines have expanded has significantly disrupted Tłı̨chǫ culture. One respondent thought this was especially hard on youth who are struggling to connect to their cultural identity:

> *... your grandparents who are great hunters, and you're, you know, your parents were that, and then you're supposed to be that, but you're not able to. So, you know, your identity. You know, you don't know who you are anymore, right? You kind of lose that identity. I see a lot of that, with people feeling like they're not who they're supposed to be. So, they get really lost. And then it turns to alcohol, and, you know, all these other social problems, right? (Government official #2)*

In addition to the negative effect environmental degradation has had on Tłı̨chǫ culture, another concern is the two-week-on, two-off schedule mine workers follow, as this makes it hard for workers to spend time with their families, keep up Tłı̨chǫ language, and participate in cultural activities. Mine workers have learned to live with half the amount of time spent with their families, hunting and participating in the community—and half living isolated from this social fabric at their mining job. Due to travel and an unavoidable adjustment period between work and home schedules, many respondents reported it feels like more time is spent at work than at home, a source of sadness for almost all mine workers and their families.

> *People are away from their families for long periods of time, and I think that disrupts the family life: having a mother or a father that comes and goes, and not there all the time (Tłı̨chǫ citizen #4)*

> *It's kind of hard on the family. I spent eight Christmases down there [in the mines], eight Christmases… no time off. (Tłı̨chǫ Elder #2)*

### *Responses to Cultural Impacts*

Recognizing the substantial negative effects of mining, many respondents highlighted the need to revitalize Tłı̨chǫ culture. Some respondents argued for an approach that straddled settler and Tłı̨chǫ education systems, with youth learning the skills necessary to thrive in both contexts. A few Elders believed the best response to the changes was to reject settler modes of life in favor of

traditional ones, but more commonly respondents passed on that connecting to Tłı̨chǫ culture was the best antidote to the assimilative pressures caused by integration into mining economies, but this could be done effectively while living under the structures instantiated by settler development in the north.

> *Things have to be changed. Let's go back to old ways. (Tłı̨chǫ Elder #3)*
>
> *The more that people can go on the land and build up their identity… the more that they can do that, you know, they're more self fulfilled, I guess, they're more content with their life. They feel like they have a meaning in life, a purpose. (Government official #2)*

We also heard about how Elders are slowly being lost to old age, with a break in the passing on of stories to the generations following them due to the pressures of assimilation—both overt violence in the 20th century, and more insidious processes of assimilation that are ongoing. Language loss, substance abuse or not being at home due to a job at the mine were manifestations of this slow violence reported to us by respondents. Regardless of the source of blame, we heard consistent reports of the breakdown in communication between generations, a huge concern for community members who placed tremendous value on the wisdom held by Elders. Elders' wisdom was unanimously viewed as one of the most essential aspects of Tłı̨chǫ culture, and many respondents highlighted the urgent need to capture their stories and utilize their wisdom to cultivate desirable futures. One respondent relayed a moving story illustrating the foresight Elders possess.

> *When the Elders speak, their words are so, so great. People that have said things 100 years ago, I remember a story that was told to me from somebody on the Great Bear Lake. This young girl, she's probably like, 80 by now. She said when she was a young, young, a young child just sitting with her grandfather on the shores of Great Slave, Great Bear Lake. And they're looking out on this beautiful lake, calm, beautiful... the water slapping against the rock, and the grandfather said to the granddaughter, you see all this water? One day... one day, it's going to be gone, it's going to cost you money. You're going to have to buy water. And, and she was like looking, looking on the lake and she said, how can that be? It's right here! So, when Elders speak, it's important to listen, to listen (Tłı̨chǫ citizen #1).*

**Environmental Impacts**

Moving beyond the social sphere, participants were asked about the impacts of mining on Tłı̨chǫ lands. In fact, many respondents thought the negative environmental impacts of mining development were the most significant and long-lasting scars, due to the deep connection between Tłı̨chǫ land and wellbeing.

> *This is our home: before and after. I think the biggest, the hardest effects are the environment. (Tłı̨chǫ citizen #2)*

The damages done by historical mines which operated prior to modern environmental monitoring programs was seen as still having negative impacts today. Rayrock Mine was a source of consternation for multiple respondents, as uranium pollution persists in an area which was once a traditional gathering ground.

> *Rayrock Mine is, was in the heart of Tłı̨chǫ traditional territory, it's still there, and there's a big hole in the middle of that heart that people don't use and are afraid of, and have a really negative and traumatic relationship with… we're working through remediation, a new phase of remediation on that, that seeks to kind of like, turn the corner, but it's not going to erase that ever, like that's there, forever, that damage that was done that that relationship problem, and, and even just physically and chemically, like you can't put it back together. (Government official #3)*

> *Rayrock... I walked to school from there when I was young... they left a mess… we're told there's a red zone, you can't get close to it. Nobody could. Can't stay there, can't sleep there. Badly, badly contaminated. (Tłı̨chǫ Elder #4)*

Many respondents framed their concern about the negative environmental impacts of mining in terms of how it affected local wildlife populations, citing both a sense of deep ethical responsibility that Tłı̨chǫ culture has always had to maintain healthy relationships with the environment, as well as practical concern, with animal products being a high proportion of traditional Tłı̨chǫ diets. Of particular significance was the dramatic decline of the Bathurst and

Bluenose caribou herds, and many respondents blamed the decline on habitat fragmentation and pollution caused by mining. One respondent who worked at the mine for decades remembered that as recently as 20 years ago, hundreds of caribou could be seen in amongst the equipment at the mine site; towards the end of his career in 2018, not one could be seen. Others corroborated this with their own observations.

> *I used to have a house here somewhere, when the caribou herd they used to come, 700,000. Now, there's 6000 (Tłı̨chǫ Elder #4)*

> *Okay, so this past summer we had meeting… we knew where are the caribou moving, you know? The 26-kilometer road, caribou go by, and turn away. Not one of them would cross. (Tłı̨chǫ Elder #3)*

As a central part of Tłı̨chǫ culture, the decline of the caribou has caused dismay as it upsets the ability to participate in cultural activities, as mentioned above. Multiple respondents expressed concern over the impact this was having on young people, who were unable to learn about Tłı̨chǫ culture effectively, as this type of education could not be relayed in a classroom but required hands on learning out on the land. But due to the decline of the species, a no hunt zone exists for barren ground caribou near Tłı̨chǫ communities, making this type of education expensive and hard to get on a consistent basis.

> *Caribou is like a huge deal. Because it just signifies like, so much more than just like, a way of life and like culture and food source. It's like rights to harvest, it's you know, like everything (Tłı̨chǫ citizen #7)*

> *A lot of people are concerned with how the mines impact the caribou and impact the caribou migration... they don't have the ability to maintain that connection to the land and connection to the language, culture and way of life… because of the decline, there's like a no hunting zone over caribou. So, people are not allowed to go out to these places anymore. And then, I mean, you just like disconnect a whole generation now, it's been almost ten years, that they're not able to go to these places and do what, you know, their like, culture tells them to do, and be who they're supposed to be. (Government official #2)*

In general, damages to the land—beyond impacts on caribou populations—were a major concern for Tłı̨chǫ people as they are not only dependent upon it for subsistence but feel a profound sense of connection and responsibility to maintain ethically and ecologically sound relationships with the land. An Elder commented on how Tłı̨chǫ culture was grounded in right relationship with the land and the Tłı̨chǫ could not thrive in the absence of healthy ecosystems.

> *So, you take care of our water, take care of our land, take care of our wildlife, the mine can go there. That's what the Elders said, and I said the same. Because the elders use a word: the land is our freezer, it provides food for us. Moose, muskox, ducks, beavers, fish, you name it. If something happened to the water, what would happen to the fish? If something happened to the fish, then the animals that use the fish are going to be affected too, and if the animals get sick, what do we do? We go trapping and we take fur, then we're going to get sick, too. So, everything is attached (Tłı̨chǫ Elder #4)*

Again, and again participants mentioned that the ways that mining companies and Tłı̨chǫ treat the land are based on fundamentally different ethical standards, and environmental protections up to Tłı̨chǫ standards need to be more deeply ingrained in the permitting and operation of future mines. Protection should be funded by proponents—issues with securing adequate funding for clean up in the past were commonly reported—but led by Tłı̨chǫ, who have a right to govern how their land is treated.

> *So, next time if there's going to be a mine here, before you give them a permit or anything to start, make sure they have money on the table first… and then I don't have to bother with the government, that's what I told the government, I didn't have to bother you if the mining companies put money upfront before they start. So, when they leave, we could clean it up. (Tłı̨chǫ Elder #4)*

In addition to issues with securing funding in the past, mining companies did not meet the environmental protections laid out in the agreements signed prior to operation, favoring shortcuts over more rigorous waste management strategies. These issues continue today, although monitoring is somewhat improved. This was highlighted by one respondent who worked at the

mine and saw waste dumped in pits and covered, as opposed to being flown out as promised in the agreements signed prior to operation.

> *They dig the big hole out there, smash all the trucks, pave it, cover it up… all the diesel water, they cover it (Tłı̨chǫ Elder #5)*

Compounding many respondents' concerns, the cumulative impacts of mines were seen to be inadequately accounted for. Several respondents questioned those impacts can ever be effectively remediated, arguing that mining changes the landscape forever, regardless of attention to mitigation and cleanup. Another respondent noted that in the past, Tłı̨chǫ Elders have wanted to limit the number of mines operating at any one time to mitigate these cumulative impacts. Broadly, there was concern that cleanup was not receiving the attention it needs, especially as the total number of historical and operating mines continues to grow.

> *That's there, forever, that damage that was done… physically and chemically, like you can't put it back together. (Government official #2)*

> *Alexis Arrowmaker said at one time, like, oh, there should be like, no more than five mines in the region at one time (Government official #3).*

With environmental degradation a given, why was mining still so widely supported? Many pointed out that the mines have created a wicked problem for the Tłı̨chǫ: the money from mining supports essential cultural activities like hunting, and indeed most key services, while simultaneously disrupting the healthy ecology necessary for Tłı̨chǫ culture to thrive. This traps the Tłı̨chǫ into a dependency on mining, even as it upsets the foundation—healthy environments—on which culture rests. A hunting story illustrates just how hard it is to hunt in contemporary, degraded conditions, and how you need significant financial resources to undertake this once daily activity.

*Last winter, I was hunting with the guys in Wekweètì, they drive from Wekweètì on the winter road all the way to Yellowknife that's probably like an eight to ten-hour drive. And then we drive from here, like*

*another 10–12-hour drive with our trucks up on the ice road. And then we Ski-Doo like 200 kilometers in the day to hunt caribou close to the Nunavut border. So, the costs are just like yeah, it's really expensive to go hunting… there's the, like, the impact of a mine on the land and to the wildlife. But that's also because of the decline of the caribou. So, you have to go really far to go hunting caribou. So, you need a lot more money to hunt caribou these days than you did before when the caribou was right outside of your community. (Government official #2)*

## Climate Change Impacts

The present and anticipated impacts of climate change and the many implications of a rapidly warming climate will have on Tłı̨chǫ wellbeing were explored in several sections of the interview questionnaire. Questions were developed based on themes already present in the literature review on the many biophysical impacts of warming such as permafrost melt, forest fires and changes to wildlife populations, as well as predicted costs and risks for essential human infrastructure, including mining infrastructure and literature on Indigenous-led climate adaptation and resilience informed this section of the interview. Themes relating to climate impacts are organized into several sections, including impacts on the environment and wildlife, risks and resilience, and the adaptations perceived to be needed to cope with climate impacts effectively.

### Environmental

#### *Observed Impacts*

Two questions were on the topic of biophysical impacts of climate change: first, those that have been perceived already, and second, those that were anticipated to occur. We learned that Tłı̨chǫ are aware of climate change and have seen impacts occur in many areas including levels of warming that were unheard of historically and general changes in seasonality, especially related to ice thickness and snow cover. Changing seasonality has disrupted travel and concern was felt amongst several respondents about how big changes may get in the future.

