A thesis submitted to the Department of Environmental Sciences and Policy of Central European University in part fulfilment of the Degree of Master of Science

Mirroring strength back to the community: the role of participatory mapping in documenting territories of importance and past and present land-use practices of Indigenous communities.

Lessons from the James Smith Cree Nation in Saskatchewan, Canada

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Author's declaration

No portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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ABSTRACT OF THESIS submitted by:

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As concerns for the changing climate and its consequences on the environment grow, researchers have increasingly turned to the long-ignored and long-silenced land-based knowledge of Indigenous peoples. For the most part transmitted orally, the Ecological Knowledge of many Indigenous Peoples is being lost at an alarming rate, prompting researchers and practitioners alike to find ways to preserve it. Participatory mapping represents a relevant research method to maintain Indigenous Ecological Knowledge and to fully capture Indigenous people's relationships with the land. Using participatory mapping, this research aims to answer to a need raised by the James Smith Cree Nation in Saskatchewan, Canada, whilst at the same time adding to the extant literary and practical knowledge on participatory mapping. Through the engagement of Elders, knowledge holders, and land-users, this research documents and maps places of importance and past and present land-use practices within the James Smith community. The data reveal the connection that members of James Smith have with several geographical areas around their reserve. These findings may be used by the community for land claims, and to halt future development projects encroaching on their land. The study participants' positive response to the mapping workshops additionally reinforces the notion that, if executed in a way that ensures a complete and meaningful engagement of the community involved, participatory mapping can help create a positive research environment when working with Indigenous communities.

Keywords: participatory mapping, land-use, Indigenous Ecological Knowledge, taxonomy of plural values, Six R's of research, James Smith Cree Nation, Saskatchewan.

To Elder M.

Thank you for sharing your knowledge,
and happy continuation of your journey.

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List of Abbreviations

CBPR	Community-Based Participatory Research
FG	Focus Group
GIS	Geographic Information Systems
IEK	Indigenous Ecological Knowledge
JS	James Smith
JSCN	James Smith Cree Nation
P	Participant
SK	Saskatchewan
TEK	Traditional Ecological Knowledge

Land Acknowledgement

As a visiting researcher in Saskatchewan, Canada, I acknowledge that I lived, learned, and worked on traditional Indigenous territories. This thesis was completed on Treaty 6 Territory and the Homeland of the Métis. I pay my respect to the First Nations and Métis ancestors of this place and reaffirm my commitment to respectful relationships with one another.

Positionality Statement

My name is Carmen Margiotta. I am a European citizen holding a Eurocentric worldview, currently living on Treaty 6 Territory and the homeland of the Métis in Saskatoon, Saskatchewan as a visiting research student. I was born to Antonella Polignano and Nicola Margiotta, and raised in Putignano, Southern Italy.

My background is in anthropology and I am currently pursuing a master's degree in Environmental Science, Policy and Management, which is jointly offered by the Central European University in Vienna, the University of the Aegean in Greece, and Lund University in Sweden, with the support of the University of Saskatchewan in Canada.

As a European on traditional Indigenous land, my months in what is now known as Canada have been a continued exercise in understanding how my presence in Indigenous spaces can influence behaviours, conversations and levels of comfort, and they have been a welcomed reminder to not take up space where I am an outsider and a guest. My experience at the University of Saskatchewan has helped me further understand the privileges that I hold through my heritage, education, and socio-economic status. These last few months have been a journey of personal growth, and one that has taught me to understand and respect different worldviews, as well as to attempt to decolonise my own.

1. Introduction

One day, Creator asked Wasakachak[1] to prepare, gather ad store moss needed to build the earth, where he and all other beings would live. But Wasakachak disobeyed. The storm came and the water started rising. After the great flood, Wasakachak found himself floating helplessly on a wooden raft as everything around him was covered with water. Desperate, Wasakachak asked Amîsk (beaver) if he could dive all the way down and gather up some moss to bring back to surface. Amîsk tried, but the water turned out to be too deep and he drowned. The next day, Wasakachak asked Nîkîk (otter) to help him and dive down. He said: "Nîsîmî (my younger sibling), please help me, I need you to get me some moss so that I can create earth". Nîkîk tried his best, but he too drowned. On the third day, Wasakachak was hopeless, and he worried that he would starve to death. He waited and waited until he saw Wâchâsk (muskrat). Wasakachak called him over and asked the same thing. Wâchâsk swam and swam, but three times he resurfaced without any moss. Wâchâsk dove down a fourth time, as Wasakachak waited. Wasakachak was just about to give up all hope, when he saw bubbles appear on the surface of the water. Wâchâsk resurfaced, he was weak and had almost drowned, but he was carrying moss in his mouth. Wasakachak pulled him up onto the raft and helped him gather his strength back. Now that he finally had the moss, Wasakachak followed the original instructions of Creator: he squeezed the water from the moss, blew on it, and so earth was created.

This is what the Cree creation story tells. Just like other traditional stories of the Cree, this creation story is born out of the people's long-term relationship with the land (Michell, 2005). This thesis will explore these relationships in the context of James Smith, a Cree Nation in central Saskatchewan, Canada. The creation story above epitomises the holistic worldview of the Cree, where humans, nature, and the supernatural are all interlinked and interconnected (Michell, 2005). From start to finish, this research was co-created. Councillors and Elders from the James Smith Cree Nation said that telling stories of where the community went to access resources, meet and trade reminded them of the story of Wasakachak. I wished to start this thesis with an Indigenous narrative, and with a story that speaks to the community's ties with the land.

[1] A JSCN community representative expressed his wish that I spell Wasakachak's name as such, as opposed to Herman Michell's (2005) alternative spelling "Wîsâkēchâk".

1.1. Research Background

In late summer 2022, Dr. Bradford and Dr. Bharadwaj from the University of Saskatchewan were invited to meet with Chief and Council members from the James Smith Cree Nation (JSCN). In this occasion, they were told a story that serves as a background for this research. JSCN leadership explained that the province of Saskatchewan has started selling off plots of land. The selling of some of these areas to private buyers has created conflict between Indigenous communities, where each Nation argues that they have historically used the lands being sold. On the one hand, this land is being given away without any of the communities' consent, and on the other, multiple First Nations have come forward claiming the land as theirs, and thus arguing that it cannot be sold, or asking to be compensated. To re-gain control over these lands, the JSCN – among other Nations – are hoping to sue the provincial government. However, the fact that multiple communities wish to claim the lands as their own weakens their claims. Indeed, the provincial government is pushing back arguing that the communities cannot sue until they are able to prove who the land belongs to. During the meeting with Dr. Bradford and Dr. Bharadwaj, a community representative came forward saying that members of the JSCN have some information on their people's land use in the Fort à la Corne Forest, but they do not know much about where people went besides that. Thus, JSCN Chief and Council members asked Dr. Bradford and Dr. Bharadwaj to work with the community's Elders, as well as their knowledge holders and land-users, to begin collecting some information on land-use in, but mostly outside Fort à la Corne. This initial meeting soon turned into an official agreement with the University of Saskatchewan. Dr. Bradford and Dr. Bharadwaj then co-designed with the community partners what they could do to support the community's research need. In September 2022, I was invited to join Dr. Bradford and Dr. Bharadwaj's research team.

Stemming from an impetus of the community, this research first and foremost answers to the need expressed by JSCN leadership during the meeting with Dr. Bradford and Dr. Bharadwaj. As such, I will use participatory methods to document land-use practices and territories of importance to members of the JSCN. At the same time, this community-driven participatory work created space for me to reflect on the methodology used and to add to the extant academic knowledge as well as practical understanding of participatory mapping.

1.1.1. Problem Definition

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), states that "respect for Indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and proper management of the environment" (UN 2007, p. 2). Indeed, researchers and decision-makers have increasingly shown interest for a long-ignored body of knowledge about the environment – that of Indigenous Peoples (Brodnig and Mayer-Schönberger, 2000) – to achieve a better management of natural resources.

Indigenous worldviews have at heart the long-term sustainability of the planet (Datta and Marion, 2021). Indigenous Peoples' understanding of their homelands, and of nature, is based on a reciprocal relationship where all creations exist respectfully with one another (Atleo and Boron, 2022). As concerns about the changing climate grow, the pendulum has swung back, and more people look up to Indigenous ways of knowing to find ways to relate to the environment sustainably (Michell *et al*, 2021). However, predominantly transmitted orally, this invaluable knowledge is being lost (Charles, 2022). Whilst both practitioners and researchers are yet to find the best tools to maintain Indigenous people's long-held knowledge of the environment (McCarter *et al*, 2014), participatory mapping has recently emerged as a promising means to preserve this knowledge (Fraser Taylor, 2021).

As illustrated by Fraser Taylor (2021), mapping with Indigenous peoples is not the same as mapping for them. As such, participatory mapping methods must follow the principles of community-based participatory research, where Indigenous people are no longer seen merely as research subjects or as anthills being studied through a magnifying glass (Bharadwaj, 2014). Instead, participatory mapping should strive for meaningful engagement of participants. Although not extensively studied, some literature has attempted to understand the strengths and shortcomings of participatory mapping in Indigenous communities. There currently are a series of underlying literary debates on the subject. On the one hand, researchers have praised participatory mapping for its ability to create relaxed research environments where participants feel comfortable to share their life experiences (Robinson *et al*, 2016; Rye ad Kurniawan, 2017; Bryan, 2011; Ramirez-Gomez *et al*, 2013). On the other, a body of literature has raised concerns that range from the practical difficulties connected to participatory mapping, to the emergence of conflict during mapping workshops (Eisner *et al*, 2012; Anthias, 2019). Some researchers (Chapin *et al*, 2005; Sletto, 2012; de Robert *et al*, 2006; Rundstrom, 1995) have questioned the ability of Western mapping methodologies to represent Indigenous notions of

land and nature altogether. This research attempts to contribute to ongoing debates on participatory Indigenous mapping by reflecting on the mapping experience with members of the JSCN.

Part of the Cree, known as the largest and most widespread Indigenous group in Canada (McLeod, 2000), the James Smith Cree Nation is a particularly important community to work with. The JSCN reserve is situated in an ecological borderland that will likely experience significant changes due to climate change. Forest fires, pest outbreaks and drought are expected to hit this region as a gradual shift in vegetation will favour grassland over boreal forest, and will significantly alter the local ecosystem (Pittman, 2010). As a shift in the collective understanding of the environment sees both researchers and practitioners try to harvest sustainability principles common in Indigenous worldviews, the preservation of land-based knowledge of members of the James Smith Cree Nation will first and foremost benefit the community as they will have to navigate the impacts of climate change. While helping the JSCN document territories of importance for their community, this research will also document Elders', knowledge holders', and land-users' knowledge of the land, and at the same time contribute to enrich participatory mapping, a tool that centres Indigenous people.

In this thesis, I do not intend to generalise. I understand that the experiences of Indigenous Peoples across the world, and those of First Nations within Canada and Saskatchewan are varied and diverse. I move through this research with an open-mind and respect, and I apologise ahead of time for any misrepresentations.

1.2. Objectives and Research Questions

The aim of this thesis research is threefold. This research aims to (1) meet the community needs by identifying places and practices of importance to the JSCN that had been previously undocumented. To provide a more comprehensive picture of JSCN relationships with the territories identified, this research will (2) explore the changes that the community's land-use practices have undergone in the last fifty to seventy years. Lastly, this research wishes to (3) add to the extant knowledge on participatory mapping with Indigenous peoples.

Based on these aims, both community- and researcher-driven, two main research questions, and one sub-question, will be answered:

I. What are additional territories of importance and present and past land-use practices identified in the James Smith Cree Nation?
    a. How have these practices changed in the last fifty to seventy years?
II. What are the benefits and barriers to participatory mapping with Indigenous communities?

1.3. Outline of thesis

After having introduced the background to this research, as well as the questions that it aims to answer, **Chapter 2** will summarise the literature important to understand the themes discussed here. In particular, the second chapter of this thesis will provide an overview of land-use amongst the Cree and other First Nations in Canada, and it will illustrate key current debates on participatory mapping with Indigenous peoples. Lastly, Chapter 2 will introduce the taxonomy of plural values and other conceptual theories at the basis of this investigation. **Chapter 3** describes the study area and the methodology used for this research – including community-based participatory research, the rationale behind the mapping project and expert elicitation, and ethics and limitations. **Chapter 4** and **Chapter 5** present respectively the results of the 17 interviews conducted with JS community members, and the findings from 2 expert elicitations. In **Chapter 6**, these results will be distilled and discussed in relation to the literature introduced in Chapter 2. Lastly, **Chapter 7** will bring the reader's attention back to the main research questions and will provide concluding remarks as well as a series of recommendations for future studies.

2. Literature Review

This literature review is divided into three sub-chapters: the first will provide a background on Indigenous people's relationship with the land in the land known today as Canada, the second will illustrate the current state of knowledge on participatory mapping with Indigenous communities, and the third will present the theories that have informed this research. Whilst not comprehensive, as only inclusive of articles published in English and within the scientific literature, the literature provided here offers an essential background to the themes examined in this thesis, and it will help situate my research findings.

2.1. First Nations Connection to the Land

"We are the land and the land is part of who we are"
(Michell *et al*, 2021: 28)

Indigenous communities' connection to the land is extensively discussed in the literature. Central to many Indigenous worldviews, the land is at the root of First Nations' cultures, knowledge systems, languages, spirituality, and traditional art forms in today's Canada (Michell *et al*, 2021). Whilst it is essential to stress that Indigenous beliefs and knowledge vary globally and between different communities and generations (Datta and Marion, 2021), it is equally important to highlight that there are a number of features that Indigenous communities in North America share: first and foremost, a strong connection with the land, and respect for nature (Atleo and Boron, 2022; Collins and Murtha, 2009). For the First Nations that have inhabited Turtle Island – or North America – for thousands of years, a core aspect of their worldview is reciprocity with nature (Atleo and Boron, 2022).

Indeed, whilst Western worldviews separate the physical from the spiritual, and try to reduce and compartmentalise the natural world in order to understand and extract resources of value from it, Indigenous knowledge systems have a holistic understanding of land and nature, where all parts (humans, water, animals and plants) are inseparable, interdependent and interconnected (Michell, 2005; Atleo and Boron, 2022). For this reason, when one element of the land is misused and compromised, this causes a domino effect which profoundly affects all other life forms (Michell *et al*, 2021). "All our relations" is a sentiment, and a statement, often heard in First Nations (Michell,

2005: 39). Wasakachak, in the creation story, considered the beaver, the otter and the muskrat to be his relatives. The ontologies of Indigenous Peoples in Canada, as shown in the literature (Datta and Marion, 2021; Fraser Taylor, 2021; Stonechild, 2006), are based on the idea that humans are not at the centre, nor superior, but equal parts of a complex environment made of many different actors, where each has something to contribute to an overall wellbeing.

Woodlands Cree scholars, Michell *et al* (2021) explain that Indigenous knowledge and ways of life are commonly passed down from one generation to another through activities connected to the land. In First Nations' epistemologies, land is often described as a teacher. For the Cree, teachings can be derived both from humans and from the natural and spiritual world, so much so that hunters, trappers, fisherpeople and medicine and wild food gatherers are considered essential educators in Cree communities. Michell *et al* further state (2021: 30): "we learn knowledge and skillsets directly and indirectly from our extended family members, including from animals, plants, dreams, and ceremonies".

But land takes on additional roles in Indigenous cultures. Amongst the Cree, land is viewed as a life-giver. Traditional child rearing used to be land-based (Charles, 2022) and women have traditionally been responsible for nurturing children's connection to and respect for the land during the first years of their lives (Michell *et al*, 2021). The land is also associated with healing and wellbeing, and daily land-based activities are understood as a vector for optimal mental, spiritual, emotional and physical health (Michell *et al*, 2021). Land is also inherently spiritual for Indigenous peoples, including the Cree. Michell *et al* (2021) make clear that in Indigenous worldviews, the physical realm is not separated from the spiritual. For the Woodland Cree, as illustrated by Charles (2022), the *Opimāchihiwew* (or Creator of all things) embodies different elements in the natural world at different times. Everything in nature – plants, animals, minerals – is personified, with the land being "Mother Earth", and treated as a relative. All of these elements, and especially water, fire, air and earth, take on an active role in spiritual ceremonies, which are thus rooted in the land (Michell *et al*, 2021).

It comes as no surprise, then, that non-destructive land use is a fundamental criterion in many Indigenous worldviews. The principle of non-destruction of nature, as explored by Atleo and Boron (2022: 2), "is an embodied teaching that compels many Indigenous people to defend their territories". Indigenous ways of life define the land and everything within it as part of family ties,

where everyone cares for one another. Thus, Indigenous people consider themselves stewards, responsible for the well-being and maintenance of all parts that constitute the land (Datta and Marion, 2021). This responsibility is understood as both individual and collective. Datta and Marion (2021) illustrate that in Cree First Nations the responsibility for the environment is fragmented into different roles, which are taken on by different members, and that ultimately benefit the whole group. For this reason, Michell *et al* (2021) make it a point that First Nations' life on the land was far from utopian, and that living off the land was hard work for all community members.

2.1.1. Indigenous Ecological Knowledge

Indigenous peoples' strong ties with the land lead to deeply rooted awareness of local environments, which evolves into what is known as Indigenous Ecological Knowledge (IEK). With an estimated 400 million Indigenous people worldwide, the existing IEK represents an invaluable resource (Tom *et al*, 2019). This is defined as a cumulative set of diverse beliefs, practices and understandings of local environments, which entail detailed information on local ecological systems, as well as diverse management strategies and adaptive capacity to environmental changes (McCarter *et al*, 2014). IEK has allowed Indigenous groups to maintain "thoughtful and deliberate human-environmental interactions" that we now understand as being environmentally sustainable (Tom *et al*, 2019: 12). For example, the Cree have historically upheld a strong ethic of conservation: Michell *et al* (2021) illustrate how the Woodland Cree would ensure that all parts of the Caribou get used, from sharing meat with other community members, to using the hide for clothing and shelter.

It should be noted here that IEK is also often referred to as Traditional Ecological Knowledge (TEK). The use of the word "traditional" in association with Indigenous ways of knowing has led to an ongoing debate in the literature. Already in the 1990s, Corsiglia and Snively argued that referring to Indigenous peoples' knowledge as "traditional" risks reaffirming the idea that Indigenous ways of knowing belong to a distant past, have no use in today's world, and are thus rendered inferior to their modern counterpart comprised by Western knowledge systems (Corsiglia and Snively, 1995, as cited in Michell *et al*, 2021). However, Michell *et al* (2021) argue that knowledge transcends time, it evolves alongside society, and thus Indigenous knowledge, even when labelled "traditional", should not be understood as static and frozen in time, but simply as a *long-term* connection with the land. Instead of "traditional", Michell *et al* (2021) recommend the use of the umbrella definition: "First Nations knowledge systems", of which environmental knowledge is just a facet. On the other hand,

Houde, after presenting this literary debate, points out that whilst some Indigenous people agree on the limitations that the term "traditional" imposes, others may prefer to use it as it "roots their knowledge in the past and gives it the authority of difference in the face of state resource management, which claims to be supported by science" (Houde, 2007: 3).

IEK is central in this research as, on the one hand, it is considered a key resource by First Nations, and on the other, it is increasingly being recognised as a means to resolve climate change. In the words of Michell *et al:*

> In more recent times and with increased environmental concerns, it appears the pendulum has swung back where many people regardless of race are turning to Indigenous cultures, worldviews, knowledge, and values on how to maintain balance in their lives, how to relate to other humans, and how to practice sustainable ways of knowing and being. (Michell *et al*, 2021: 28)

Despite being a carrier of important lessons, the very existence of IEK is at risk. Aswani *et al* (2018) show that because it is passed down by cultural transmission, and predominantly orally, local ecological knowledge is disappearing at an alarming rate. Michell *et al* explain that with the passing of many communities' Elders, wisdom around the land is being lost – they say: "when we lose one Elder, it is like losing an entire library" (Michell *et al,* 2021: 31). But other, exogenous, factors are at the root of this phenomenon, including colonisation and environmental degradation, which are presented in greater detail below.

The Role of language

A contributing factor to the loss of Indigenous environmental knowledge is the disappearance of Indigenous languages (Michell *et al*, 2021). As previously mentioned, Indigenous knowledge is predominantly transmitted orally, bringing language to the forefront when discussing IEK. In Cree cultures, for example, storytellers and land teachers commonly tell stories in Cree as the language retains key elements of Indigenous knowledge (Charles, 2022). Language, in other words, is a repository of experiences, and a medium which tells tales of people's relationship with the land – by naming places in a certain way, language provides information on local knowledge and aspects of life connected to that place (Ingram, 2021; Schreyer, 2008). Ingram (2021) explains that traditional names of locations and resources may reveal important information, for example on the physical

characteristics of a place, on the resources available there, and on the seasonality of certain foods (e.g., "spring salmon"). Similarly, Charles (2022) illustrates that stories told in Indigenous languages may better inform on practical aspects of land-use, such as directions, animal behaviour, and medicine use. Furthermore, the Cree participants in Bakker's study (1996) report that stories told in Cree are more entertaining and funnier, as Cree allows to create playful words to describe places and situations. Lastly, Indigenous language is additionally framed in positive terms as it may help reinforce the idea that First Nations have used the land for time immemorial, and that they maintain profound ties with it (Ingram, 2021).

But language is being lost. Colonisation, assimilation, and residential schooling, where children were forbidden to speak their mother tongues, have all contributed to this loss. Schreyer (2008) argues that as industries continue to make their way into Indigenous lands across Canada, more Indigenous languages will be lost, especially as people will be forced to communicate in English with employers, agency representatives and workers. Schreyer (2008) goes on to explain that whilst Cree is not yet at risk of dying out, imagining a future where the language will cease to exist also means imagining a future with a much narrower understanding of Cree's relationship with the land. Let us remember that "once language is lost, the knowledge associated with it is also lost" (Schreyer, 2008: 444).