> *October 16, the lake was still open! Look at the change, okay? Now, having said that, what'll it be like the next five years? I don't think it's going to get cold, because I'll tell you, when I was young, we go hunting... it was about 50 to 55 [below] that's how cold it was. It was very, very cold. Now, I don't see that anymore. (Tłı̨chǫ Elder #2)*

Like respondents' perspectives on the impacts of mining, we heard that climate impacts are likely to have broad consequences: if one part of the system is affected, many others will be. Because of this, respondents seemed to view climate change as both hard to predict and not just 'global warming'. The historical and ongoing impacts of mining also confound efforts to understand the impacts climate change is having. Adding to the complexity, these broader ecological impacts inevitably lead to significant cultural impacts, especially as climate change effects key species the Tłı̨chǫ depend upon as food. Many reported seeing changing patterns and abundance of the species near communities, such as more bears and bison migrating north.

> *But, having said that climate change is going to have an impact on all... everything. Water, wildlife, you name it. And me, I'm not used to heat. If it gets too hot, how will the people take it? Now, I was telling you about the fish, the people who live on fish all the time, I got to have fish every week! You know, there's a lot of people out there who are used to fish. I'm not used to store meat; I can't live on store meat at all. So, we depend on wildlife out there, eh? If something happens to... because of climate change, how will we live there? (Tłı̨chǫ Elder #4)*

> *Where's the caribou going to go? It's going to do disappear... and what are we going to live on? That's because of climate change, that's what's going to happen, eh? (Tłı̨chǫ Elder #4)*

Respondents relayed concerns about forest fires, too, with mentions of close calls with fires near Behchokǫ̀, Wekweètì and Gamètì. We heard reports of more fires near other communities around this time too. An anticipated increase in fires due to climate change—something respondents feared but were not certain is going to occur—was a worry for infrastructure. It also likely has effects on caribou as it burns the vegetation that is their food source, changing how close the herds come to communities.

> *Forest fires, I guess, is the main thing that people see from climate change, like the increase in forest fires… burning the winter range of the caribou. And when you're burning the winter range, like then they don't migrate to where they used to be before. So, like in 2014, [and] I think in 2016*

> *there was like, a really big, like fires where they burned, huge areas, like massive areas was burned. And then caribou just stopped coming to a lot of places because of that. And last summer too, at least the first few months of the summer was quite, really dry and hot. And there were some really big fires like one out by Wekweètì, north of Wekweètì. And that again, like, you know, it really like deters caribou from moving into those areas anymore. (Government Official #3)*

### *Future Concerns*

In terms of locals' worries for the future, warming temperatures were seen to be a significant threat to wildlife, who respondents mentioned—citing both traditional and scientific knowledge, in different cases—are ill-adapted to a warming climate. Without healthy animal populations, respondents expressed worries for future generations to effectively learn Tłı̨chǫ culture. These impacts were seen as especially deleterious when considered cumulatively with the impacts of mining. Worries also existed that climate change is already threatening their ability to hunt and be on the land safely.

> *So, climate change is going to have a big impact on us. Things will change. What's going to happen to our beaver? What's going to happen to all the wildlife that we need, that we live on, where will they go to? Or are they going to die up? Because I know the fish are cold blooded animal… they're not going to like it when it's too hot, the ducks, muskrat, you name it, all the animals that we live on... woodland caribou, moose... I'm just thinking sometimes... and then, I think about myself, at this age... not going to see another 40 years, I doubt it. But then I think about my grandchild, my kids, their kids, then that, then I begin to worry, so. (Tłı̨chǫ Elder #1)*

### *Uncertainty about Climate Change*

While changes to the land have been observed, respondents generally did not express their observations through the lens of climate change. Many expressed uncertainties about what to attribute to mining and what to attribute to climate change, and how this is complicating monitoring of the environmental impacts of mining.

> *What to attribute changes or impacts, you know, are they from the mines or are they from climate change? And like, not having the capacity to figure out, I don't know, where it's like, coming from. How does any, how do other people like figure out, like, you know, example: impacts to caribou? (Tłı̨chǫ citizen #4)*

A common theme was that Tłı̨chǫ have always observed a perpetually changing landscape for millennia, and the new moniker of ‘climate change’ was emblematic of a decidedly Western universalism, an attitude the Tłı̨chǫ are wary of. For one respondent, the frame ‘climate change’ ignores Indigenous place-based ways of knowing and continues a trend of placing scientific knowledge in a place of authority that dictates how Indigenous people must behave.

> *I hate climate change. I hate the word climate change. (Tłı̨chǫ citizen #2)*

> *As Indigenous people to this to this land, we have seen climate change at all different levels for 1000s of years. It changes. We have seen migrations move for 1000s of years. And, but the thing is, because we don't, we didn't have that pen and paper, or that computer or anything to put it down and write it and because we didn't have that, M.Sc. or that P.Eng or any of that stuff and it wasn't historically noted... It's not true. (Tłı̨chǫ citizen #2)*

Sense of Resilience

One interview question asked about how climate change is likely to shape Tłı̨chǫ land and wellbeing into the future, and overwhelmingly, respondents’ confidence in the resilience of Tłı̨chǫ people to adapt to a changing climate was apparent. Many respondents pointed to the historical resilience of the Tłı̨chǫ in surviving changing environmental conditions, and the unique capacities they had that those in settler society may not. According to one respondent, in many ways adaptation means a return to following the dictums of the land, not settler values, something the Tłı̨chǫ are historically very comfortable with.

> *Tłı̨chǫ were nomadic people, right? We were all over the place: we followed the caribou; we followed where the fish were in the different seasons and everything. It wasn't one person that dictated it. It never was. We followed the land, we followed the water, we followed the wind, we followed the animals, they were the bosses. One thing that's always heard, I always heard: the weather's always boss, the land is always the boss, the water is always the boss. It's always going to be the boss over what we do. So we maintain that, that if we don't have the land anymore, who's our boss? We don't have the water anymore to drink, who's our boss? We're basically in limbo. So now we got to be, we got to look at our big bosses and we've got to work with that, and we've got to manage that. It's not about being the weather's boss, it's about managing that they are the boss and that they're going to be there forever past us. So, I think that's where we need to be. (Tłı̨chǫ citizen #2)*

The deep knowledge of the land and how to make a living off it was cited by multiple respondents as the key factor that would enable Tłı̨chǫ communities to cope with coming changes. Respondents pointed to traditional skills, community closeness, and access to vast swaths of land and animals as reasons to believe the Tłı̨chǫ could be uniquely resilient in ways other people cannot.

> *You live in the city, you can't go fishing the way I do, you can't go trapping the way our people do, can't go moose hunting the way we do. We're free to go anywhere we want, and live, you know. If I take off on the Ski-Doo out here, like anybody in the north would do, set up snare for rabbit, kill rabbit, chicken, ptarmigan: I can live on it. (Tłı̨chǫ Elder #4)*

> *When you're in the bush, it's a lot different. Like you can throw a safe-, a territorial and provincial safety manual at it and a lot of it, a lot of it works, but a lot of it doesn't. (Tłı̨chǫ citizen #2)*

Multiple perspectives held that adaptation is necessary—to various degrees, but the problems posed by climate change are by no means insurmountable. A government official cited workshops they had attended as evidence that local governments were aware of the risk and had plans in place to manage climate change. Another took a similar stance, but worried about the safety of seasonal supply runs and other travel, especially considering the long-distance nature of many services. This example is illustrative of a common theme: the most essential adaptations for climate change are areas of underinvestment in Tłı̨chǫ communities, and the north more generally. Updating infrastructure and services is overdue and only more pressing given the added risk of climate change. The dominant perspective we heard is that the ways in which the Tłı̨chǫ are vulnerable are mostly due to their position of social marginalization, not biophysical changes overwhelming their ability to adapt.

> *The effect mainly is on like, needing to adapt and things like that needing to supply communities with groceries and everything. And, you know, for, for electricity production, all that sort of stuff. (Government official #3)*

> *Programs in community [have] made people very aware of their place in the Arctic, and the vulnerability of it. At times, I think that that spills over into other communities as well. So, I think*

> *about I'm thinking about it really from a community resilience perspective, rather than from the perspective of here's how things are going to get nasty. (Tłı̨chǫ citizen #1)*

In terms of what specific actions people should take locally, many respondents related that they either had not thought about it or did not see the need for much to change. Those respondents that did generally believed that climate change is a global problem and pointed out that everyone had to do their part. The Tłı̨chǫ were happy to do theirs, as environmental stewardship has long been a core value that has allowed the Tłı̨chǫ to exist in harmony with the landscape for millennia, but many respondents recognized they could only do so much. Short-term, practical adaptations like building all-season roads to all communities were the most common ideas for adaptation.

> *So, what are we going to do? We have to work together, yes…. I don't know what we can do, but... I bet it's [climate change] having an effect on the whole world. (Tłı̨chǫ Elder #4)*

Climate Impacts on Mining Infrastructure

Respondents also spoke about the consequences anticipated for mining infrastructure, a key concern as mining operations continually depend upon ice roads and air travel for fuel, supplies and worker transit. Respondents also pointed to how essential infrastructure was for mines to keep operating and expressed concerns over how frozen mine waste will age as the climate warms. Some worried climate change plus historical mining would result in significant cumulative impacts.

> *You rely on frozen core waste rock piles, you know, Giants got frozen arsenic trioxide, not a small example, but even… I think we heard on the radio this morning, it's probably going to be six degrees in the north or something, even if it's one and a half globally. And so it's like, okay, well, we got waste rock piles that are supposed to freeze to prevent whatever, metal leaching, acid rock drainage, and stuff like that. (Government official #3)*

Thinking about long term impacts, a select few respondents worried climate change could increase operating costs for currently operating mines and potentially even decrease the

attractiveness of the region for future investment if costs increase too much. They pointed to the long-distance freight needed to build and maintain mines as a source of vulnerability that could be affected in the future. Yet, those who held this view were unable to suggest new economic avenues, as they believed mining would necessarily be a big part of the future for Tłı̨chǫ, even as they stated it would be significantly negatively impacted by climate change.

> *As the weather gets warmer and warmer, if there's no road, how the mines going to run? There is no way they're going to fly fuel, you know fly fuel in. There's no way, I don't see that happening. (Tłı̨chǫ Elder #3)*

## Tłı̨chǫ Self-Determination

Hovering over the more concrete themes of mining and climate impacts were questions surrounding how confident the Tłı̨chǫ are in their ability to achieve desirable futures. Research on Indigenous self-determination suggests that many factors are responsible for sustained community wellbeing, including local capacities, fair and mutually beneficial relationships with government and corporate interests, and local ability to maintain and strengthen culture. Questions were developed based on themes already present in the literature review on historical and contemporary Indigenous struggles for self-determination, in addition to themes of interest identified during the first phase of the research program. Themes are organized into several sections, including the place mining will and should hold in shaping the future, local capacities, how satisfied locals were with their relationships with corporations and government, and concerns related to Tłı̨chǫ youth and future generations.

### The Role of Mining in the Future

One interview question asked respondents to consider the role mining will or should play in enabling Tłı̨chǫ to achieve locally sought future outcomes. Most people expressed some level of support for new projects, although as discussed above, this often came from a place of

resignation to the limited economic opportunities the Tłı̨chǫ have access to rather than enthusiasm. One respondent also made a crucial point that the Tłı̨chǫ have invested much time and resources into building capacities related to mining. Cultivating alternative economic visions would require substantial capacity building in another area, something many locals are averse to because it is only recently that Tłı̨chǫ felt informed and capable enough to engage with mining interests effectively. In others, a dependency on the mining industry has been further strengthened by the Tłı̨chǫ investing so heavily into capacities in this area. As a result, alternative economic visions are not commonly discussed.

> *Unless there was something else proposed, like, it's just like such a big societal thing, we're already like, dependent on so many outside things, and so trying to figure out how to maintain that if we want that. Like it'd be a significant shift if we tried to do something very drastically different… we just spent the last however many years dealing with mining companies really only, and we're still trying to figure out how to deal with them. (Tłı̨chǫ citizen #6)*

*Contemporary Terms of Engagement*

The Tłı̨chǫ Land Claim settled in 2005 was seen as a vital step toward maximizing the local benefits of mining, as proponents now are mandated by law to engage Tłı̨chǫ to begin any project. However, while this was seen as an improvement over the past, respondents made clear that significant capacities had to be built up to make good on the spirit of the agreement. They cited the environmental harms and broken promises around hiring agreements for projects that have begun after the land claim was settled as evidence that the settlement does not ensure everything falls into place. There was a level of agreement that in the future, mining must be improved to ensure it benefits the Tłı̨chǫ as much as corporate and state interests. Despite shortcomings in the past, there was a sense these improvements were within reach.

> *I think it's a necessity, mining is a necessity. But if we could do it if we could do it more environmentally friendly, less of an environmental footprint. Traditionally and culturally effective mining... we need to be a part of it all. (Tłı̨chǫ citizen #2)*

In reflecting on the future of mining, several respondents emphasized the need for future arrangements to engage Tłı̨chǫ people on equal footing. Respondents' hope was that the short-term agendas of mining could be modulated to be more culturally and environmentally friendly if Tłı̨chǫ are given control over it.

> *So, once they have a land base I guess, industry can come in, yes, you can look for gold over here. But if you find it, you know it's on Tłı̨chǫ land, so you got to deal with Tłı̨chǫ. We're not going to stop prospectors, prospecting out there, we're not going to stop them. Let them go find gold, it's okay. But only if you want to start a mine, because you're on Tłı̨chǫ land, you still have to deal with Tłı̨chǫ. (Tłı̨chǫ Elder #2)*

> *Business is good, it's good. But you've got to work both sides, got to work together, eh, make sure that, you know mining company can come in here, take all the whatever they want, gold, all kinds of, they can make all kinds of money. But at the end of the day, we're going to be here, our people are going to be here generations, generations to come (Tłı̨chǫ Elder #1)*

Critically, if Tłı̨chǫ were in a position of control on the projects on their own lands, respondents advocated for projects to more closely fit Tłı̨chǫ values, being more environmentally-sound, more flexible to allow for cultural activities in scheduling, and to limit the pace of development to what was most beneficial for Tłı̨chǫ lands and people. Under this system, money would be only one of many factors considered when making decisions.

> *There's hope in better partnerships, and in collaborative project planning to say, "Okay, you're going to develop something at like the old Colomac mine, then this is the pace that we can benefit from, and these are the types of shifts that people need to work to, you know, have good family life, and for kids to be supported. And so, we're going to do it this way, and we're going to be part of this true partnership, so we're going to be suffering a bit too with you through the reduced profits, but it's worth it because we're not you know, we're looking at this this whole lens. So anyway, so I think for the mining context, That's what's possible, hopefully. (Government official #1)*

Respondents argued this should be instantiated in the ownership of mining operations, some variation of fifty-fifty possession or decision-making power related to any new mines. More broadly, interviewees wanted to ensure the terms of the agreements signed with proponents were met, citing employment targets and profit-sharing as areas where slippage from initial terms of

the agreement has occurred in the past. The best way to ensure this was to ensure that Tłı̨chǫ had seats of power and could ensure their peoples' interests were protected.

> *Why do we want to support another new mine when already the mines that are there can't meet their employment targets and needs and some of them that we have like, fantastic people and relationships and everything, but they still can't meet their, their targets? (Government official #1)*

Despite respondents' comments on the limitations of development processes and desire to continue to improve relationships between miners and the Tłı̨chǫ, contemporary processes were largely seen as an improvement over historical mines which largely ignored the Tłı̨chǫ; now, traditional knowledge, environmental protections, and community hearings are commonplace.

> *There's been quite a quite an evolution, and we're in this time now, where we're not past and we're never, never going to be past that negative legacy. But there is at least a sense that there is some sharing of benefits and opportunities, and as long as the environment is protected, and real benefits flow, then it feels like there's, there's more openness, and more sort of, well not openness, like interest, we'll put it that way. (Government official #3)*

However, respondents believed that oftentimes these agreements are not met in practice, especially sustained engagement over the lifetime of the project, with end of life being given far less attention than securing consent at the start of the project. Thus, accountability was a major area to be improved upon. In terms of traditional knowledge, several respondents highlighted how it was excellent to see it being considered with every project, but one official who has been involved in multiple impact assessments mentioned that technical environmental science still holds more weight. Other respondents believed that while impact assessment does a fair of job considering environmental impacts—although damages inevitably balloon after projects open—processes are much less effective at capturing and mitigating the social impacts of mining. Cumulative impacts were another sticking point, with respondents expressing how impact assessment does not do enough to consider and manage cumulative impacts. There was also concern expressed over who would oversee such large area assessment and monitoring

programs, especially considering the substantial income mining contributes to the territorial economy, disincentivizing impact monitoring that could threaten new developments.

> *I don't think the cumulative impact is addressed sufficiently enough. Because they only speak about their individual projects… the mitigation measures or the concerns that come out of it is really like focussed on specific... project-specific, local, or, you know, slightly regional, but it could definitely be, we're definitely lacking, I think, like, an overall assessment of the whole area. (Government official #2)*

> *Who would be addressed to? It would have to be GNWT. And, I mean, half of GNWT wants more mines (Government official #3)*

### *Mine Closures*

Hovering over this complex array of notable progress and stubborn limitations to the benefits of mining for Tłı̨chǫ people is the fact that most of the currently operating mines are set to close in the next few years. There were a broad range of responses to looming closures. A few questioned mine life projections, stating it was a scare tactic to maintain license to operate and that in general, companies can find ways to extend mine life if they desire. Others went on to say that in terms of new mines, the minerals are not going anywhere, and the Tłı̨chǫ should focus on developing slowly and properly, as opposed to being driven by fear to quickly open mines. Another respondent pointed out that no current diamond mines produced industrial-quality diamonds, instead favoring more lucrative gem-quality ones; if companies focussed on industrial diamonds, mine life could be extended.

> *They're going to find more and keep going. Yeah, those people are obsessed with money. (Government official #2)*

This perspective was not unanimous by any means, with several people expressing that mine closure is a pressing concern. One respondent pointed out that the Tłı̨chǫ are stretched beyond their capacities dealing with present day issues and have a lot of work to do if they want more mining to take the place of current operations without a yearslong gap in between. Generally,

while divisive in terms of visions of how the Tłı̨chǫ can best maximize local benefits, mining was seen to not be going anywhere, therefore it will play a significant role in shaping Tłı̨chǫ futures.

Envisioning the Future

Three interview questions asked about the future of the Tłı̨chǫ, first, the community strengths that had to be maintained to ensure flourishing futures, second, elements threatening Tłı̨chǫ futures, and third, what capacity Tłı̨chǫ had to revive the elements that were threatened or being lost. In response to these questions, many respondents turned their attention to future generations and what they wanted to pass on, in addition to their fears for their children and grandchildren. There was broad recognition of the magnitude, speed, and convergence of multiple pressures that the Tłı̨chǫ needed to respond to. Most relevant for us are the convergent impacts of mining and climate change, which many respondents saw as growing challenges.

Aside from a minority of Elders, respondents commented that traditional economies were likely lost for good as the basis of Tłı̨chǫ life. They reported young people had less interest in these ways of life, instead favoring education and employment in a wage economy. Due to the pressures colonization had placed on Tłı̨chǫ people and lands, adaptation was necessary, and going back to dated ways of living is not viable. There was a deep belief that Tłı̨chǫ people have and can continue to be resilient, forging new paths while maintaining ties to their heritage. In practical terms, education in both Tłı̨chǫ and settler skills was seen as ideal to enable young people to flourish in the emerging world. Many used a famous phrase in the communities, that they wanted youth to be strong like two people.

> *Now, the young people, they want to work, they don't want to go trap. Why did they go to school? So that I can send them off trapping? No! That's what my son was telling me: went to school so I can get a job, be somebody, work with government. (Tłı̨chǫ Elder #5)*

> *But we need to infuse that new education with what we've always had in us, and then that, the Dene laws are our forever codes, the way our ancestors lived, to where we are now, and how they fought so hard through everything they did, for us to be where we are now, all that's got to be, it's always got to be in our mind or in the process in which we decide to do what we're going to do next. (Tłı̨chǫ citizen #2)*

Tłı̨chǫ culture was considered by most respondents to be the greatest strength and source of resilience for the Tłı̨chǫ people. Every Tłı̨chǫ citizen interviewed wanted their children to spend time on the land, to feel linked to their history and deeply connected to the plants, animals and landscapes that had shaped the Tłı̨chǫ people into who they have become: strong, resilient, and with a deep sense of moral responsibility to care for all the relationships that enabled Tłı̨chǫ to survive for millennia. Time on the land was strongly linked with being deeply connected to one's family, another key source of strength for Tłı̨chǫ; however, the strength of community closeness was perceived to be threatened by the isolation, environmental destruction, and cold economic logic of the mining economy. Respondents felt renewed urgency to spend time out on the landscape, to relearn a way of life not governed by settler values, one more connected and responsible. Being educated in this way did not require one to turn away from settler society, but rather to learn the skills necessary to 'be Tłı̨chǫ' and adapt within the systems in which youth will live. Connection to the land and Tłı̨chǫ culture was thought to ensure resilience. One respondent commented that many youths found being on the land participating in cultural activities supported by the Tłı̨chǫ government was the best part of the year.

> *I remember a couple of times, like some of the youth, they don't even want to go back to the community. Because they know what that means. Like, they know that when they go back, they'll end up drinking, they'll end up like I don't know, like, just drugs and all the shit. So, when we're out on the land, it's like clean, happy, healthy, you know, and then they kind of dread sometimes going back. And that's really sad. So the more... the more that we can do the like, just be on the land, the better it is. (Government official #2)*

## Chapter 6- Discussion

The most important findings from interviews reveal that multiple factors, both related to mining and climate change, are perceived by respondents to have significantly affected community wellbeing and will continue to do so. The degree to which the Tłı̨chǫ can be resilient to and in some cases positively harness these two key drivers of change is contingent upon local capacity building and more equitable relationships with mining and state actors. Related to climate change, broader changes at the global level were seen as the only way to effectively mitigate climate change, although respondents highlighted the deep environmental knowledge and resilience to change the Tłı̨chǫ have always possessed as evidence that they will be able to adapt. In terms of mining, structural factors governing natural resource decision-making and global mineral markets appear to pose a significant constraint on Tłı̨chǫ maximizing the benefits of mining for their communities while minimizing social and ecological harms, particularly as communities struggle to build local capacities from the rubble of historical assimilation processes—of course, these processes are intrinsically linked to paving the way for resource development in the north. Respondents perceived the need for stronger support from the state to reconcile these problematic legacies, an increase in royalties that are captured to support community revitalization, and engagement processes that go beyond an instrumental to a meaningful, equal, and long-term relationship between locals and industry. There is hope the land claim settlement in 2005 can enable the Tłı̨chǫ to flourish in the future, although continual power imbalances between the Tłı̨chǫ and other actors appears to limit the degree to which the land claim is enabling self-determination. Relatedly, there was broad consensus that mining will continue in some form on Tłı̨chǫ lands, due in large part to the path dependency created by the investment of substantial local resources into developing capacities related to the mining

industry, as well as the lack of viable economic alternatives. In general, enthusiasm about mining was found to be mixed; respondents feel mining jobs are not particularly fulfilling for workers, and time at work takes away from their ability to connect with their families and participate in cultural activities. Despite this limitation, there is a sense that Tłı̨chǫ have learned from what went wrong with past mines and have now built capabilities to benefit maximally from mining while limiting social and environmental harms, although concerns about securing funding for clean up and the actual effectiveness of remediation remain.

The implications of the impacts of mining and climate change are summarized below, with the findings explained in three main sections, each broken down into subsections. The first section explains findings as they related to the current state of mining in the Northwest Territories and capacities the Tłı̨chǫ have built to respond to the impacts of development. In the second section, these findings are tied to a broader discussion of Indigenous self-determination and climate change vulnerability. This section is followed by an explanation of how these findings bring new insights to theories of underdevelopment, and the implications the chronic underdevelopment engendered by building a local economy around resource extraction has for local resilience, which is especially urgent considering the magnitude of the risks presented by climate change in the north.

## Overview of Mining Impacts on Community Wellbeing

### Colonial Legacies

Respondents expressed the view that the impacts of colonialism—as it manifested through overt acts of violent assimilation and the pressures it placed on Tłı̨chǫ through the development of the resource base in the Northwest Territories—continues to have severe impacts on Tłı̨chǫ

wellbeing. They reported that placement in residential schools and forceful integration into settler ways of life has caused trauma and created a disconnect in the transmission of Tłı̨chǫ culture and language. Several respondents highlighted that the state's efforts at reconciliation continue to ring hollow as social harms such as poverty, low levels of education and drug and alcohol abuse persist, and social support remains lacking. They also pointed out that the state valued the natural resources on Tłı̨chǫ lands above protecting Tłı̨chǫ wellbeing or environmental integrity, placing unfair pressure on the Tłı̨chǫ to protect their interests by attempting to engage with colonial processes. Respondents stated that Tłı̨chǫ people did not understand what mines opened throughout the 20th century would look like, and the state used this ignorance to push development.