2.1.2. Colonisation and Land Use Changes

Over 500 years of colonisation and assimilation have had major impacts on First Nations' relationship with the land. Settler colonialism has focused on the violent erasure not only of Indigenous cultures, societies and languages, but also of Indigenous peoples' connection to their lands and waterways (Corntassel, 2020).

Ever since Europeans' first contact, First Nations have forcibly been removed and displaced to make space for the development of settler society. Land was central to the settler colonial project, which followed Locke's idea of *terra nullius*. With this idea, settler society saw territories in America as "vacant", which justified the land dispossession of Indigenous communities (Atleo and Boron, 2022). As land was seen as a commodity to capitalise on, Indigenous worldviews of respect and reciprocity with nature were disregarded and silenced (Datta and Marion, 2021). Processes of assimilation further contributed to oppressing and eradicating Indigenous cultures, including Indigenous local knowledge of the land. Colonisation used different methods to try to bring forward

this assimilation and erasure (Atleo and Boron, 2022). Residential schools, for example, were a major force of colonisation across Canada and North America, as they served to separate Indigenous children from their families, lands and traditional teachings (Michell *et al*, 2021).

The legacy of colonialism continues to subjugate and marginalise First Nations to this day. First Nations, and Indigenous communities globally, "bear a disproportionate share of environmental burdens compared to their non-Indigenous counterparts, a trend that has been described as environmental racism" (Collins and Murtha, 2009: 960), and their territories are frequently affected by deforestation, species extinction, water and soil contamination (Datta and Marion, 2021). All too often, Indigenous communities are neglected by industries and the government, and they continue to not a voice in decisions regarding their lands (Datta and Marion, 2021). Collins and Murtha (2009) state that environmental legal procedures in Canada have historically kept Indigenous people out of meaningful decision-making processes. A stark contrast between Indigenous and Western understandings of nature lies in the fact that whilst for Indigenous peoples nature is a relative, for settlers the land has historically been understood as a property to be exploited for profit (Atleo and Boron, 2022; Collins and Murtha, 2009). Many Elders of Indigenous communities across Canada blame the destruction of land on greediness. It is not uncommon to hear of environmental disasters where, for example, pipeline leaks have rendered Indigenous lands and waterways inaccessible (Datta and Marion, 2021). The participants in Ballard *et al*'s study (2020) with a First Nation community in Manitoba were affected by a human-made flood in 2011, and they reported that the flood kept them from being able to practice hunting and trapping. Not only did this cause great distress, but it also forced the community to resort to commercial food options, which they were not accustomed to and deemed unhealthy. The Elders in Datta and Marion's study with Cree Nations in Saskatchewan (2021) point out that the unfavourable economic conditions of many Indigenous communities – further explored below – make it financially challenging for First Nations to protect their lands, thus resulting in further marginalisation of their communities, pollution of the land, and loss of local knowledge of the environment.

As a consequence of centuries of colonisation and oppression, which continue to this day, many First Nations across today's Canada have lost much of their culture's knowledge systems, their origins and their connection to the land. Michell *et al* state (2021: 31): "when you destroy the earth from which our cultures are rooted, you destroy who we are as First Nations peoples".

2.1.3. Resurgence and Land Back

> "Indigenous peoples work to make sense of the jagged pieces that they have, to make them work in the cultural context that they have maintained, within systems that do not belong to them."
>
> (Atleo and Boron, 2022: 10)

Indigenous peoples are fighting back. Corntassel states (2020: 354) that every Indigenous person in today's Canada "is in a daily struggle for resurgence. It is in these everyday actions where the scope of the struggle for decolonisation is reclaimed and re-envisioned by Indigenous peoples". Indigenous people are still actively present in the land, they continue to resist acts of territorial dispossession, and find new ways to carry out and adapt their practices as needed (Atleo and Boron, 2022). Everyday acts of resurgence challenge the changes imposed by colonisation and serve to restore and renew First Nations relationship with the land, and with their culture (Corntassel, 2020).

For many Indigenous people across Canada, youth play a key role in resurgence and are given great responsibility for the future sustainability of communities (Datta and Marion, 2021). As opposed to residential schooling, which relegated Indigenous children to learning colonial trades to support settler families and businesses, young people are now being sent out into the land with Elders to learn about land practices and cultural values, whilst at the same time integrating new means of engaging with the environment, such as technology (Charles, 2022). As young people spend more time in the land, observes Charles (2022), they become more humble, respectful, and aware of themselves and their surroundings.

Article 26 of the United Nations Declaration on the Rights of Indigenous Peoples states that Indigenous peoples have a right to continue to access the land that they have traditionally used, and that their ancestors have owned and occupied (Ravna and Bankes, 2017). This right is at the very core of Indigenous peoples' drive to nationhood, and it serves as the basis of many land claims of First Nations in Canada (Anderson *et al*, 2006).

Anderson *et al* (2006) illustrate that as their land and traditional practices were taken away, the socioeconomic circumstances of First Nations across Canada progressively worsened. Colonial history, with dispossession and assimilation, have forced Indigenous peoples into poverty – with

First Nations disproportionately receiving social welfare when compared to settler Canadians – as well as poor living and health conditions, with substandard housing, high incidence of tuberculosis, diabetes, addiction, and high suicide, murder and incarceration rates. The intergenerational trauma resulting from years of oppression has left First Nation communities to deal with despair, anger, depression and hopelessness (Ballard *et al,* 2020). However, there is a desire among First Nations to rebuild their societies on strong cultural and traditional foundations (Anderson *et al*, 2006). As we have seen, notions of land are intertwined with culture and identity of a Nation – and thus, for many First Nations, the process of rebuilding their economies and societies must pass through the land. As such, First Nations across Canada are fighting to have their rights to land and resources recognised. They believe that through self-determination, self-sufficiency, and safeguarding of traditional knowledge and values, they will be able to (1) gain greater control and manage land and resources in a way that aligns with their worldviews (Houde, 2007), and (2) improve their socio-economic status (Anderson *et al*, 2006).

As the Canadian government opens up to negotiations and begins to understand that recognising Indigenous land rights benefits all (Anderson *et al*, 2006), Indigenous peoples must document where they went and how they used resources to be able to reclaim their lands and access these resources. This is where mapping comes into play.

2.2. Participatory Mapping

The previous section has highlighted Indigenous peoples' relationship with the land, how this has changed over time, and it has provided an overview of IEK. McCarter et al (2014) point out that there is a lack of information and research on approaches, best practices, and failures surrounding the maintenance of IEK. They list a series of methods available to safeguard IEK, however warning that most – from top-down approaches such as databases, to bottom-up strategies that strengthen cultural transmission – prove not to be effective. Participatory mapping, introduced in this section, can serve as a powerful tool to gain a holistic understanding of Indigenous relationship with the land, and to safeguard IEK (Fraser Taylor, 2021). The literature presented here analyses both the strengths and the drawbacks of participatory mapping.

Indigenous mapping is defined as the creation of living documents (Robinson et al, 2016) by and for Indigenous peoples, to achieve different goals (Chapin et al, 2005). Indigenous maps have long been

used as a form of countermapping, in a context where those in power have created maps of their own to take control over valuable Indigenous land and resources, marking off local Indigenous communities and practices. Whilst state maps are an "assemblage of Eurocentric knowledge practices that subjugate Indigenous epistemologies and sovereignties" (Anthias, 2019: 226), Indigenous maps can serve to empower, give space to, and preserve long silenced and disappearing Indigenous knowledge systems.

Indigenous mapping is often designed in a way that is participatory (Sletto, 2012). Participatory mapping is defined as a set of community-based research and development approaches that allow local people to transform cognitive spatial knowledge into cartographic and descriptive information by mapping places of importance to them (Ramirez-Gomez et al, 2013).

It should be noted that the literature shows that the focal point of participatory mapping projects has historically been on creating a tool to aid Indigenous communities with land claims, and rarely on other purposes, such as the preservation of IEK or for better resource management. Rye and Kurniawan (2017), Chapin *et al* (2005), and Sletto (2012) all recognise that participatory mapping has been used and continues to be used as a cartographic-legal strategy to secure land tenure and to help claim Indigenous territories.

2.2.1. Strengths of participatory mapping

Usable or *actionable knowledge* is essential in sustainability sciences, as it "can improve [our] understanding of complex environmental problems and produce effective solutions" (Robinson *et al*, 2016: 116). Robinson *et al* argue (2016) that to manage and achieve sustainability, more than just one usable knowledge system must be incorporated, and that the process of bringing multiple forms of actionable knowledge into the spotlight, as well as to combine this plurality, must be collaborative. They further introduce (2016) the idea that participatory research methods serve to facilitate knowledge sharing, and that they help Indigenous communities to negotiate and make their knowledge claims heard, which is valuable – they argue – in holistic environmental risk assessments and resource management processes. Robinson *et al* (2016) describe the ways in which collaborative processes can successfully be used to produce new knowledge stemming from blending different streams through their research in northern Australia. Here, they worked with the Aboriginal people of the Girringun Indigenous Protected Area on a participatory mapping project designed to bring

forward local Indigenous perspectives to assess the environmental risks that affect their territories. In practice, the mapping project saw participants paint and draw maps that respected their values, knowledge system, and management strategies for water and native vegetation. In theory, the project can teach the research community a few lessons, for example that using oral and visual multimedia, as well as technologies like GIS, mental mapping, storytelling, and mapping on the ground prove to be useful when engaging in conversations with Indigenous people about territorial decisions, natural resource management, and management of local species.

The discussions that arose during the workshops in Robinson *et al*'s study (2016) were just as valuable as the maps produced, as they revealed intricacies of the local IEK that maps alone would not let transpire. This is in line with Rye and Kurniawan (2017), as well as Bryan's (2011) idea that mapmaking is not merely a technical process, but rather a journey that reveals much about the lived experiences of the participants. In line with Robinson *et al*'s positive experience, Eisner *et al*'s work with Indigenous communities in Alaska (2012) – further explored below – shows that the relaxed atmosphere of the mapping workshops encouraged participants to share relevant information, stories, and anecdotes of great value.

Similarly positive results come from Ramirez-Gomez *et al*'s (2013) work with the Indigenous peoples of Southern Suriname, who were involved in a 2011 participatory GIS mapping project aimed at enhancing conservation practices. In line with Robinson *et al*'s usable knowledge, Ramirez-Gomez *et al* (2013) start by explaining that Indigenous people in Suriname depend on the survival and functioning of local ecosystems, and that their knowledge-practice-belief system must be recognised and used to manage resources sustainably. They argue that conservation efforts cannot solely rely on state policies, and that mapping Indigenous lands in ways that are participatory has been effective in bridging Indigenous and Western conceptions of conservation (Ramirez-Gomez *et al,* 2013).