The cultural disruption caused by colonization is ongoing. In our interviews we consistently found Tłı̨chǫ language and cultural transmission has been severely damaged, and as of this writing, locally driven interventions have not effectively restored young people's ability to speak the language or learn the 'bush skills' their ancestors did. Some blamed the youth and their technology addiction for this, some blamed residential schools, and some blamed integration into settler economies, but regardless, a significant breakdown in the communication between generations was widely agreed to have occurred, with the trauma of colonization playing a central role. Furthermore, a distrust in educational institutions still exists due to the legacies of residential schools, limiting the degree to which cultural skills can effectively be learned at school when attendance and motivation in this setting are low. This seems to have created a vacuum, wherein young people are searching for an identity, but are by and large uneducated and unable to find success in the wage economy, while also feeling disconnected from their heritage. Entry-level positions were the most common for mine workers, with many reporting being stuck

there for many years. Likewise, the inability to speak the language and live off the land means that connection to their ancestral identity is also somewhat compromised. Individual variation is of course significant, but generally respondents felt that young people are somewhat lost, in need of direction, 'things to do' and inspiring visions of what the future could be. Perhaps somewhat predictably, several Elders sought to resolve this predicament with a rejection of colonial economies and a return to living off the land, while middle-aged and younger respondents emphasized the value in the stability of mining jobs or sought new, exciting, more sustainable and interesting careers. By these routes, Tłı̨chǫ hoped young people would find success—but agreed that for now, success is hard to come by, and something needs to change.

**Contemporary Situation**

Still, the emergence of the Tłı̨chǫ from historical assimilation was a source of pride for many. Respondents expressed that through sustained political struggle, the Tłı̨chǫ have gained hard-won seats at the table in natural resource decision-making, and this has improved their capacity to protect their interests. At least economically, things are better now than in the 20th century. The settlement of the Tłı̨chǫ Land Claim in 2005 was seen as a key event that gave the Tłı̨chǫ more power, while subsequent updates to legislation that have mandated the inclusion of traditional knowledge and community engagement allow Tłı̨chǫ concerns to be raised during the approval and closure of mines were also noted. Many middle-aged and older respondents remembered that prior to the opening of this generation of diamond mines, jobs were harder to come by, and these memories led many to highly value the economic opportunity the mines offered. Elders' stories of struggling to survive in the past also motivated locals to value the material success the mines have brought. Furthermore, the independence gained from mining revenues was highly valued, both for successful individuals and the Tłı̨chǫ at large, who purportedly used profits to hunt and

participate in cultural activities. Mine revenues enable the Tłı̨chǫ to have a level of economic success that is rare for northern Indigenous peoples, even if by Canadian standards their position is undesirable (Markey et al., 2019). Some respondents reported a positive feedback cycle has been created, where enjoying more materialistic lifestyles has created more appetite for economic opportunities enabling heightened consumption, and thus more highly valuing jobs and becoming more reliant on mining.

The perspective of Tłı̨chǫ independence as it relates to mining was somewhat surprising, as the industry wholly depends on outside capital and technical knowledge to operate. However, respondents reconciled this seeming contradiction by pointing to their land claim as a sort of bargaining chip: if companies wanted minerals, they had to engage with the Tłı̨chǫ. Respondents still believed engagement at all stages of mine life could be improved, although it was reported that project approval currently garners significant attention, which then dies off during the production and closure phases. Regardless, having mineral resources provided an avenue to success and independence compared to depending on government support cheques.

However, the issue remains that there is an ongoing power inequality between Tłı̨chǫ and mining proponents, who have the financial capital and technical knowledge to dictate natural resource decision-making. This loomed over discussions of Tłı̨chǫ independence and prospects for a self-authored future. Many respondents believed that mining companies utilize their superior resources to benefit more than they deserve, at the expense of local wellbeing. While impact benefit agreements (IBA's) are in place with all companies operating mines on Tłı̨chǫ land, respondents reported the terms of the agreements did not offer fair financial benefits proportional to the social and ecological costs locals had to bear. Worse, breaking the terms of agreements was reported as common, with negotiators using hard-to-verify reasoning like

‘higher than anticipated costs’ or ‘changes in global markets’ to justify lower than anticipated royalty payouts. In a similar vein, mandates to hire a certain number of Tłı̨chǫ have historically been broken and bankruptcy or ownership transfers used to avoid paying the costs of environmental remediation. Employment is only up by 6% in the four Tłı̨chǫ communities since the current generation of diamond mines opened (Tłı̨chǫ Government, 2022) demonstrating just how limited the employment benefit has been. More generally, there was broad frustration with the billions of dollars that has left Tłı̨chǫ lands as corporate profits, especially as the cleanup was disregarded and oftentimes became a legacy that locals had to petition the federal government for funds to undertake cleanup long after proponents had moved on. These findings support the resource curse that plagues communities who are dependent upon an extractive industry, as theorized by Sachs and Warner (2001) and later expanded upon to include complex socioecological causes and effects (Markey et al., 2019). While natural resource extraction is touted by state and corporate interests as a way out of economic marginalization for rural communities, in this case as in many others, the economic benefit locally is found to be shockingly wanting. But in a position with few alternatives, the Tłı̨chǫ and many rural communities continue to acquiesce to the brutal terms of these arrangements, where corporate interests remain motivated by maximizing profit in a short period of time, largely preventing meaningful relationship building or sharing of the economic fruits.

**The Future of Mining**

To maximize the benefits of mining in the future, two key interventions were relayed to us by respondents. First, new mining operations should be undertaken with Tłı̨chǫ as equals, having the same decision-making power as companies. Many respondents highlighted the substantial investment in technical capacities amongst the Tłı̨chǫ and believed this could be sufficient to

create more equitable partnerships. Unlike in the past, the Tłı̨chǫ have lawyers and scientists on staff, many locally owned construction and maintenance companies and access to significant investment capital. As a result, respondents relayed they are now able to enter negotiations fully understanding the value they bring to the table and able to protect their rights. Secondly, there is a need to ensure terms of agreements between mining companies and Tłı̨chǫ are met after signing. Respondents iterated a belief that there was an earnest desire (and firm legal backing) for nation-to-nation treatment of the Tłı̨chǫ by the federal government instantiated in the Tłı̨chǫ Land Claim. Yet, bad-faith relationships still plague Tłı̨chǫ-corporate relations. Respondents suggested improving these could be done through a combination of legal interventions and more effective monitoring programs. Plans must be put in place to ensure the responsibility and expense for monitoring does not fall to the Tłı̨chǫ alone.

## Implications for the Future of the Tłı̨chǫ

### Climate Change Vulnerability

None of the respondents believed climate change was the most important issue facing the Tłı̨chǫ, pointing to other social, cultural, and economic concerns. However, most respondents believed in and recognized the importance of climate change and called for more community planning and education initiatives—but nearly all respondents felt the Tłı̨chǫ would be able to adapt to the impacts of climate change. The major threats to their resilience were seen as fixable, for example, infrastructure is vulnerable due to underinvestment but can be updated. In communities dependent upon long-distance transport via ice roads, the seasons are changing, but educating people can ensure safe seasonal supply runs. Many also called for all-season roads to the two Tłı̨chǫ fly-in communities, Gamètì and Wekweètì, to ensure safe travel and year-round access to supplies.

While resilience was the dominant perspective respondents mentioned to us, this does not mean no one expressed concerns over climate change, both what they have observed and what they believe may be coming. Those who were concerned about the ability of the Tłı̨chǫ to adapt cited the erosion of traditional skills that has occurred in the generations since settler contact, as Tłı̨chǫ citizens are more and more pushed away from traditional Tłı̨chǫ culture to settler modes of life structured by concern for money and individual interest. The erosion of culture was a key finding expressed by many citizens, and all Elders. Literature on adaptive capacity to climate change cites community closeness as a core source of resilience (Barnes et al., 2020), therefore this finding was somewhat concerning. The erosion of culture was also a mixed signal: some respondents cited ongoing manifestations of community care that run counter to Western individualism as evidence Tłı̨chǫ collectivist values remain strong; sharing of mine wages or hunting spoils with one's extended family, or how people continue to come together to celebrate culture multiple times a year were relevant examples. But others reported concern for cash and material possessions has changed the sense of security and willingness to participate in community politics—especially when not paid to show up. Debt, substance abuse, selfishness with one's money and possessions, and many young people's distaste for Tłı̨chǫ culture and listening to their Elders were other key manifestations of the infiltration of settler values respondents shared with us. Respondents—particularly Elders—worried that such impacts have taken away from people's time spent on the land and now too many young people can no longer be safe or feed themselves on the land, especially as the land is changing fast.

Settler development is also perceived to be causing the decline of the caribou herds essential to Tłı̨chǫ resilience, and indeed the problem of climate change at large, with industrial development being causal of warming emissions. There was concern that the cumulative impacts

of climate change and industrial development would be especially deleterious, potentially driving the caribou into extinction which would be a catastrophe for their culture. Like other issues, climate change was a settler-caused problem imposed upon the Tłı̨chǫ that they would have to adapt to, for better or worse. On the flip side, a more positive coincidence of climate change is that this potentially could open doors to more sustainable and fulfilling economic opportunities that are a better cultural fit for the Tłı̨chǫ. Renewable energy, environmental monitoring, youth on the land education programs and others were mentioned as potential jobs that fit these criteria. Many reported that conservation has long been a quintessential value of Tłı̨chǫ people, so if climate change enables more investment in more sustainable industries, this would be preferable to mining jobs. These ideas were nebulous, but Tłı̨chǫ generally seemed happy to replace mining jobs with more sustainable ones if this would be a stable economic route.

So, while there is significant awareness of climate change and desire to be educated, the Tłı̨chǫ are confident they will adapt if their culture remains strong. Respondents also commented that the Tłı̨chǫ have seen environmental changes for generations, and often challenged Western universalizing notions of climate change, saying such a label disrespected the nuance and hard-won depth of local, generations-long environmental knowledge. However, this was not usually a naïve sense of independence, and many respondents called for globally united actions to minimize the amount of warming that occurs. They also called upon stronger relationships with the territorial and federal government, to better reflect Tłı̨chǫ (and northern peoples more broadly) concerns and invest in resources that would be of maximum benefit for their communities. This could become manifest through the strengthening of northern infrastructure and training opportunities for Tłı̨chǫ to reduce a dependence on extractive industries in favor of renewable energy or other skilled labor opportunities.

Perhaps unsurprisingly, there was little urgency to adapt or evidence of transformational adaptation taking place. Despite clear presence of vulnerabilities—long-distance supply chains, high levels of poverty, and severe expected warming—most in Tłı̨chǫ communities seemed to think some variation of survival strategies of the past would work. There appeared to be a meaningful contradiction between the environmental and cultural degradation that has occurred since settler contact and the stated belief that the Tłı̨chǫ still have the option to live off the land. This key source of resilience seems tenuous at best; the caribou herds that once walked by communities in the tens of thousands now migrate hundreds if not thousands of kilometres away, with a significantly lower population. Subsistence hunting for Tłı̨chǫ communities these days depends on long distance transport, lots of fossil fuels and knowledge that less and less community members have. The potential intermittencies and increase in cost for supplies coming into these communities that is certain to occur as climate change disrupts air traffic and trucking (Clark et al., 2022) will further compromise what is already a stretched source of historical resilience. Moreover, climate change is making travel on the landscape increasingly unsafe, challenging subsistence hunting further. While cultural knowledge may mitigate how strongly climate impacts are felt, it seems unlikely the Tłı̨chǫ could extricate themselves from settler society and survive an increasingly hostile climate if substantial investments in making supply chains and local economies more resilient are not made. Yet the political economy of the mining industry is structurally incapable of enabling such a transformation, something that will be discussed in detail below.

**Prospects for Self-Determination**

In the Northwest Territories, the provincial economic structure, characterized by a reliance on revenues from mineral extraction, appears to be constraining the Tłı̨chǫ's ability to achieve self-

determination. The provincial and Tłı̨chǫ government's reliance on diamond mining revenues forces Tłı̨chǫ communities to conform to a system designed to maximize revenues, not protect their wellbeing. This finding is particularly interesting, as it is consistent with previous research on the limitations of extractive locales to capture financial and political benefits while bearing the environmental and social costs of extraction. This finding has been consistent in the literature but is continually challenged by proponents of development. It also challenges reconciliation as it is commonly touted. If ongoing power imbalances subjugate the Tłı̨chǫ to a continual dependency on mining without providing paths to local independence, this is not conducive to reconciliation. The extractive industry also remains a colonial force insofar as it continues to damage Tłı̨chǫ lands and culture. The industry also creates strong pressure to assimilate into the wage economy, further disconnecting individuals from their community. Furthermore, respondents emphasized the cultural changes that integration into settler economies has created in Tłı̨chǫ communities, leading to increasingly fractured social dynamics. Individualism, materialism, short-term profit making, and substance abuse have encroached upon traditional culture. As such, the mining industry continues the work of fostering a "spirit of individual responsibility" (Canada, 1890) which settlers have long thought key to destroying the communal basis of Indigenous cultures.

Furthermore, many respondents perceived that the territorial and federal governments intentionally limit Indigenous agency to maintain access of lands for resource exploitation. Environmental and social protections must be compatible with government agendas to maintain and expand resource revenues, an observation consistent with a review of federal and territorial strategy documents which clearly state an intention to expand resource development in the north (Natural Resources Canada, 2022). Further development is consistently placed above the

protection of Indigenous rights. As they are required to be compatible with this aim, Tłı̨chǫ rights to self-determination are limited to strategies that do not significantly affect resource development expansion. Furthermore, with limited economic alternatives and substantial sunk cost into developing capacities enabling the Tłı̨chǫ to engage with mining interest on a more equal footing, the Tłı̨chǫ are deeply invested in mining. This path dependency has created a dynamic wherein the Tłı̨chǫ depend upon the same economic structure that severely damages social and ecological wellbeing in a multitude of ways. This reflects the more insidious and subtle meanings of the resource curse as reflected in the literature by scholars such as Parlee (2015) and Coulthard (2014), wherein locals become dependent on the very structure that limits their agency.

## Theoretical Implications

### Marxist Critique of the Political Economy of Mining

Our results clearly support the view long held by scholars of underdevelopment: resource extraction economies, such as diamond mining on Tłı̨chǫ lands, create a political and economic environment that limits opportunity while causing disproportionate social and environmental harms (Markey et al., 2019). These effects are especially damaging for Indigenous people due to the many complicated legacies of colonialism, not the least of which is how resource extraction demands unfettered access to Indigenous lands and thus structurally limits the political power of Indigenous peoples. Note that this discussion is most applicable to industrialized countries such as Canada, where natural resource extraction forms a large chunk of the national economy and therefore becomes a preeminent national interest.

Marx (2004) suggested that the foundation of capitalism is in the “primitive accumulation” of land and resources, where through the twin processes of enclosure and proletarianization, the

scarcity of land and resources is manufactured, and people are forced to become laborers. Thus, he argues that capitalism is inherently violent and cannot coexist with other ways of life—it appropriates untapped frontiers and places them in production. For Marx, the very idea of a profit depends upon the privatization of what was once freely held and commonly managed. Of course, following the initial accumulation of a resource, it is the nature of capital to seek new frontiers to grow into and consume, and this endless drive for growth necessitates an endless cycle of violence against people and environments. Capitalism and colonialism have been inseparable for some time.

In the Tłı̨chǫ context, the drive for land and resources is the primary force that led to colonization and the processes of assimilation that continue to follow. Based on our findings, the cultural disruption caused by colonization still limits self-determination, even as state and corporate actors espouse the potential of the extractive industry to empower Indigenous nations. Coulthard (2014) argues the granting of Indigenous rights that has occurred over the past century has not been emancipatory, but rather a means of manufacturing social license to maintain unabated access to Indigenous lands and resources. The evidence is striking: more Indigenous land and resources than ever within Canada are used to fuel industrial processes (Alfred, 2021). As such, it appears that the current relationship between state and Indigenous peoples has effectively enabled the colonial project of gaining access to land and resources to continue unabated. Crucially, the terms of engagement between Indigenous nations and state/corporate actors are still prescribed by those in power, structurally limiting Indigenous self-determination efforts. So, while legal interventions such as the granting of Indigenous cultural rights and the settlement of land claims appear to offer meaningful progress towards reconciliation, from a Marxist perspective, this amounts to mere lip service.

And yet the "colonial politics of recognition" (Coulthard, 2014) continue to make up a large part of political discourse between the state and Indigenous people in Canada. The state holds the view that the damages of colonialism are firmly in the past and it 'makes up' for them by granting a limited set of Indigenous rights such as the Tłı̨chǫ Land Claim—which do not and cannot challenge the primacy of the state. Our data reflect this, as many respondents reported the terms of engagement between them and the state are unfair and their knowledge has less say than technical, state-sanctioned knowledge does in mining engagement processes or political circles. Perhaps more strong evidence for this view, if somewhat indirect, is how no participant envisioned futures not characterized by mining, showing high levels of buy-in to colonial economic structures and associated worldviews. Nearly all felt development will continue, and the Tłı̨chǫ should focus on making it work for them as opposed to being left behind. Visions of distinct ways of life operating outside of settler economies did not get mentioned once. Even responses we heard that challenged a continuation of a status-quo dependence on mining still viewed the future in economic terms: jobs and money were the primary concern.

This supports Coulthard's (2014) argument that nowadays much Indigenous political action—at least in formal settings like the land claim processes—has lost an anticolonial vision, and instead are increasingly seeking success in adopting settler ways of life. Visions of distinct Indigenous political economies characterized by sharing, consensus decision-making, taking only what was needed from the land (as opposed to maximizing profits), and distributing profits equitably, as put forth by the Dene Nation in the 1970's and 80's (Dene Nation, 1984), have disappeared. In our interviews, both the material scarcity and cultural disruption created by historical and ongoing assimilation contribute to this—colonialism attacks both the material and cultural foundations of Indigenous sovereignty. Few of our respondents expressed the belief that

ways of flourishing outside of a capitalist economy were feasible. Older respondents' memories of the hard times following settler contact but prior to the establishment of modern mines as a source of employment show how material scarcity continues to drive a continuing dependency on settler ways of life. Similarly, responses about the cultural erosion of traditional Tłı̨chǫ ways of life—community closeness, language, on the land skills—highlight how effective assimilation has been in snuffing out the cultural strengths necessary to cultivate distinct ways of life. This is the 'psychosocial' level at which colonization operates, as conceptualized by Fanon (2008), where colonized peoples begin to internalize the values of the colonizer. Together, the material scarcity and psychosocial erasure colonization brings about create extreme pressure to assimilate, and we saw much evidence of both levels structuring interviewees' responses.

A lazy interpretation of these findings tells a story of assimilation of the Tłı̨chǫ by the inevitable power of colonialism, yet it is important to remember integration into settler society is fundamentally an adaptive act, necessary to survive. Our results firmly indicate that while challenging capitalism is not an active part of Tłı̨chǫ communities in obvious and overt ways, they have found ways to maintain distinct visions of their flourishing within the systemic constraints places on them. While the dependency on the mining industry and capitalist modes of production more generally was not challenged, the Tłı̨chǫ have used the profits generated by the mines to support cultural revitalization. Cultural revitalization is a key form of anticolonial praxis, and this is something the totalizing power attributed to colonization by Fanon (2008) mostly fails to predict. One respondent termed Tłı̨chǫ communities 'beautiful chaos', referring to how cultural revitalization is taking place even as the macroeconomic and social landscape remains uninspiring. This dynamic operates at the governmental level, with on the land programs like the Tłı̨chǫ Ịmbè program and yearly hand games tournaments funded by the money

generated by mining. It also operates at the individual level, with many respondents saying how well mining incomes spread amongst families, or how those who can hunt because of their salaries from mining jobs usually share meat with Elders or those unable to be out on the land. So, while dependence on the mining industry seems to fit ideas of how the mind of the colonized becomes colonial (Fanon, 2008), the cultural revitalization taking place within the systemic constraints facing Tłı̨chǫ challenges any ideas that the communities will passively become subsumed by settler ways of life.

**Adaptation to Climate Change**

All this begs the question, where are Tłı̨chǫ communities—still dealing with colonization, dependent on mining, and now faced with severe climatic impacts and low levels of various forms of capital to mitigate these impacts—left in terms of climate change vulnerability and prospects for adaptation. The traditional capacities thought to be essential for dealing with climate change such as political clout, access to finances and social connectivity have all been limited by the colonial mining industry. Yet, the Tłı̨chǫ hold unique and valuable resources that will be useful in remaining resilient to the impacts of climate change. In interviews the idea that adaptation action increases linearly with the possession of various forms of capital was challenged consistently by respondents. They pointed to access to land and the skills necessary to subsist outside of wage-based economies as sources of resilience. Harder to quantify, but equally important for respondents is the strength Tłı̨chǫ culture and spirituality is thought to provide. To paraphrase one respondent, the Tłı̨chǫ have always been comfortable with the land being the boss.

Most respondents believed in climate change but thought the Tłı̨chǫ would be able to adapt. However, many worried about the limits to traditional sources of resilience are being stretched,

as respondents highlighted how more change is happening faster than ever. Climate change is affecting the distribution and abundance of animals, as well as people's ability to be safe on the land. These have had severe effects on the learning of traditional skills amongst Tłı̨chǫ youth. Many thought an inability to be on the land and connect to cultural identity was a proximate cause of rising rates of substance abuse and suicide amongst youth.

Mining is perceived to be more of a mixed force for adaptivity; in many ways, the source of income and political importance the mineral resources on Tłı̨chǫ lands generate are a community strength, yet the disruption caused by the encroachment of settler values, social ills like debt, drugs and alcohol, as well as the negative effects of being away from family and community create a complicated calculus. Some respondents held firm beliefs that mines could be environmentally safe and new agreements could ensure the Tłı̨chǫ benefitted maximally in the future. There was a broad sense they had to try—minerals were the most economically valuable resource they possessed. Many cultural programs thought to be key to revitalizing Tłı̨chǫ culture and the resilience it offers depend on mining royalties garnered from IBAs. Like the effects mining has on broader ideals of Tłı̨chǫ self-determination, the Tłı̨chǫ are dependent on mining resources to generate certain forms of capital thought to be essential to adapting to climate change, but in remaining dependent on mining, many other capacities are damaged.

## Chapter 7: Conclusion

The purpose of this study was to explore how the impacts of mining development and climate change are perceived and the local level, using the Tłı̨chǫ region as a case study. This thesis research project sought to understand the constraints and potential for self-determination for Indigenous peoples managing the legacies of colonial industrial development, the newest impact of this problematic legacy being climate change upsetting the environmental integrity upon which Indigenous peoples depend. Previous studies on climate adaptivity have not typically focussed on how the ongoing legacies of colonialism constrain possibilities for self-determination, particularly as this relates to the relationship between colonialism and capitalism. This study, on the other hand, draws attention to how a capitalist economy constantly demands new lands and resources, and in doing so, remains fundamentally colonial, limiting the potential for a truly equal relationship between Indigenous nations and settler states. Therefore, any discussion of improving adaption to climate change must begin with reforming capitalist modes of production to not infringe upon assertions of Indigenous rights.

Structural constraints on Tłı̨chǫ self-determination are characterized by the short-term profiteering which drives mining companies to build short term relationships and burden Tłı̨chǫ lands with environmental and social harms not well encapsulated by consultation processes. Mining companies must operate by the extractive, short term, profit maximizing rules of capital, superseding social and environmental goals. Ongoing power imbalances due to the unequal distribution of financial capital and technical knowledge allows corporate interests to drive the terms of development. This places the onus on the Tłı̨chǫ to protect their land and people via adopting the ‘tools of the state’, something that is particularly challenging as colonialism has depleted their capacities. It also creates a path dependency where Tłı̨chǫ now have invested

significantly in capacities related to mining, and no longer consider alternative ways of organizing their society. These findings contribute new insights to the interrelated studies of colonialism and developmental theory, which have tended to favor resource extraction to gain an economic foothold for historically marginalized Indigenous communities and have largely ignored the structural limitations of the capitalist economy.