The literature further shows that to ensure the success of a participatory mapping project involving Indigenous groups, it is crucial that the resulting maps are expanded and enriched as new information is acquired. This is one of the recurring themes that emerged in the literature, as many (Bryan, 2011; Sletto, 2012; de Robert *et al*, 2006) agree that maps should be considered a process rather than a product, and that participatory mapping projects may fail when designed as "one shot mapping" (Fraser Taylor, 2021). Robinson *et al* (2016) sum this up by arguing that because

knowledge is complex and not static, Indigenous maps are part of a dynamic and continuous process that remains open for further review. Aside from being flexible so as to welcome continued review, Eisner *et al* stress (2012) that for mapping projects to truly be beneficial, community members must not only be aware of their existence, but their deliverables – such as the online database in their study, or any final maps – must be made easily accessible to everyone in the community. To enhance the success of their project, Eisner *et al* have disseminated the online GIS resulting from their work through social media (e.g., Facebook.com), and in the form of a paper brochure distributed in community centres, government buildings, and local schools.

Lastly, Fraser Taylor argues that, as "living archives", Elders must be involved for a successful outcome of participatory mapping projects (Fraser Taylor, 2021: 101). Fraser Taylor goes on to explain (2021) that the Elders of many First Nation communities are concerned that with their passing, their knowledge will be lost. In a 1996 study with the Plains Cree of Saskatchewan, Bakker (1996: 32) shared that the Elders in one of the communities he worked with stated: "if our stories disappear, our people also disappear". Similarly, Eisner *et al*'s experience working with the Iñupiat Indigenous communities of Alaska revealed that the Elders involved in the mapping workshops were anxious about the loss of key words in their Iñupiaq language – as the language was "dying out" altogether – and that they were pleased that the mapping project had served to preserve some terms in their traditional language. "When asked how to improve the [web]site", Eisner *et al* went on to explain (2012:30): "many answered that they would like to see parts of the website and GIS rendered in the Iñupiaq language". Ingram (2021) confirms that using Indigenous names in maps may help preserve Indigenous languages along with the IEK inherent within them.

2.2.2. Obstacles to participatory mapping

Robinson *et al*'s mapping project revealed that members of the community have different, and sometimes conflicting, understandings of local territories. Whilst the outcome of their mapping workshop was positive, the same cannot be said for other similar projects. For example, the participants in the Girringun Indigenous Protected Area were pleased with the workshops and spoke enthusiastically of how they felt empowered working alongside community members who held different views about local lands, ultimately finding common ground (Robinson et al, 2016). However, this was not the case for Anthias' work (2019) with the Guaraní Indigenous people of Bolivia, where a participatory mapping project was hindered by the unexpected power dynamics that

arose during the workshops. Anthias' research with the Guaraní sheds light on how gender and wealth hierarchies create different understandings of land use and practices, and on how some voices can be silenced during the mapping process. This uncertainty stresses that research efforts need to be directed towards a better understanding of how to manage conflict. Robinson et al (2016: 117) argue that "little work has engaged with how to deal with competing and conflicting knowledge claims among diverse nodes of Indigenous knowledge systems and how […] Indigenous knowledge contributions and partnerships are negotiated". Whilst they propose a potential solution - to involve a *knowledge broker*, often an Elder, to mediate the discussions – it becomes apparent that this is an area of participatory mapping that needs further studying.

Another study relevant to this research is Eisner *et al*'s (2012) work with the Iñupiat Indigenous communities of Alaska, briefly mentioned above. Here, an online database of the Iñupiat environmental knowledge was created through a participatory GIS mapping project in Alaska. Stating that Indigenous and environmental concerns often coincide, Eisner *et al* agree with the rest of the literature that IEK – especially that of Indigenous peoples of the Arctic – provides crucial insights into climate changes and the ways to preserve threatened landscapes and species. They speak of a "commonality of purpose" (Eisner *et al*, 2012: 18), where both the Iñupiat community and Arctic scientists are concerned over the rapidly declining environment, emphasising that IEK should come to the forefront as Iñupiat are experts on the ground. However, whilst believing in the efficacy of the practice, the authors define participatory Indigenous mapping as "daunting at best" (Eisner *et al*, 2012: 17), revealing a series of hardships they encountered. From the difficulty to acquire funding, to access to high-speed Internet in remote areas – necessary for the use of certain technologies – they speak of the practical obstacles of participatory Indigenous mapping, as found in other literature (Ramirez-Gomez *et al*'s, 2013; Rye and Kurniawan, 2017; Chapin *et al*, 2005).

In their work, Eisner *et al* (2012) raise two important points. First, they are concerned with the extent to which mapping projects can in fact be participatory, and they suggest that the participation of Indigenous people is only limited as the researchers, who are almost always outsiders, lead and manage the projects, for example determining the categories that make up the layers in GIS. Similarly, Chapin *et al* (2005) warn their readers that the term "participatory" has been over- and misused in research, and it has now become meaningless. They believe that while most participatory mapping projects involve the community by holding community meetings, sharing reports, and

gathering feedback, they almost never rely on Indigenous expertise for the planning and executing of the mapping activities – especially when these heavily rely on Western scientific approaches and technologies like GIS (Chapin *et al*, 2005). Fraser Taylor (2021) illustrates that the root problem of participatory mapping is that there exists a power imbalance between the participants and the researcher(s). This power imbalance can be overcome, Fraser Taylor explains (2021), by investing time in quality interactions and to build trust between all parties involved, and potentially through capacity building trainings, which give participants the means to actively contribute to the mapping project. Above all, Fraser Taylor believes (2021) that for mapping projects to truly be participatory, they must be driven by community needs.

Eisner *et al*'s second point regards the effects that Western practices can have on Indigenous worldviews. More specifically, Eisner et al (2012) argue that because IEK is often adapted to fit into Western standards for legitimate mapmaking, it risks being distorted and delegitimised. Similar concerns are raised in Ramirez-Gomez *et al*'s (2013) work from Southern Suriname. The authors argue (2013) that however inclusive and cognisant of Indigenous worldviews, participatory Indigenous mapping must adhere to Western scientific standards to gain credibility and to influence conservation planning. This is an additional recurring theme in the literature: besides Eisner *et al* (2012) and Ramirez-Gomez *et al* (2013), Bryan (2011) explains that even when Indigenous songs and drawings are used in mapping workshops, these must then be translated into conventional Western cartographic forms; Anthias (2019: 233) recounts that "community members' approach to mapping was heavily influenced by their prior experiences of maps and their ideas of what was appropriate to this non-Indigenous convention", which limited their contributions; Sletto (2012) and de Robert *et al* (2006) agree that Western cartography is not equipped to represent the complex Indigenous notions of space, which – as seen previously – are fluid, non-linear, and informed by spiritual relationships; and Rundstrom (1995) goes as far as to say that Western tools like GIS are incompatible with Indigenous knowledge systems, and they can be considered a modern form of assimilation. In 2021, almost 30 years after Rundstrom's comment, Fraser Taylor argues that commercial mapping systems are rarely able to process different forms of knowledge, and asserts that "in mapping with Indigenous communities, the most technologically elegant choice is not always the bests choice" (Fraser Taylor, 2021: 105). Ramirez-Gomez *et al* (2013: 3) summarise this concern by stating that "if the participatory mapping approach embraces the Western scientific methods that emphasize accuracy and validity, it will alienate Indigenous peoples".

While Ramirez-Gomez *et al* (2013) are optimistic that the maps produced in their project will promote sustainable land use, they admit that there is a lack of research on how to effectively apply the information generated by Indigenous maps. The literature shows that Indigenous mapping has often failed to result in greater inclusion of Indigenous people and IEK in decision-making. Robinson *et al* (2016) maintain that as long as the scientific community does not gain a better understanding of how to transfer IEK from maps to policy action, Indigenous land will continue to be exploited. Rye and Kurniawan (2017) bring forward an example from Indonesia, where a mapping project with the Dayak led to the recognition of the Dayak land as Indigenous, but land grabbing and dispossession continued in the name of national development. Similarly, Sletto (2012) refers to the Indigenous peoples of the Cuenca del Río Corrientes in Peru, whose land has been recognised as Indigenous, but mapping efforts continue to document environmental degradation affecting them – with little to no success. Eisner *et al* (2012) and Anthias (2019) take this one step further by showing that in some cases, the misuse of information generated from participatory Indigenous mapping has had negative consequences on Indigenous communities by making their territories legible to outsiders, and thus more easily exploited by governments and investors.

An additional limitation to participatory mapping stems from its predominant purpose to aid land claims, which renders its other possible uses less known and understood. Ramirez-Gomez *et al* (2013: 2) define participatory mapping with Indigenous people aimed at conservation purposes as an "underdeveloped research area". An example of the limiting effects of participatory Indigenous mapping's association with land claims comes from de Robert *et al*'s work with the Kayapó in the Brazilian Amazon. They recount (2006) that whilst their participatory mapping workshops were designed to map the botanic knowledge of the community, the Kayapó re-appropriated the project and shifted its aim to better fit their interests: during various meetings, Kayapó leaders demanded that the project result in a political map to support the community's legal land claims. Bryan (2011: 49) illustrates this issue by stating that while "the prospects for legal recognition will likely continue to discipline practices of participatory mapping" – as that is what is valuable for many Indigenous groups, this should not dominate research efforts, and that researchers should explore different ways in which participatory mapping can be beneficial for Indigenous people.

2.3. Conceptual Theory

Researchers working on Indigenous land use and human-nature relationships have developed and used frameworks to help piece together and understand traditional usage. This research logic is guided by the *taxonomy of plural values*, which stood out as the best fit for my research.

The taxonomy of plural values of nature expands on the ecosystems services (ES) framework, which helps researchers categorise the advantages that people gain from ecosystems – for example food, water and recreation (Arias-Arévalo *et al*, 2018). Arias-Arévalo *et al* criticise (2018) the ES framework for its emphasis on and bias towards nature's monetary value, which ultimately masks other, equally important, values (e.g., cultural). They instead offer an alternative that integrates some of these values, and which could more easily be applied to contexts that embrace value pluralism and perceive human-nature relationships as being guided by more than just a monetary interest.

In particular, Arias-Arévalo *et al* argue (2018) that, by zooming in on the instrumental value of nature, the ES framework risks promoting unequal access to nature, poisoning the motivations behind conservation, marketing something that should not be for sale, and it assumes that different services which provide the same benefits are interchangeable. This would not only pave the way for the acceptance of ecological losses (Arias-Arévalo *et al*, 2018), but it is also in stark contrast with Indigenous understandings and relationships with the land. Indigenous worldviews – as we have seen – understand nature as a complex system where every element has a unique function and is of equal importance, and they distance themselves from the colonial mindset that sees nature as a commodity to be exploited. For this very reason, the taxonomy of plural values would seem to offer the adequate "open conceptual framework that is able to accommodate a diverse set of ontological and epistemological perspectives" (Arias-Arévalo *et al*, 2018: 46), like that of First Nations. Moreover, Arias-Arévalo *et al* state (2018) that the taxonomy of plural values can help weave Western and non-Western visions of human-nature relationships.

At the basis of the plural values theory lies the fact that, along with the instrumental or monetary value, five additional values must be taken into account (Arias-Arévalo *et al*, 2018). These are:

- **Intrinsic** values, which recognise biodiversity and ecosystems as having a value of their own, separate from human interest.
- **Principles**, which inform and guide the ways in which humans relate to the environment on an ethical and/or political basis.