It would be misleading to conclude that colonial development has erased the potential for Tłı̨chǫ self-determination, as well as effective adaptation to climate change. Tłı̨chǫ communities maintain social and cultural resources that are poorly represented in the literature on adaptivity, and in many ways are findings paths to self-determination despite continued economic and political marginalization. Cultural continuity in the form of Elder-youth knowledge transmission, learning on the land skills, abiding by communal ethical standards, and language were key to community perceptions of resilience. Creating more local jobs, higher levels of education, and developing social services like local treatment centers for substance abuse were also key community resources identified by participants.

These findings illustrate how theories in environmental sociology, particularly (under-)developmental theory and climate adaptivity, could be advanced with more research that focusses of the combined impacts of historical colonialism and ongoing impacts of industrial development. An analysis of the role of the state in perpetuating industrial development reveals the structural constraints on state-Indigenous relations, particularly as the state treats Indigenous rights as secondary to the mandates to continually grow the economy. Making growth the primary concern means the terms of the relationship between the state and Indigenous nations will remain colonial, as the state demands ongoing access Indigenous lands and resources. Structuring the economy around extraction and profit-making is also the primary limitation

impeding adaptation action. To ensure northern Indigenous communities remain resilient to climate impacts as they have been to colonial impacts in the past, healthy lands and social dynamics must be upheld. The environmental disintegration and subaltern place in the political economy of mining given to Tłı̨chǫ communities upset these key sources of resilience.

## Areas for Future Research

The relationship between the impacts of colonial industrial development, including climate change, and the consequences for efforts aimed at self-determination for Indigenous nations like the Tłı̨chǫ, prompts numerous other research questions. First, as this study only takes an exploratory look at local perceptions of impacts; a more comprehensive evaluation of local capacities could assess to what degree industrial development has depleted essential community resources using an empirical approach. Comparisons to other Indigenous communities unaffected by proximity to industrial development could help determine to what degree it is fair to attribute negative impacts to mining, and which are likely due to other ongoing manifestations of colonialism and marginalization. It would also be useful to compare regions with similar types of resource development, to see similarities and in the impacts of mining development across different contexts.

Follow-up study would also do well to complete a regional assessment of climate risk in the Tłı̨chǫ area and generate areas for improvement based on community strengths and weaknesses as related by respondents in this study. Furthermore, research on adaptivity in socioecological systems continues to show that neat categorization of well-defined capacities does not perfectly predict resilience to risk, therefore longitudinal studies are needed to truly evaluate resilience and

adaptivity, and whether it is appropriate to categorize common capacities held by resilient communities.

This research identified the need for reform in the structure of the political economy of natural resource extraction to ensure Indigenous rights are protected and resilient communities are enabled to flourish. However, further research is needed to determine which reforms would have the greatest effect. Further research could contribute to recommendations enabling Indigenous self-determination, including more egalitarian relationships between state, corporate and Indigenous actors, while continuing to procure the resources necessary to maintain functional local and national economies.

Research on natural resource extraction and self-determination should not neglect the potential insights gained from further studies focussing on natural-resource based industries, particularly in regions with limited economic diversity. In Canada, these industries are affected by balancing the mandates to grow capital with new social and environmental standards, including renewed promises to reconcile with Indigenous peoples. Consequently, natural-resource based industries, particularly when attached to powerful economic and political interests, present unique challenges to adaptation research that may not exist in other sectors. A particularly exciting opportunity exists surrounding the emergence of valuable rare earth mineral resources in the Northwest Territories. Decarbonization targets and the increasing affordability of low-carbon energy and transport make these a particularly attractive resource for state and corporate interests. Thus, it will be interesting to see if Indigenous people like the Tłı̨chǫ are able to leverage these resources to capture more benefits locally, or if the lack of viable economic alternatives will enable outside actors to dictate the terms of agreements.

This research also prompts theoretical research questions, particularly as they relate to the broader sociological implications of a dependence on natural resource extraction, where a dependency on outside capital is a given. The implications of a dependency on resource extraction—in this instance, diamond mining—for Indigenous communities seeking reconciliation and self-determination are particularly serious and worthy of further research. In isolated resource dependent regions, extractive industries hold significant economic power (Markey et al, 2019) and as such, communities have little recourse to oppose developments if their governments are not interested in environmental protection and ensuring natural resource development is socially beneficial.

## References

Abele, F., Graham, K. A., & Maslove, A. (2000). Small nations and democracy's prospects: Indigenous peoples in Canada, Australia, New Zealand, Norway and Greenland. *Inroads*, *10*, 137-49.

Abel, K. (2005). *Drum Songs: Glimpses of Dene History*. McGill-Queen's Press - MQUP.

Alfred, T. (2001). Deconstructing the British Columbia Treaty Process. *Balayi: Culture, Law and Colonialism*, *3*(2001), 37-65.

Alfred, T. (2005). *Wasáse: Indigenous Pathways of Action and Freedom*. University of Toronto Press.

Alfred, T. (2021). *Indigenous Collaboration in Impact Assessment: Challenges and Opportunities*: *Prepared for the Impact Assessment Agency of Canada Indigenous Advisory Committee*. Impact Assessment Agency of Canada.

Anderson, R. B., Dana, L. P., & Dana, T. E. (2006). Indigenous land rights, entrepreneurship, and economic development in Canada: "Opting-in" to the global economy. *Journal of World Business*, *41*(1), 45–55. https://doi.org/10.1016/j.jwb.2005.10.005

Barnes, M. L., Wang, P., Cinner, J. E., Graham, N. A. J., Guerrero, A. M., Jasny, L., Lau, J., Sutcliffe, S. R., & Zamborain-Mason, J. (2020). Social determinants of adaptive and transformative responses to climate change. *Nature Climate Change*, *10*(9), 823–828. https://doi.org/10.1038/s41558-020-0871-4

Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, *13*(4), 544-559. https://doi.org/10.46743/2160-3715/2008.1573

Bazeley, P. (2009). Analysing qualitative data: More than 'identifying themes. *Malaysian*

*Journal of Qualitative Research*, *2*(2), 6-22.

Bebbington, A., Hinojosa, L., Bebbington, D. H., Burneo, M. L., & Warnaars, X. (2008). Contention and Ambiguity: Mining and the Possibilities of Development. *Development and Change*, *39*(6), 887–914. https://doi.org/10.1111/j.1467-7660.2008.00517.x

Berger, T. R. (1977). *Northern frontier, northern homeland: The report of the Mackenzie Valley pipeline inquiry*. https://www.osti.gov/etdeweb/biblio/6029111

Berkes, F., & Jolly, D. (2002). Adapting to Climate Change: Social-Ecological Resilience in a Canadian Western Arctic Community. *Conservation Ecology*, *5*(2). https://www.jstor.org/stable/26271828

Berkes, F., & Ross, H. (2013). Community Resilience: Toward an Integrated Approach. *Society & Natural Resources*, *26*(1), 5–20. https://doi.org/10.1080/08941920.2012.736605

Bernauer, W. (2019). The limits to extraction: Mining and colonialism in Nunavut. *Canadian Journal of Development Studies*, *40*(3), 404–422.

Bishop, R. (1998). Freeing ourselves from neo-colonial domination in research: A Maori approach to creating knowledge. *International Journal of Qualitative Studies in Education*, *11*(2), 199–219. https://doi.org/10.1080/095183998236674

Blondin, G. (1990). *When the world was new: Stories of the Sahtu Dene*. Yellowknife, NWT: Outcrop, the Northern Publisher.

Boulanger, J., & Adamczewski, J. (2015). *Simulations of Harvest and Recovery for the Bathurst Caribou Herd, with Annual Variation*. Northwest Territories Environment and Natural Resources.

Box, J. E., Colgan, W. T., Christensen, T. R., Schmidt, N. M., Lund, M., Parmentier, F.-J. W., Brown, R., Bhatt, U. S., Euskirchen, E. S., Romanovsky, V. E., Walsh, J. E., Overland, J.

E., Wang, M., Corell, R. W., Meier, W. N., Wouters, B., Mernild, S., Mård, J., Pawlak, J., & Olsen, M. S. (2019). Key indicators of Arctic climate change: 1971–2017. *Environmental Research Letters*, *14*(4), 045010. https://doi.org/10.1088/1748-9326/aafc1b

Brooks, N. (2003). Vulnerability, Risk and Adaptation: A Conceptual Framework. *Tyndall Centre for Climate Change Research, Working Paper, 38*. 1-16.

Burnette, C. E., Sanders, S., Butcher, H. K., & Rand, J. T. (2014). A Toolkit for Ethical and Culturally Sensitive Research: An Application with Indigenous Communities. *Ethics and Social Welfare*, *8*(4), 364–382. https://doi.org/10.1080/17496535.2014.885987

Cameron, E. S. (2012). Securing Indigenous politics: A critique of the vulnerability and adaptation approach to the human dimensions of climate change in the Canadian Arctic. *Global Environmental Change*, *22*(1), 103–114. https://doi.org/10.1016/j.gloenvcha.2011.11.004

Canada. (1890) "Annual Report Department of Indian Affairs," Sessional Papers, no. 12, 165.

Canada. (2019, August 19). *The Northern Abandoned Mine Reclamation Program.* https://www.canada.ca/en/crown-indigenous-relations-northern-affairs/news/2019/08/the-northern-abandoned-mine-reclamation-program.html

Canada, N. R. (2022, February 2). *Government of Canada*. Home. https://www.minescanada.ca/en/

Canosa, I. V., Ford, J. D., McDowell, G., Jones, J., & Pearce, T. (2020). Progress in climate change adaptation in the Arctic. *Environmental Research Letters*, *15*(9), 093009. https://doi.org/10.1088/1748-9326/ab9be1

Carter, S. (2019). *Lost Harvests: Prairie Indian Reserve Farmers and Government Policy,*

*Second Edition*. McGill-Queen's Press - MQUP.

Chen, W., Adamczewski, J. Z., White, L., Croft, B., Gunn, A., Football, A., Leblanc, S. G., Russell, D. E., & Tracz, B. (2018). Impacts of climate-driven habitat change on the peak calving date of the Bathurst caribou in Arctic Canada. *Polar Biology*, *41*(5), 953–967. https://doi.org/10.1007/s00300-018-2259-8

Christensen, V., Ehrlich, A., & White, G. (2007). Involving Canada's indigenous peoples in environmental impact assessment: co-management through the Mackenzie valley environmental impact review board. *27th annual conference if the International Association for Impact Assessment, Seoul, Korea: June 3-9, 2007.*

Clark, D., Coffman, D., Ness, R., Bujold, I., & Beugin, D. (2022). *Due North: Facing the costs of climate change for Northern infrastructure.* Canadian Climate Institute. Ottawa, ON.

Coombes, M. G., Green, A. E., & Owen, D. W. (1988). Substantive Issues in the Definition of "Localities": Evidence from Sub–Group Local Labour Market Areas in the West Midlands. *Regional Studies*, *22*(4), 303–318. https://doi.org/10.1080/00343408812331344990

Corntassel, J. (2012). Re-envisioning resurgence: Indigenous pathways to decolonization and sustainable self-determination. *Indigeneity, Education & Society, 1*(1).

Couch, W. J. (2002). Strategic resolution of policy, environmental and socio-economic impacts in Canadian Arctic diamond mining: BHP's NWT diamond project. *Impact Assessment and Project Appraisal*, *20*(4), 265–278. https://doi.org/10.3152/147154602781766564

Creswell, J. W., Shope, R., Plano Clark, V. L., & Green, D. O. (2006). How interpretive qualitative research extends mixed methods research. *Research in the Schools*, *13*(1), 1-11.

Davidson, D. J. (2010). The Applicability of the Concept of Resilience to Social Systems: Some Sources of Optimism and Nagging Doubts. *Society & Natural Resources*, *23*(12), 1135–1149. https://doi.org/10.1080/08941921003652940

De Angelis, M. (2001). Marx and primitive accumulation: The continuous character of capital's "enclosures." *The Commoner*, *2*(1), 1-22.

Dene Nation. (1984). *Denendeh: A Dene celebration*. McClelland and Stewart.

*Diavik*. Rio Tinto. (2023). https://www.riotinto.com/en/operations/canada/diavik

Dickason O. P., & McNab, D. (2009). *Canadas First Nations*. Oxford University Press.

*Ekati mine*. Arctic Canadian Diamond Company Ltd. (2023, May 24). https://arcticcanadian.ca/ekati-mine/

ExChange, N. C. (2015). Economic implications of climate change: Adaptations for mine access roads in northern Canada.