- **Shared** values, which are held by people as citizens and members of society (e.g., the aesthetic value of a park).
- **Ecological** values, which are determined by the contribution that elements in nature add to the environment (e.g., an ecosystem's ecological resilience).
- And **ways of concern**, which stem from the different ways in which humans engage with and take care of nature and ecosystems.

As shown in Figure 2.1., the taxonomy of plural values framework does not negate the importance of the instrumental value of nature, but it simply stresses that the monetary value can only exist as part of a greater socio-ecological system comprising of other values too. In the plural values theory, the different values are not mutually exclusive, but they instead co-exist and are often intertwined (Arias-Arévalo *et al*, 2018).

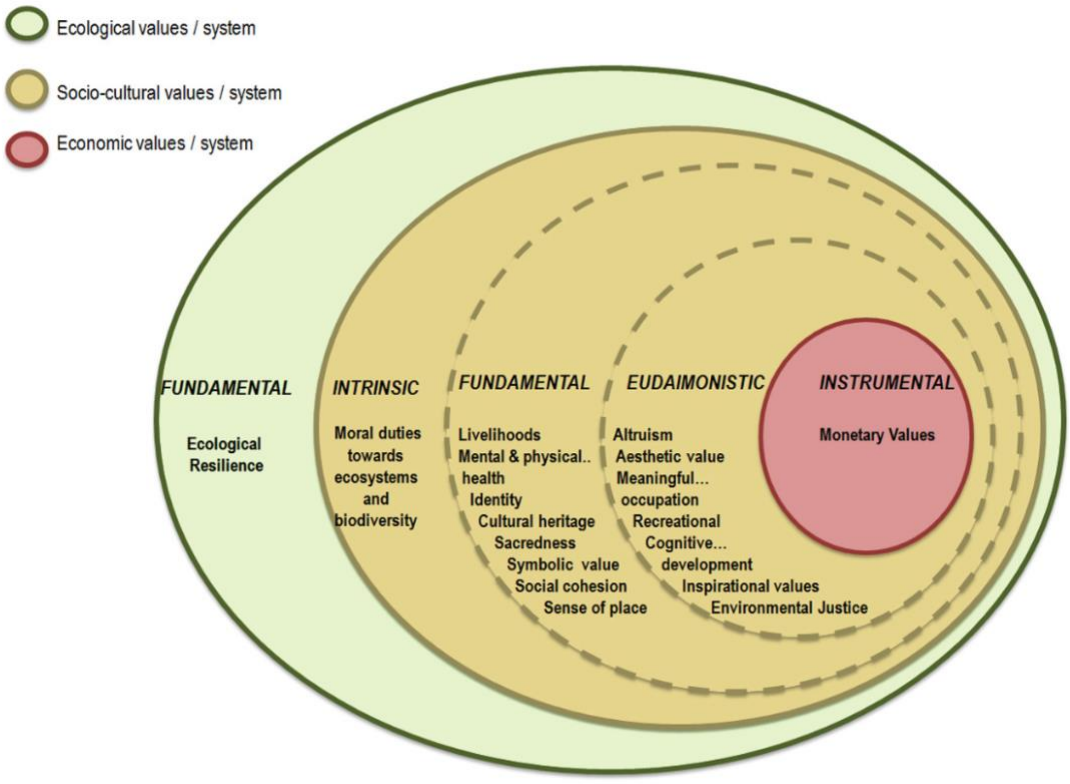


Figure 2. 1 Embedment of monetary values of nature within a wider socio-ecological structure

Source: Arias-Arévalo et al, 2018

Based on these values, Arias-Arévalo *et al* (2018) present three metaphors on human–nature relationships: 'gaining from nature', 'living for nature', and 'living in nature', which they base on O'Neill *et al*'s idea that individuals relate to the environments in three ways: they (1) live benefitting from the environment, they (2) make their homes in the environments, and they (3) co-exist with other elements in the environments (O'Neill *et al,* 2008).

The first metaphor, *gaining from nature,* captures the instrumental value, as it encompasses the idea that human lives and economies depend on nature and ecosystems. The second metaphor, *living for nature*, reflects the intrinsic value of nature, and it relates to the idea that humans share the environment with other species that have a right to exist. Lastly, the third metaphor, *living in nature*, embodies the idea that nature offers a playground for human relations and connections to happen, whether these be in the biophysical, social or cultural worlds. Because relational values stemming from human–nature relationships can be numerous, this third metaphor reflects more than just one value: from ecological resilience, health and spirituality, to recreation, inspiration and aesthetics (Arias-Arévalo *et al*, 2018).

2.3.1. Additional theories

To complement the value pluralism approach, this research is informed by two additional theories. On the one hand, I am committed to remaining aware of the "ecological Indian" trope throughout my research, so as to ensure a fair representation of the community I work with. On the other, the Two-Eyed Seeing framework is at the basis of my work.

The Ecological Indian

When discussing their participatory mapping work with the Kayapó in Brazil – illustrated above, de Robert *et al* (2006) point the finger at advocates of IEK who fall into the conceptual trap of the *noble savage*, undermining the credibility and fairness of practices like participatory Indigenous mapping. The concept of the noble savage or *ecological Indian* is defined by Krech (2005) as a thoughtless exaggeration of the idea that Indigenous people have an acute awareness of the natural world. Whilst it is important to understand and preserve IEK, researchers must maintain a well-rounded understanding of Indigenous people as a diverse and heterogeneous group whose environmental knowledge varies according to a multitude of factors – e.g., gender, age, occupation, level of exposure to Western cultures and geographical location (Krech, 2005). Krech (2005) points out that

Indigenous people have historically altered their local environments, and that IEK might not always be sustainable.

The Two-Eyed Seeing

Whilst it still needs to mature into a fully-fledged framework, the Two-Eyed Seeing theory is useful to guide work and research with Indigenous peoples. In theory, Two-Eyed Seeing simply requires a thoughtful blending of Western and Indigenous perspectives to solve environmental issues, as opposed to simply piecing different knowledge streams together (Wright et al, 2019). In practice, Wright et al (2019) suggest different steps guided by the Two-Eyed Seeing that can inform research with Indigenous groups. Some of these steps are: using visuals alongside standard Western data presentation, welcoming prayers, learning circles, and ceremonies as part of the data collection process, attaining rigorous ethics approval, peer reviewing to ensure rigour, adopting participatory methods, ensuring the collaborative development of research questions.

3. Methodology

Along with the Two-Eyed Seeing approach, the methodology for this thesis follows the Six R's framework for Indigenous research. This conceptual framework, suggest Tsosie *et al* (2022), is a decolonising research method that provides tools to engage with Indigenous groups meaningfully, and in a way that will benefit all parties involved in the research. Tsosie *et al* (2022) further point out that, unlike Western research methods, the Six R's framework offers enough flexibility to adopt Indigenous ways of knowing into the research. As illustrated by Grant *et al* (2021), the Six R's framework is built on Kirkness and Barnhardt's groundwork from 1991, and it expands on their original Four R's (Respect, Relevance, Reciprocity, and Responsibility). The Six R's are:

1. **Respect** - for the partner community, individuals, along with their lands and cultural values.
2. **Relationship** – with the community, where the researcher must work to build and maintain meaningful relationships based on mutual honesty and trust. The remaining five R's are expressed through these relationships, which are built over time.
3. **Representation** – of the community involved, where community members identify and determine what is relevant and important to share about their knowledge and experiences.
4. **Relevance** – of the research outcomes for community needs, and where research activities are conducted in a way that makes sense and is appropriate to local worldviews and context.
5. **Responsibility** – towards the community, where the researcher is committed to respecting ethical protocols (e.g., obtain informed consent) to ensure no harm for the participants.
6. **Reciprocity** – between all participants in the research, where all parties mutually benefit.

The Six R's, as expressed by Tsosie *et al* (2022), complement and inform one another, and thus must be applied holistically at each stage of the research project. For my own research, this meant – amongst other things – learning about the history and cultures of First Nations prior to my arrival in Canada, working as part of a research group founded on long-lasting relationships with the JSCN, and adopting participatory research methods.

3.1. The Study Site

The James Smith Cree Nation reserve is located in central Saskatchewan, about 200 kilometres Northeast of Saskatoon, and 58 kilometres East of Prince Albert, the first and third largest cities in

the province. The reserve has a current population of 3.412, of which around 1.892 live on-reserve (James Smith Band website, 2023). Individuals from two additional bands were amalgamated with the original members of James Smith, and currently live on the premises of the James Smith Cree Nation reserve. Today, the JSCN reserve comprises of families from the James Smith, Chakastaypasin, and Peter Chapman bands (Thompson, 2023). The three bands split their leadership, meaning that the James Smith Nation now has three separate band governments operating on-reserve (Pittman, 2010). On reserve, infrastructure includes a band office, a fire hall, an arena, the Bernard Constant Community School, and the Margaret Turner Health Centre. Interviews for this research were conducted in the band office, shown in Figure 3.1.

Figure 3. 1 Entrance to the JSCN band office and health clinic

[Photograph taken on March 23, 2023 on the JSCN reserve, SK, by Carmen Margiotta]

The James Smith reserve covers over 162 km2, and it is situated in an ecological transition zone between boreal forests in the north and grasslands in the south (Pittman, 2010). As observed by Stonechild (2006), there are significant differences between the Plains Cree communities in the

south, and the Woodland Cree Nations going North in Saskatchewan, where the former historically depended on the buffalo for their daily needs, and the latter relied on the hunting of big game, as well as fishing and gathering. Whilst Pittman describes (2010) James Smith as a traditionally Plains Cree band, McLeod (2000) argues that the genealogies on the northern plains are more ambiguous. In particular, McLeod (2000) explains that essentialising Cree identities (e.g., to simply "Plains Cree") is extremely misleading and limiting, and that whilst historians may have simplified the identities of groups like JSCN, the Cree communities in today's Saskatchewan were often hybridised, have multi-layered histories, and cannot be described as just one thing.

Violence and substance abuse is a pressing issue on reserve. As explored by Pittman (2010: 97), there is a shared fear on the JSCN reserve that, when under the influence of drugs and alcohol, some community members "become caught in a destructive cycle". In the early morning hours of Sunday, September 4th, 2022, a JSCN community member killed 11 people and injured 17 others – including young members and Elders – in the biggest mass stabbing in Canadian history, and ever recorded in an Indigenous community (Latimer, 2023). I remained aware of this incident throughout the entirety of my research, and I tried to understand the consequences that it must have had on the community. Under the guidance of the community liaison and my supervisor, I learned to address the episode as "the tragedy" – using the same language that the community chose to use – and to only express my sympathy and offer my condolences when the participants mentioned the tragedy themselves.

3.2. Research Approach

Guided by a constructivist philosophical worldview, which is based on the idea that each individual ascribes subjective meanings to the world around them in accordance with their own personal experiences, this research uses a qualitative approach (Creswell and Creswell, 2017). Qualitative research allows researchers and partners to capture participants' views in their full complexities.