Fanon, F. (2004). The Wretched of the Earth. 1961. New York: Grove Press.

Fanon, F. (2008). *Black Skin, White* Masks. Pluto Press.

Federici, S. (2004). *Caliban and the Witch*. Autonomedia.

Fenge, T., Oakes, J., Riewe, R., Kinew, K., & Maloney, E. (1999). Sacred lands: aboriginal world views, claims & conflicts. *Alternatives Journal, 25*(3), 34-35.

Forbes, B. C., & Stammler, F. (2009). Arctic climate change discourse: The contrasting politics of research agendas in the West and Russia. *Polar Research*, *28*(1), 28–42. https://doi.org/10.1111/j.1751-8369.2009.00100.x

Ford, J. D., McDowell, G., & Pearce, T. (2015). The adaptation challenge in the Arctic. *Nature Climate Change*, *5*(12), 1046-1053. https://doi.org/10.1038/nclimate2723

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

Ford, J. D., Pearce, T., McDowell, G., Berrang-Ford, L., Sayles, J. S., & Belfer, E. (2018). Vulnerability and its discontents: The past, present, and future of climate change vulnerability research. *Climatic Change*, *151*(2), 189–203. https://doi.org/10.1007/s10584-018-2304-1

Ford, J. D., & Smit, B. (2004). A Framework for Assessing the Vulnerability of Communities in the Canadian Arctic to Risks Associated with Climate Change. *Arctic*, *57*(4), 389–400.

Franks, D. M., Davis, R., Bebbington, A. J., Ali, S. H., Kemp, D., & Scurrah, M. (2014). Conflict translates environmental and social risk into business costs. *Proceedings of the National Academy of Sciences*, *111*(21), 7576–7581. https://doi.org/10.1073/pnas.1405135111

*Gahcho Kué Mine – De Beers Canada*. De Beers Group. (2023). https://canada.debeersgroup.com/operations/mining/gahcho-kue-mine

Gerland, S., Barber, D., Meier, W., Mundy, C. J., Holland, M., Kern, S., Li, Z., Michel, C., Perovich, D. K., & Tamura, T. (2019). Essential gaps and uncertainties in the understanding of the roles and functions of Arctic Sea ice. *Environmental Research Letters*, *14*(4), 043002. https://doi.org/10.1088/1748-9326/ab09b3

Glassman, J. (2006). Primitive accumulation, accumulation by dispossession, accumulation by 'extra-economic' means. *Progress in Human Geography*, *30*(5), 608–625. https://doi.org/10.1177/0309132506070172

Gordon, T. (2009). Canada, Empire and Indigenous People in the Americas. *Socialist Studies/Études Socialistes*, *2*(1). https://doi.org/10.18740/S4GS38

Hacker, J. S., Hertel-Fernandez, A., Pierson, P., & Thelen, K. A. (2021). Introduction: The American political economy: A framework and agenda for research. In *The American Political Economy: Politics, Markets, and Power* (pp. 1-48). Cambridge University Press.

Hall, R. (2013). Diamond Mining in Canada's Northwest Territories: A Colonial Continuity. *Antipode*, *45*(2), 376–393. https://doi.org/10.1111/j.1467-8330.2012.01012.x

Hamel, J., Dufour, S., & Fortin, D. (1993). *Case Study Methods* (vol. 32). SAGE Publications.

Hancock, D. R., Algozzine, B., & Lim, J. H. (2021). *Doing Case Study Research: A Practical Guide for Beginning Researchers*. Teachers College Press.

Harvey, D. (2017). The "New" Imperialism: Accumulation by Dispossession. In B. Ollman & K. B. Anderson (Eds.), *Karl Marx* (1st ed., pp. 213–237). Routledge. https://doi.org/10.4324/9781315251196-10

Hegel, G. W. F. (2018). *Hegel: The phenomenology of spirit*. Oxford University Press.

Helm, J. (2000). *The people of Denendeh: ethnohistory of the Indians of Canada's Northwest Territories* (Vol. 24). McGill-Queen's Press-MQUP.

Hoegh-Guldberg, O., Jacob, D., Bindi, M., Brown, S., Camilloni, I., Diedhiou, A., ... & Zougmoré, R. B. (2018). Impacts of 1.5 C global warming on natural and human systems. *Global warming of 1.5° C.*

*Home: Tłı̨chǫ History*. (2014). Tłı̨chǫ History. Retrieved May 30, 2023, from https://tlichohistory.ca/.

Horton, J., Macve, R., & Struyven, G. (2004). Qualitative research: experiences in using semi-structured interviews. In *The real life guide to accounting research* (pp. 339-357). Elsevier.

Huntington, H. P., Carey, M., Apok, C., Forbes, B. C., Fox, S., Holm, L. K., Ivanova, A.,

Jaypoody, J., Noongwook, G., & Stammler, 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

GNWT Mining Recorder's Office. (2022). *Get Assistance from The Mining Recorder's Office*. Government of the Northwest Territories. Retrieved May 30, 2023, from https://www.iti.gov.nt.ca/en/services/get-assistance-mining-recorders-office.

Jodoin, S., Snow, S., & Corobow, A. (2020). Realizing the Right to Be Cold? Framing Processes and Outcomes Associated with the Inuit Petition on Human Rights and Global Warming. *Law & Society Review*, *54*(1), 168–200. https://doi.org/10.1111/lasr.12458

Jorgenson, A. K., Fiske, S., Hubacek, K., Li, J., McGovern, T., Rick, T., Schor, J. B., Solecki, W., York, R., & Zycherman, A. (2019). Social science perspectives on drivers of and responses to global climate change. *WIREs Climate Change*, *10*(1), e554. https://doi.org/10.1002/wcc.554

Keeling, A., & Sandlos, J. (2016). Introduction: Critical perspectives on extractive industries in Northern Canada. *The Extractive Industries and Society*, *3*(2), 265–268. https://doi.org/10.1016/j.exis.2015.10.005

Keith, R., & Wright, J. (1978). Northern Transitions, Second National Workshop on People, Resources and the Environment North of 60º, *2*, 259-264. Ottawa: Canadian Arctic Resources Committee

Kilian, A., Fellows, T. K., Giroux, R., Pennington, J., Kuper, A., Whitehead, C. R., & Richardson, L. (2019). Exploring the approaches of non-Indigenous researchers to Indigenous research: A qualitative study. *CMAJ Open*, *7*(3), E504–E509. https://doi.org/10.9778/cmajo.20180204

Kirsch, S. (2007). Indigenous movements and the risks of counterglobalization: Tracking the campaign against Papua New Guinea's Ok Tedi mine. *American Ethnologist*, *34*(2), 303–321. https://doi.org/10.1525/ae.2007.34.2.303

Kulchyski, P. (2015). Trail to Tears: Concerning Modern Treaties in Northern Canada. *The Canadian Journal of Native Studies*, *35*(1), 69–81.

LaBoucane-Benson, P., Gibson, G., Benson, A., & Miller, G. (2012). Are We Seeking Pimatisiwin or Creating Pomewin? Implications for Water Policy. *International Indigenous Policy Journal*, *3*(3). https://doi.org/10.18584/iipj.2012.3.3.10

Low, J. (2019). A Pragmatic Definition of the Concept of Theoretical Saturation. *Sociological Focus*, *52*(2), 131–139. https://doi.org/10.1080/00380237.2018.1544514

Lukes, S. (2004). *Power: A radical view* (2nd ed). Palgrave Macmillan.

MacDonald, G. G., Zoe, J. B., & Satterfield, T. (2016). Reciprocity in the Canadian Dene Diamond Mining Economy. In *Natural Resource Extraction and Indigenous Livelihoods* (pp. 73-89). Routledge.

Markey, S., Halseth, G., Ryser, L., Argent, N., & Boron, J. (2019). Bending the arc of the staples trap: Negotiating rural resource revenues in an age of policy incoherence. *Journal of Rural Studies*, *67*, 25–36. https://doi.org/10.1016/j.jrurstud.2019.02.002

Marx, K. (2004). *Capital: Volume I*. Penguin UK.

Marx, K. (2005). *Grundrisse: Foundations of the Critique of Political Economy*. Penguin UK.

McKee, C. (2009). *Treaty Talks in British Columbia, Third Edition: Building a New Relationship*. UBC Press.

Mendelsohn, R. (2000). Efficient adaptation to climate change. *Climatic change*, *45*(3-4), 583-600.

Menzies, C. R. (2010). Indigenous Nations and Marxism: Notes on an Ambivalent Relationship. *New Proposals: Journal of Marxism and Interdisciplinary Inquiry*, *3*(3), 5-6.

Meredith, M., Sommerkorn, M., Cassotta, S., Derksen, C., Ekaykin, A., Hollowed, A., ... & Schuur, E. A. G. (2019). Polar Regions. Chapter 3, IPCC Special Report on the Ocean and Cryosphere in a Changing Climate.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. SAGE.

Minkler, M., & Wallerstein, N. (2011). *Community-Based Participatory Research for Health: From Process to Outcomes*. John Wiley & Sons.

Myette, E., & Riva, M. (2021). Surveying the complex social-ecological pathways between resource extraction and Indigenous Peoples' health in Canada: A scoping review with a realist perspective. *The Extractive Industries and Society*, *8*(2), 100901. https://doi.org/10.1016/j.exis.2021.100901

Naylor, A., Ford, J., Pearce, T., & Van Alstine, J. (2020). Conceptualizing Climate Vulnerability in Complex Adaptive Systems. *One Earth*, *2*(5), 444–454. https://doi.org/10.1016/j.oneear.2020.04.011

Nuttall, M. (2012). Tipping Points and the Human World: Living with Change and Thinking about the Future. *AMBIO*, *41*(1), 96–105. https://doi.org/10.1007/s13280-011-0228-3

O'Brien, K., Eriksen, S., Nygaard, L. P., & Schjolden, A. (2007). Why different interpretations of vulnerability matter in climate change discourses. *Climate Policy*, *7*(1), 73–88. https://doi.org/10.1080/14693062.2007.9685639

O'Faircheallaigh, C. (1998). Indigenous people and mineral taxation regimes. *Resources Policy*,

*24*(4), 187–198. https://doi.org/10.1016/S0301-4207(98)00031-2

O'Faircheallaigh, C. (2021). Explaining outcomes from negotiated agreements in Australia and Canada. *Resources Policy*, *70*, 101922. https://doi.org/10.1016/j.resourpol.2020.101922

Overland, J., Dunlea, E., Box, J. E., Corell, R., Forsius, M., Kattsov, V., Olsen, M. S., Pawlak, J., Reiersen, L.-O., & Wang, M. (2019). The urgency of Arctic change. *Polar Science*, *21*, 6–13. https://doi.org/10.1016/j.polar.2018.11.008

Parlee, B. L. (2015). Avoiding the Resource Curse: Indigenous Communities and Canada's Oil Sands. *World Development*, *74*, 425–436. https://doi.org/10.1016/j.worlddev.2015.03.004

Povinelli, E. A. (2002). *The Cunning of Recognition: Indigenous Alterities and the Making of Australian Multiculturalism*. Duke University Press.

Sachs, J. D., & Warner, A. M. (2001). The curse of natural resources. *European Economic Review*, *45*(4), 827–838. https://doi.org/10.1016/S0014-2921(01)00125-8

Sam-Aggrey, H. (2021). The role of the Tłı̨chǫ Comprehensive Agreement in shaping the relationship between the Tłı̨chǫ and the mining industry in the Mackenzie Valley, Northwest Territories (NWT), Canada. In M. Tennberg, E. G. Broderstad, & H.-K. Hernes, *Indigenous Peoples, Natural Resources and Governance* (1st ed., pp. 104–124). Routledge. https://doi.org/10.4324/9781003131274-6

Sandlos, J., & Keeling, A. (2012). *Giant Mine: Historical Summary*. Project Report: Abandoned Mines in Northern Canada Project.