Community-Based Participatory Research

As previously mentioned, this participatory research is community-driven, as it answers to a need raised by JS community members. Community-Based Participatory Research (CBPR) is a research method that stands in contrast with the helicopter approach – where researchers go in and out of Indigenous communities to extract data without leaving much behind, and it brings researchers and community members together as co-researchers and partners who share complementary skills

(Bharadwaj, 2014). Bharadwaj highlights that CBPR was created as an alternative to traditional research approaches, which continue to fail and leave Indigenous communities unsatisfied. Instead, CBPR has proven to "empower communities and enlighten the researchers" (Bharadwaj, 2014: 23).

Following the principles of CBPR, as well as the Six Rs of Indigenous research, this methodology was developed with community members, and it consists of 17 interviews with members of the JSCN deemed knowledgeable on the research topics, and selected by the community partners. By engaging with individuals chosen by a community representative, I hoped to show *respect*, as well as to avoid imposing colonial standards in the informant selection process. As illustrated by Bharadwaj (2014), in the helicopter research approach – which I wished to avoid – researchers recruit participants without the community's input, and often relying on their own foreign expertise. In this project, the community liaison coordinated and set up one focus group and two individual interviews prior to my visits to the reserve. The remaining six participants in the study were selected using a snowballing technique, where each participant was asked to point me in the direction of other potentially relevant members of the community.

During both the individual meetings and the Elders circle – defined by Pittman (2010: 90) as a focus group with Elders that incorporates ceremonial aspects like prayers – I conducted semi-structured interviews using open-ended questions. As suggested by a community member, ensuring that the questions asked are kept open will encourage the participants to share stories that they may otherwise not think of (JSCN community member, personal conversation, 24 February 2023). The interview questions were adapted as the research progressed and as I learned what land-use practices and territories were considered of great significance to JSCN community members. Two brief follow-up interviews were held over the phone with one of the Elders in the focus group and with one individual participant a few days after the original meetings.

3.2.1. Mapping Project

In Cree culture, there are many ways of passing on knowledge, including oral storytelling traditions, songs, dances, ceremonies, and the use of meaningful language. Researchers also have to have many tools to co-create data with community members. In this case, the necessary tool needed to deepen participants' reflections on their lived experiences in order to be able to tie those experiences to geographical places. It is for this reason that participatory mapping was used – the method was

deemed to align with community leadership's understanding of what methods would work with their Elders and other community members to gather the information needed.

During all interviews, participants were presented with a large, laminated map of the province of Saskatchewan, and they were provided with markers of different colours to use on the map. The purpose of the 150x96 cm map, which is shown in Figure 3.2. below, was to encourage active discussion during the interviews, and to help participants pinpoint territories of importance, as well as to illustrate their connection to those territories and the practices relevant in those areas.

Figure 3. 2 Map used during interviews

[Photograph taken on March 10, 2023 on the JSCN reserve, SK, by Carmen Margiotta]

Not only did I consider using a map an essential element of a mapping project, but I also hoped that a map would function as a 'boundary object' during my visits to the JSCN. As suggested by Lagesen (2010), boundary objects can be used as a tool to facilitate conversations and enhance the potential

for exchange during qualitative cross-cultural interviews, where researchers may incur challenges transcending cultural differences.

The interviews with P1 and P8 represent an exception. Held on the online platform Zoom.com, the method used for these interviews had to be adapted. Whilst for the interview with P1 I did not rely on any visuals, and it was run as a standard conversation with questions and answers, in preparation for the call with P8 I downloaded and inserted a map of Saskatchewan on a blank page in Google's Jamboard, which would have allowed P8 to digitally draw on it (see Figure 3.3.). During the interview, P8 preferred not to draw on the map, but wished to consult it for reference.

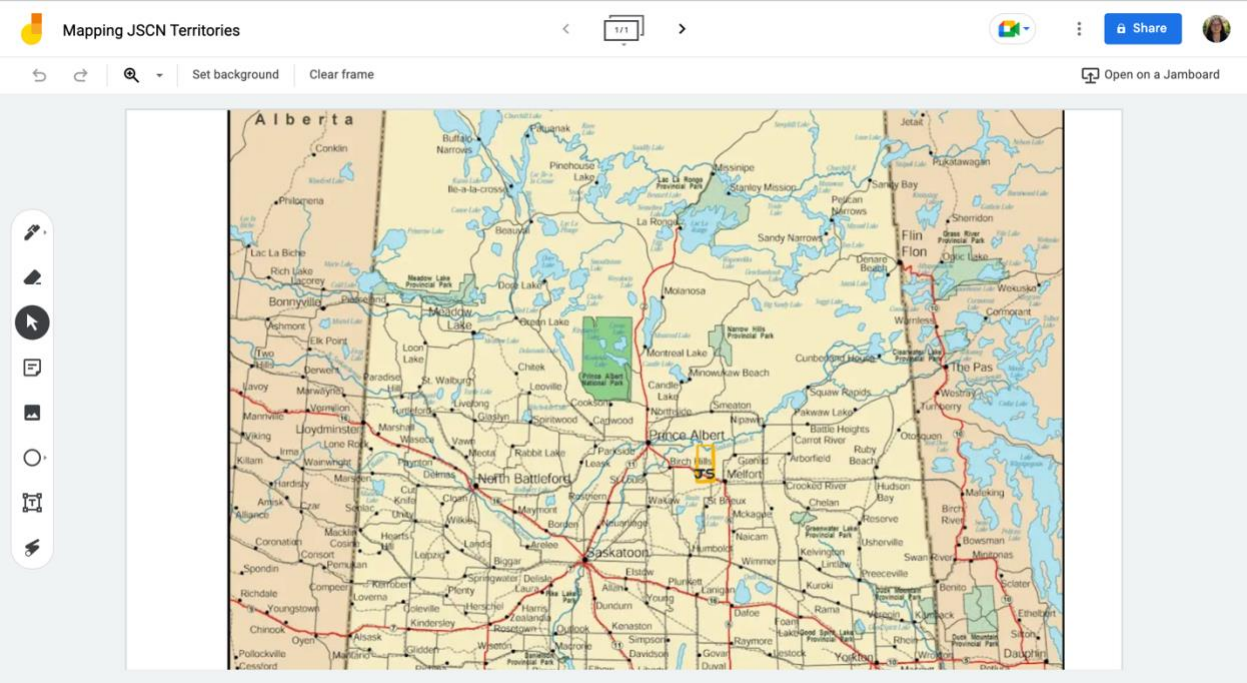


Figure 3. 3 Google's Jamboard used during interview with P8

Once all data was gathered, I built a map on Esri's ArcMap (version 10.8.2) comprising all the informants' views gathered during the interviews. Due to time constraints, I was not able to involve any of the participants in the map-making process, however, I was inspired by one of the participants' suggestions to create a hodgepodge map. Hodgepodge maps are known as community maps which convey patterns in a community's land use by documenting the sites that single members identify as important to them during one-on-one interviews (Ecotrust Canada, 2015). To ensure a better representation of JSCN land use, and because Esri's ArcMap did not provide all the

symbols needed for this project, the icons used for the map (see Figure 4.1. in Chapter 4) were selected and downloaded from open-source websites.

3.2.2. Expert Elicitation

To gain a deeper understanding of participatory mapping with Indigenous communities, and to further contextualise the information shared by the study participants during the interviews, I believed that it was important to conduct interviews with experts in both historical research and participatory mapping methodology. For this purpose, I involved two practitioners: Dr. Merle Massie, a historian at the University of Saskatchewan, and Steve DeRoy, a First Nation cartographer from Manitoba – both interviewed online via Zoom.com.

I initially contacted Dr. Massie with a question related to potential archival work, and later agreed to involve her in this research as an expert on human-land relationships that span across time and space in the province of Saskatchewan. The rationale behind the choice to interview Steve DeRoy, on the other hand, lies in my intention to give space to the voices of Indigenous practitioners. Because much of the literature available on Indigenous mapping, including the one presented in the literature review above, has been produced by non-Indigenous academics (Chapin, 2005), I deemed it crucial to also represent Indigenous expert views on the subject.

Both Merle and Steve agreed to being recorded. The interview transcripts, along with a draft of the thesis' expert elicitation chapter, were shared with them individually to ensure fair representation.

3.2.3. Data Analysis

All interviews were digitally recorded and transcribed verbatim. Transcripts were shared with the participants involved in the study, who were given the chance to comment, edit, and/or add to them if they wished to do so. Transcriptions were manually coded for themes relating to territories of importance, land use and change, relevance for the community, and response to mapping exercise.

3.3. Ethics of Research

As illustrated by Fraser Taylor (2021), the knowledge of Indigenous peoples has often been appropriated and used by outside researchers for purposes that went against the interest of

Indigenous communities. In the past, researchers have entered Indigenous communities uninvited, without permission, not following Indigenous protocols, and bringing their own cultural bias into their research projects. This, according to Michell *et al* (2021), has created a tradition of mistrust and fear towards external research. However, these ethical concerns are increasingly being discussed and are ever more understood. Thanks to information and strict ethical guidelines, the risk of negative effects of research on Indigenous peoples – and particularly the risks connected to participatory mapping – have diminished (Fraser Taylor, 2021).

Ethics clearance to undertake this research included three steps: first, to enhance my own preparation for research with Indigenous communities in Canada, I was required to complete the Canadian federal government's *Tri-Council Policy Statement on Research Ethics Certification Version 2 (TCPS2)* through an online course which included a module on research with Indigenous partners (see certificate in Appendix-A), and the University of Alberta's *Indigenous Canada* online course offered through Coursera (see certificate in Appendix-B). Second, since this research is a part of an ongoing larger collection of projects investigating community land and water security issues and changes over time, an existing ethics certificate managed by my supervisors at the University of Saskatchewan – Dr. Bradford and Dr. Bharadwaj – was amended to include my specific research activities (USASK BEH-3252, amendment received February 3, 2023). Third, the Chief and Councilors at the James Smith Cree Nation provided their blessings for my work to begin after an initial online meeting held on November 29, 2022, and my first trip to JSCN on February 21, 2023.

Ethical protocol at the University of Saskatchewan ensures no harm, voluntary consent, anonymity and confidentiality. As per my supervisor's guidance, written consent forms were deemed unsuitable for the research context, thus not utilised, but an oral consent process was followed. Indeed, as shown by Wynn and Israel (2018: 798), in research with Indigenous peoples, "written consent forms evoke colonial legacies of distrust, where insistence on the need to 'sign' is interpreted as coercive, or at least as 'signing away' something". Additionally, as is the practice of Dr. Bradford and Dr. Bharadwaj's work with the JSCN, participants were compensated with an honorarium for their contribution to the research project.

3.4. Limitations

Several factors limited this work. This thesis was developed over the course of four months, from February to May 2023. During this time, I lived in Saskatoon, about 200 km south of the JSCN reserve. Not comfortable driving in the harsh weather conditions of the Saskatchewanian winter, I was only able to make three visits to the community for data collection, one with my supervisor, and two with other research groups at the University of Saskatchewan, who kindly offered me a ride. Time and geographical constraints thus represented the first major limitations to this work. As encouraged by the principles of CBPR (Bharadwaj, 2014), these and other challenges were communicated with the community partners, as well as with the participants, well in advance.

Snapshot in time

Reliant on participants' testimonies, the information gathered for this research only covers JSCN's current and 20th Century land use. Except for one of the participants' testimonies, which mentions pre-contact land-use, the information gathered is limited to only one time period.

Small sample size

The participants I worked with for this project were only a small cohort of the James Smith band. Therefore, one of the limitations of this study is that the information collected is not representative of every family and every member of the James Smith Cree Nation. I understand that if I were to publish my research work in a Western journal, I would be questioned about the demographics of the participants involved in this study. For example, only five out of the seventeen participants involved in this study were women, and all participants were above the age of 40. This has limited the potential to fully represent the diverse understandings of land use present in the JSCN. However, by following the recommendations of the community for participants selection, I was decolonising my research and following the Six R's of research with Indigenous peoples.

Limits to methodology

Because of the difficulty reaching the community, and since data was collected in the winter season, ethnographic work, as well as participant observation and community mapping through transect walks could not be carried out.

4. Results Part 1: Community Members Perspectives

The following chapter presents the findings from eight interviews and one focus group conducted in March 2023 with members of JSCN. Nine Elders were identified as knowledgeable land-users and valuable knowledge holders and invited to a focus group by the research community liaison, who also set up two additional interviews. The remaining six participants were selected using a snowball technique where at the end of each interview, informants were asked to identify other community members potentially relevant for the study. Most participants were interviewed in person and individually, with the exception of the Elders in the focus group, and P5 and P6, a married couple who wished to be interviewed together. P1 and P8 were only available for online interviews, which took place via the online platform Zoom.com.

The length of each interview varied, ranging from a minimum of 25 to a maximum of 1 hour and 15 minutes. All interviews were transcribed for community records and shared with each individual participant for verification. Table 1 provides basic information on the study participants. The interview guide can be found in Appendix-C.

Name	Gender	Identified as Elder?	Role in the community
Participant 1	Male	No	Land and Environment
Participant 2	Male	No	Land and Environment
Participant 3	Female	No	Land User
Participant 4	Male	No	Land User
Participant 5	Female	No	Land User
Participant 6	Male	Yes	Land and Environment
Participant 7	Male	Yes	Land User
Participant 8	Male	No	Land and Environment
Focus Group 1	Male	Yes	Land User
Focus Group 2	Female	Yes	Former Chief
Focus Group 3	Female	Yes	Land User
Focus Group 4	Male	Yes	Land User
Focus Group 5	Male	Yes	Land User
Focus Group 6	Male	Yes	Land User

Focus Group 7	Male	Yes	Former Chief
Focus Group 8	Female	Yes	Land User
Focus Group 9	Male	Yes	Former Chief

Table 4. 1 Characteristics of Participants

Three main themes emerged from the interviews: (1) geographical areas of importance stemming from the participants' understandings of James Smith traditional territories and land-use practices, (2) motivations behind the need to document traditional territories and practices, and lastly (3) a commentary on the participatory mapping experience as methodology. Each theme will be explored in more detail with exemplary quotes.

4.1. Theme 1: James Smith Traditional Territories and Land-Use Practices

The community-driven aim of this research was to identify the locations within and around the province of Saskatchewan that are important to members of the JSCN, as they offer a space for the community's past and present land-use practices. All participants were thus asked questions that would encourage this identification, using a map of the province as a visual aid. Examples of questions asked are: "what is your traditional territory?", "do you do anything out in the land? If so, where?" and "in the past, where did your parents and grandparents use to go?".

From these conversations, I was able to: (1) catalogue the primary land-use practices described by the participants; (2) document the territories of importance to the community; and (3) learn about the changes observed by the community members in these territories. Three additional minor sub-themes emerged: (1) the locations of burial sites, (2) competition with other First Nations, and (3) the role of the Cree language. These are explored at the end of this section.

It should be noted here that there was no premeditated limit to the time period analysed, and that the research was to be adapted to the timeframe provided by the participants' personal narratives. During the interviews, all participants recounted events from within their lifetime, starting from their current everyday lives and dating back to their childhoods. The timeframe for the community members' answers thus goes from the 1960s to the year this study was conducted. The response

from P1 represents an exception, as during his interview he briefly mentioned geographical areas where his ancestors used to travel prior to European contact.

4.1.1. Primary Land-Use Practices

Here, the community's main land-use practices, as described by the participants, are catalogued. The next section will provide further details on the territories where these practices took place in the past and are carried out today.

All participants spoke of five practices: (1) hunting, (2) trapping, (3) fishing, (4) picking berries, and (5) gathering medicinal plants. When asked what people do out in the land, P1 simple stated: "Basically, food and medicine" (March 6, 2023). Hunting, trapping and fishing tended to dominate the conversations, with berry picking and medicine gathering coming respectively second and third. Five participants mentioned (6) logging and "getting wood", and four community members talked about (7) birding.

Hunting and Trapping

When discussing hunting, all participants recognised elk, deer, and to a lesser extent moose as their primary big game. FG5 mentioned having hunted bear in his lifetime.

For trapping, beavers play a central role: P7 described them as "plentiful". However, other fur-bearing animals would commonly be trapped alongside beavers. FG8 stated:

> My dad went to the different seasons to hunt and gather. Cause it wasn't just hunting. It was trapping. Trapping beaver. And then he'd hunt those squirrels. Cause they can still take the fur off the squirrel, all kinds of little animals. Like weasels, muskrats. (March 10, 2023)

As recounted by P8, lynx, wolves, coyote, foxes, and muskrats would often be found in trap lines. When discussing other small catch, P6 explained that hunters would often seek woodchucks, badgers, squirrels and chipmunk, and P7 mentioned rabbits, and explained that community members would hunt them extensively in the 1970s. He recalled: "We used to do a lot of rabbit hunting. Back in the early 70s, they did some poisoning for coyotes. And then after that, there was a

lot of rabbits. You could get maybe fifty to a hundred a day. Easy. But you couldn't eat them all. So we gave them away" (March 23, 2023).

Lastly, a valuable anecdote comes from P3, who recalled how hunting used to be a collective experience for all people involved. During the interview, she went into detail to tell some of the stories that her father would share after every hunting trip. She remembered that her father would always say that "it all depended on the wind", and that his partners would "push the bush where the elk or moose were, […] push the animal away from the wind". She then went on to explain: "Cause the animals have a really good scent, right? So if they smelled that hunter out there they would get lost, run away" She proudly stated: "that was my dad's skill" (March 23, 2023): this way, her father and his partners were able to successfully hunt the elk or moose and bring home meat for their families.

Fishing

Just like hunting and trapping, fishing played a key role in the community's land-use practices. In the words of FG1: "we used to live off the river. We used to go down the river and just put in a net and catch our own fish. […] I used to go with my dad, back then we used to just live off fish" (March 10, 2023). Similarly, P3 remembered how growing up she would do a lot of fishing with her family, she explained:

> My dad used to take us fishing in the evenings just to keep us out of trouble. We walked to the river and he would show us how to fish. […] That was our full day. It was a full afternoon to go fishing. But we always brought back a bunch of fish, like 15 to 20 fish. (March 23, 2023)

When asked what they would fish, nowadays or in the past, community members listed the goldeye, the northern pike (referred to as "jackfish" by all participants except for P4), and the walleye, also referred to as pickerel by several informants. One Elder mentioned having fished brook trout in his youth. The goldeye was considered the primary and traditional catch by all informants. Remembering what his grandfather used to tell after a fishing trip, FG9 shared: "Our fish at the time was the goldeye. We just loved goldeye. So many bones in those fish. But that was our fish" (March 10, 2023). Similarly, P3 remembered how her mother used to can the goldeye after catching it, so that it could be used to feed the family for prolonged periods of time; and P6 recalled: "goldeye was

kind of our staple back then [1960s]. People were even cooking the fish on the shore using the river water" (March 23, 2023). However, as further explored below, the goldeye used to play a central role in the community's land-use practices in the second half of the 20th Century, but appears to have recently declined due to changes in the landscape. In the words of P2: "I know in the past, we used to fish for the goldeye in the river, before the warehouses came" (March 23, 2023). Aside from goldeye, the role of the jackfish was debated: a discussion arose during the focus group to establish whether the jackfish was caught in the past, at the end of which the Elders agreed that it was fished to a lesser degree compared to goldeye – FG1 stated: "There was rarely jacks" (March 10, 2023). During her interview, P3 recalled: "once in a while my dad would get lucky and he'd get a jackfish. That was gold, eh, jackfish. Cause it's a big fish and it can feed the whole family, that big fish. So that was gold to my daddy. He was really happy when we used to get a jackfish" (March 23, 2023).

Lastly, P3 shared that in the last 15-20 years, members of the JSCN have started fishing and consuming sucker fish, after being exposed to it by other bands like the Montreal Lake Cree Nation and Lac La Ronge Indian Band. P3 described the sucker fish as "very nutritional".

Berry Picking and Medicine Gathering

Berry picking was mentioned in every interview. During the focus group, the practice would sometimes be referred to as "blueberry picking". When asked if berry picking was more often practiced by the women in the community, P5 jokingly stated that women have more patience for it, but immediately went on to clarify that she personally does not practice it much, and when she does, she brings along her husband and kids. To the same question, P3 responded that when she was younger, she and her mother would go berry picking while her father went on hunting trips. She explained:

> My mom would do the berry picking and store them. And then my dad, him in turn would, you know, do a scout around the camp, make sure there's no wild animals And then he would go do his hunting and prepare the meat too with my brothers. (March 23, 2023)

Similarly, medicine gathering and picking herbs was mentioned by every informant, but it was never discussed in length. One exception is represented by P6, who recounted how his father knew where to find rat root, also known as weegas. He stated:

> He knew where there was weegas, that's kind of a common remedy. […] It tastes kind of bitter, but our people use it and there's only certain places that it does grow. […] He knew where these were. I'm not sure if there's any others alive yet that know. (March 23, 2023)

Birding

During the interviews, harvesting birds took on a secondary role, and it was only briefly mentioned by 4 participants. P4 and P5 shared that they have always hunted "lots of birds, like mallards, geese and snow geese" (March 23, 2023) within the boundaries of the reserve. Similarly, P8 talked about hunting "ducks and geese mainly" in and directly around the JSCN reserve. Lastly, P7 recalled that, in the past, he would hunt spruce grouse, "but once in a while [they]'d get some prairie grouse" (March 23, 2023).

Other

When asked if they could think of anything else, some participants brought up logging and harvesting wood, although this was never discussed in length. The Elders in the focus group additionally mentioned using local springs for healing purposes.

4.1.2. Territories of Importance to the Community

The participants identified around twenty sites within their traditional territories that are of relevance for the community's land-use practices. These are summarised in the following table and illustrated in the map below. Two locations outside of the JSCN reserve – Fort à la Corne and Hudson Bay – play a key role. FG9's testimony summarised this by saying: "See, Fort à la Corne and Hudson Bay are our traditional territories" (March 10, 2023). This section will present the places of importance to the members of James Smith, as told by the 17 participants in this study.