Schmidt, G. (2014). Resource Development in Canada's North: Impacts on Families and Communities. *Journal of Comparative Social Work*, *9*(2), 174–198. https://doi.org/10.31265/jcsw.v9i2.116

Siders, A. (2019). Adaptive capacity to climate change: A synthesis of concepts, methods, and

findings in a fragmented field. *WIREs Climate Change*, *10*(3), e573. https://doi.org/10.1002/wcc.573

Sietsma, A. J., Ford, J. D., Callaghan, M. W., & Minx, J. C. (2021). Progress in climate change adaptation research. *Environmental Research Letters*, *16*(5), 054038. https://doi.org/10.1088/1748-9326/abf7f3

Smit, B., & Wandel, J. (2006). Adaptation, adaptive capacity and vulnerability. *Global Environmental Change*, *16*(3), 282–292. https://doi.org/10.1016/j.gloenvcha.2006.03.008

Song, X., Hansen, M. C., Stehman, S. V., Potapov, P. V., Tyukavina, A., Vermote, E. F., & Townshend, J. R. (2018). Global land change from 1982 to 2016. *Nature*, *560*(7720), Article 7720. https://doi.org/10.1038/s41586-018-0411-9

Southcott, C., Abele, F., Natcher, D., & Parlee, B. (2022). What Must Happen for Extractive Industry to Help the Sustainability of Northern Communities?. *Extractive Industry and the Sustainability of Canada's Arctic Communities*, 357.

Southcott, C., Abele, F., Natcher, D., & Parlee, B. (2018). Beyond the Berger Inquiry: Can Extractive Resource Development Help the Sustainability of Canada's Arctic Communities? *Arctic*, *71*(4), 393–406.

Steenberg, J. W., Duinker, P. N., Creed, I. F., Serran, J. N., & Ouellet Dallaire, C. (2019). Alternative scenarios for the future of the Canadian boreal zone. *Environmental Reviews*, *27*(2), 185–199.

Tappan, M. B. (2005). Domination, Subordination and the Dialogical Self: Identity Development and the Politics of 'Ideological Becoming.' *Culture & Psychology*, *11*(1), 47–75. https://doi.org/10.1177/1354067X05050743

Taylor, C. (1995). The Politics of Recognition. In *Campus Wars*. Routledge.

Tłı̨chǫ Government. (February 2022). TŁĮCHǪ OVERVIEW OF POTENTIAL SOCIOECONOMIC IMPACTS CAUSED BY UPCOMING MINE CLOSURES. tlicho.ca

Trotter, R. T. (2012). Qualitative research sample design and sample size: Resolving and unresolved issues and inferential imperatives. *Preventive Medicine*, *55*(5), 398–400. https://doi.org/10.1016/j.ypmed.2012.07.003

Turner, D. A. (2006). *This is Not a Peace Pipe: Towards a Critical Indigenous Philosophy*. University of Toronto Press.

Usher, P. J. (1993). Northern development, impact assessment, and social change. *Anthropology, Public Policy and Native Peoples in Canada*, 98-130.

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

Wall, E., & Marzall, K. (2006). Adaptive capacity for climate change in Canadian rural communities. *Local Environment*, *11*(4), 373–397.

Watkins, M. (1977). *Dene Nation: The colony within*. University of Toronto Press.

White, G. (2020). *Indigenous Empowerment through Co-management: Land Claims Boards, Wildlife Management, and Environmental Regulation*. UBC Press.

Whyte, K. (2016). Indigenous Peoples, Climate Change Loss and Damage, and the Responsibility of Settler States. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2770085

Wolfe, P. (2006). Settler colonialism and the elimination of the native. *Journal of Genocide Research*, *8*(4), 387–409. https://doi.org/10.1080/14623520601056240

Zoe, J.B. (2005). Evidence given at the Standing Senate Committee on Aboriginal Peoples in Ottawa, 8 February.

Zoe, J.B. (2006). Audiotapes of lectures on the Tlicho Cosmology to Tlicho Government. 9 March in Rae-Edzo.

## Appendix A – Diamond Mines of the Northwest Territories


Map provided by Government of the Northwest Territories, May 2023

# Appendix B - Interview Guide: Mine Workers and Families

**You and your community**

Have you lived here all your life? What do you like about it? What don't you like about it?
What activities do you do on the land?
What other Tłı̨chǫ cultural activities do you do?
What do you do for work?

**Mining**

For mine workers:

- What kind of work did you do in the mines?
- How would you describe the work culture at the mine?
- What were the people you worked with like?
- Did you feel valued by the mines?
- How has employment in mining changed your life, your family, your relationship with your community?
- Did your work in the mine conflict with being Tłı̨chǫ?

How has mining shaped quality of life and community wellbeing for the Tłı̨chǫ?
Which of these changes are you happy/not happy about?
How has mining affected the Tłı̨chǫ land and people over time?

What role will it/should it play in the future?

**Climate Change**

How has climate change affected the Tłı̨chǫ land and people over time?
How has it affected you and your family?
What are your thoughts on how climate change is likely to affect the Tłı̨chǫ land and people in the future?
How does climate change shape quality of life and community wellbeing here?

**Envisioning Future Pathways**

What are the essential elements to support Tłı̨chǫ people in the future.
What capacity do the Tłı̨chǫ have to revitalize these things, or do you think that is out of your community's control?
What future do you see for yourself as the mines wind down? Does it involve mining or something else?
OR
What are characteristics of a good job? / What is your dream job?

- Are you okay with working out of the community?

Do you feel connected to your Tłı̨chǫ culture?

- Children?

Do you think mining conflicts with traditional Tłı̨chǫ culture?
What are areas you think the Tłı̨chǫ government should monitor/research for the future?
Is there anything else about mining/ the environment/ or climate change that you would like to share with us?

## Appendix C - Interview Guide: Government Staff

Tell us about yourself, your role, are you Tłı̨chǫ?
How has mining affected community wellbeing for the Tłı̨chǫ Nation?
Have you been involved in previous impact assessment processes?

- What was your experience like?
- How was the knowledge provided by the Tłı̨chǫ treated?
- Do you think Tłı̨chǫ concerns and priorities were recognized? How so?
    - What are the elements that facilitate or prevent recognition of Tłı̨chǫ perspectives in impact assessment?
- Have any issues arisen over the life of approved projects that were not accounted for by any party in the impact assessment?

Are you satisfied that the TG has sufficient decision-making power and capacity to protect its lands and peoples, particularly with respect to impact assessment?
If not what rights and/or resources do the TG lack that are needed to participate meaningfully in impact assessment processes?
What are the broader visions of the Tłı̨chǫ regarding the role of mining in the future? Are other future pathways being considered?
How has climate change affected community wellbeing for the Tłı̨chǫ?
How does climate change come into visioning the futures for the Tłı̨chǫ?

**Envisioning Future Pathways**
What are the essential elements needed to support thriving communities for the Tłı̨chǫ people?
Which of these elements are most strongly represented within the Tłı̨chǫ community today?
Which of these elements have been lost? Under threat? What is the cause of their loss or threat?
What capacity do the Tłı̨chǫ have to revitalize these things, or do you think that is out of your community's control?
What are your hopes, worries for Tłı̨chǫ people? (Plain language)
Also: ask if there's anyone else we should make sure to speak with.

## Appendix D - Interview Guide: Elders

Have you lived here all your life?
- What has changed in Tłı̨chǫ communities in your lifetime?

How has mining affected the Tłı̨chǫ land and people over time?
- Effects on the land?
- Effects on culture?

Would you support future mining?
- (if so) What can be done to make mining benefit Tłı̨chǫ more?
- (if not) What should the Tłı̨chǫ do in the future?

Have you noticed any changes on the land or in the seasons over time?
- Effects on the animals?
- Will changes continue in the future?

What are your hopes and worries for Tłı̨chǫ people?
- What should young people know?
- What do communities need?

# Appendix E: Information Sheet and Consent Form

## ***Study Information Sheet***

**Title of Project.** Advancing impact assessment for Canada's Socio-ecological systems: Mining in Northern Indigenous Lands.

**Investigators.**

Lead Investigator: Dr. Debra Davidson, Department of Resource Economics and Environmental Sociology, University of Alberta. Email: debra.davidson@ualberta.ca. Text or Phone: 780-668-2966

Research Assistant: Angeline Letourneau, Department of Resource Economics and Environmental Sociology, University of Alberta. Email: aml3@ualberta.ca. Text or Phone: [to be filled out prior to field research]

Research Assistant: Lucas Schmaus, Department of Resource Economics and Environmental Sociology, University of Alberta. Email: lschmaus@ualberta.ca. Text or Phone: [to be filled out prior to field research]

**Background.** You are being asked to participate in a research study. This study is part of a larger research project intended to highlight the social, political and cultural dimensions of development that are important to consider in impact assessment processes in order to ensure the protection of rights, values, and social wellbeing of communities, particularly in the face of climate change. The project includes several different regional case studies, one of which focuses in the Tłı̨chǫ lands and people. Our findings from this study will then be compared to other regional case studies, to highlight aspects that are held in common and aspects that are unique to each region. We are inviting several members of Tłı̨chǫ communities of different genders, ages, and levels of involvement in mining, or the impact assessment of mining, to participate in an interview with us. We anticipate that new knowledge generated from this study can enhance the capacity of the Tłı̨chǫ to assert their interests and rights in future impact assessment processes associated with future development proposals.

**Purpose.** We seek to co-create knowledge to inform the policy and practice of impact assessment in Canada, and development planning more broadly, by enhancing the ability to acknowledge and address the social impacts of such development, and the rights of Indigenous and non-Indigenous community members to self-determination in choosing future development pathways. This research will also contribute to the theses of participating graduate students.

**Study Procedures.** Your participation will involve an interview with one or more of our researchers, in which researchers will ask you some questions about working and living in your community, your perspectives on mining development and climate change, and what you think the future may hold. The interview will likely take approximately an hour, although we will be happy to listen for longer. We would like to be able to audio-record the interview with your

consent, and also take notes. If you would like to be a part of a documentary film, we would also invite you to have your interview video recorded, and we may take some photographs. The interview can take place at a time and location of your choosing, or we can conduct the interview virtually if you prefer, by the virtual meeting platform Zoom.

You the interview participant will be the owner of the data we collect. The audio file and transcript for each interview will be provided to you, for personal storage and sharing, and/or submission to the Tłı̨chǫ Government to deposit in a research repository. We are seeking access to your data for a minimum of 7 years, during which time we will analyze the data along with that of other interviewees, and develop academic manuscripts, graduate theses, oral conference presentations, as well as reports and presentations for the Tłı̨chǫ Government and communities. This research may also be incorporated into teaching materials. After 7 years, all data files from your interviews held by the university researchers will be destroyed. To ensure we have captured your voice, knowledge and perspective accurately and in an appropriate manner, we will share any manuscripts that include your data with you, and invite you to review them prior to publication to ensure they accurately reflect your input.

**Benefits and Risks.** There are no direct personal benefits for participants; however, we hope that this project can generate new knowledge and understanding that benefit Tłı̨chǫ communities, and other communities facing the impacts of climate change and industrial development. We do not anticipate any direct personal risks or discomforts as a result of your participation.

**Payment or Remuneration.** Each interviewee will receive $100 to compensate them for their time. Elders will receive $200. Payment may be kept even if you decide in the middle of the interview, or after the interview, that you wish to withdraw.

**Confidentiality.** No member of our research team will identify interview participants, or discuss the content of interviews with anyone other than research team members. This includes the community liaison officer who will be present. You have the option of being identified by name in future presentations and publications, or remaining anonymous. In the latter case, we will assign a pseudonym or number to all files associated with your interview. All audio-recordings, transcriptions of the recordings, and notes will be kept on a password-protected university server accessible only by the members of our research team. All computers and recorders will be encrypted, as will the recording files.

**Voluntary Participation and Freedom to Withdraw.** Your participation is entirely voluntary. You may choose not to answer any questions, or stop the interview at any time. You have the right to withdraw from the study at any time after the interview ends, up to one month after your interview took place.

The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta. If you have questions about your rights or how research should be conducted, you can contact them at reoffice@ualberta.ca. This office is independent of the researchers.

## ***Consent Statement***

I have read the Information Sheet and the research study has been explained to me. I have been given the opportunity to ask questions and my questions have been answered. If I have additional questions, I have been told whom to contact. I agree to participate in the research study described above and will receive a copy of this consent form. I will receive a copy of this consent form after I sign it.

I agree to have my interview audio-recorded: Yes No

I agree to have photographs of me taken during the interview: Yes No

I agree to be video-recorded during the interview: Yes No

I would prefer: To remain anonymous To be identified by name

_____ _____
Name (printed) and Signature of Participant Date

_____ _____
Name (printed) and Signature of Researcher Date