Name	Location	Mention	Use	Time of use
Fort à la Corne	Northeast	17/17	Hunting, trapping, fishing, berry and medicine picking,	Present and past
Hudson Bay Area	East	17/17	Primarily hunting, but also trapping, fishing, berry and medicine picking, logging	Present and past

Red Earth and Shoal Lake	Northeast	12/17	Hunting, trapping and fishing	Present and past
Cumberland House	Northeast	10/17	Hunting	Present and past
JSCN Reserve and Saskatchewan River	--	17/17	Hunting (including birds), trapping, fishing, berry and medicine picking	Present and past
Tobin Lake	Northeast	11/17	Fishing	Present and past
Nipawin	Northeast	4/17	Hunt and berry picking	Present and past
Codette Lake	Northeast	10/17	Fishing and berry picking	Present and past
Big Sandy Lake	Northeast	1/17	Hunting and fishing	Past
Little Bear Lake	Northeast	2/17	Hunting and logging	Past
Lower Fishing Lake	Northeast	2/17	Fishing	Present and past
Montreal Lake	Northwest	6/17	Fishing, berry and medicine picking	Present and past
Candle Lake	Northwest	2/17	Fishing, hunting and trapping	Past
Prince Albert National Park	Northwest	2/17	Hunting	Present and past
La Ronge	Northwest	1/17	Hunting and berry picking	Present and past*
Birchbark Lake	Northwest	3/17	Hunting, trapping, fishing and berry picking	Present and past
Porcupine Plain	Southeast	3/17	Hunting	Present and past
Fishing Lake	Southeast	1/17	Hunting and fishing	Present and past
Naicam area	Southeast	2/17	Hunting	Present and past
Watrous	Southeast	3/17	Healing	Past
Cypress Hills	Southwest	3/17	Hunting	Present and past

Table 4. 2 Places of Importance to the JSCN

**11 participants shared that La Ronge was too far for James Smith members to travel to. This sample is not representative of all individuals and families that are part of James Smith, however all participants' views are included.*

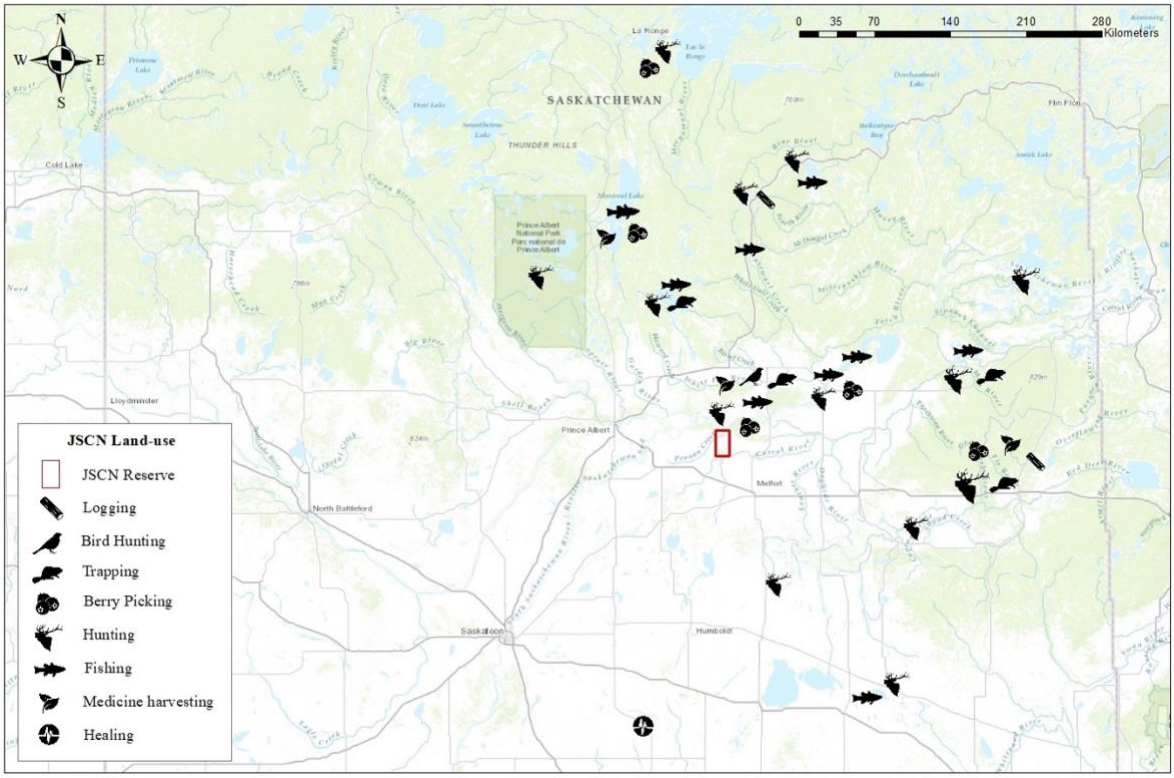


Figure 4. 1 Areas of importance as identified by the study participants.

Please note: Cypress Hills, Southwest of Saskatchewan, is not represented on this map.

Fort à la Corne

The Fort à la Corne Provincial Forest can be considered as the primary traditional territory of the JSCN – according to P6, this is due to the proximity of Fort à la Corne to the band. All 17 participants mentioned Fort à la Corne first when asked what they would consider to be their traditional territory. Fort à la Corne holds a strong significance for the community members. P6 stated: "it's a provincial forest, but really that's our traditional territory. […] There's signs, when you go into it, it says 'provincial forest', but also 'James Smith traditional territory'" (March 23. 2023). Moreover, during the focus group the Elders discussed how the community used to be known simply as "Fort à la Corne" before "James Smith" became widely used. FG9 stated:

> You go further north, they don't know James Smith. They know Fort à la Corne. The old people, that's how they remember it by. When you say James Smith they are lost, they don't know where [that is]. As soon as you say Fort à la Corne [they know]. (March 10, 2023)

From the interviews, it emerged that Fort à la Corne – often simply referred to as "the forestry" by the participants – was, and still is, primarily used for hunting, trapping, fishing, as well as for berry, medicine and herbs picking.

As mentioned above, P1 briefly glanced over the community's movements prior to European contact. More specifically, he illustrated that "prior to contact, [they] followed the buffalo. And [they]'d often winter, typically in what is now known as Fort à la Corne, which is right next door to James Smith" (March 6, 2023). Therefore, the connection with Fort à la Corne seems to go back in time, and it persisted throughout the centuries to this day. Several participants shared their family's testimonies spanning across the 20th Century. FG2 recalled that growing up, she always used to go camping in Fort à la Corne, where she would pick berries with her family, and where her father would hunt big game, including bears. Similarly, P7 shared that both his grandfathers had trap lines in Fort à la Corne, not too far from the reserve.

But Fort à la Corne is still widely used today, as reported by all participants. For example, P8 shared: "a lot of people will go to Fort à la Corne Forest and pick berries in the summertime. And gather the roots and medicines and that. And hunt, and set snares, whatever, for rabbits" (March 24, 2023). According to P6, "there's still people venturing out there in July and August" to hunt deer, elk and moose, but also to pick berries and looking for herbs and medicines.

Hudson Bay

Along with Fort à la Corne, the Hudson Bay area in SK (not to be confused with the large body of water in Quebec, Ontario and Manitoba) was largely discussed during the interviews. All participants reported having a connection to this area, whether direct (e.g., "I go to Hudson Bay") or indirect (e.g., "my dad used to go to Hudson Bay"). Hudson Bay has historically been used for a variety of purposes, primarily hunting: FG7 described it as a popular spot for hunting, and P3 shared: "they [her uncle and father] went over there to hunt and gather. They hunted moose. Moose is available in this area because it's really swampy" (March 23, 2023). But the participants reported that Hudson Bay was also a place for trapping, fishing, medicine gathering, and berry picking.

The historical connection with Hudson Bay became clear during the interviews, as several informants remembered older relatives who travelled to the area. P7, for example, reported that his

father would do logging in Hudson Bay in the early 1960s, and P8 remembered that his parents used to travel to the Hudson Bay area with other families from JSCN in the early 1970s to hunt moose and deer, trap, gather blueberries "and whatever they could find" (March 24, 2023). P1 stated: "I know my grandfather had a trapping block in and around the Hudson Bay area. There you are going to see a lot of trapping, lots of berry picking, medicine gathering, some hunting" (March 6, 2023). Similarly, P5 shared that her grandfather often used to trap in Hudson Bay, and that her family continued to go to that area for hunting, trapping and fishing. She added that although her family still travels to the Hudson Bay area, she has personally never been.

Connected to Hudson Bay, Red Earth and Shoal Lake were often discussed. When talking about them, P2 explained that they are part of the Hudson Bay area and are thus considered part of the James Smith traditional territories. He shared that community members would practice hunting and fishing in those areas. Additionally, the Elders in the focus group agreed that community members had trapping blocks around Red Earth and Shoal Lake. Although hesitant, P4 also believed that his grandparents used to travel to Red Earth and Shoal Lake, and potentially even as far as The Pas, in Manitoba. North of Red Earth and Shoal Lake is the Cumberland House area, where the Elders reported having gone to hunt. Similarly, P3 explained that because the Cumberland House area is swampy, it was considered a good place to hunt moose.

All informants agreed that the Hudson Bay area is still actively used today by members of the JSCN. For example, P4 shared that he often hunts moose and elk in the Hudson Bay area in the wintertime, as well as pick medicinal plants like chaga or "whatever else the forest has to offer that [he] see[s] out there" (March 23, 2023).

The JSCN Reserve

Alongside Fort à la Corne and Hudson Bay, the study participants recognised the JSCN reserve and surrounding areas are central for land-use practices. For example, when asked what she would consider traditional territories, P3 circled the area immediately surrounding the reserve on the map. She stated: "Right here, and maybe a little bit more past it too. That's what we were given to go hunt and gather from the government". Similarly, although not a land-user himself, P1 stated: "I'm told we still do hunting […] in and around James Smith". P3 additionally mentioned that berry picking has always been practiced around the reserve. She remembered from her younger days: "you didn't

even have to drive very far. All of a sudden it was just blue, a blue sea of berries" (March 23, 2023). During a Grandmother Moon Ceremony held on April 6, 2023, a young member of the JSCN shared that her Auntie calls the JSCN "Nihtawikihcikanihk – the 'Good Growing Area" (personal conversation on April 6, 2023, used with permission).

The Saskatchewan River

The connection with the reserve and surrounding areas became more apparent when the informants discussed their relationship with the Saskatchewan River, which runs through their home reserve. When asked about lakes or rivers that are important to the community, FG2 immediately thought of the Saskatchewan River within the reserve, and pointed to it on the map.

According to P1, the community's connection to the Saskatchewan River dates back to the Fur Trade. P8 explained that community members have primarily relied on the Saskatchewan River for fishing. For example, for P4, the Saskatchewan River has always been the primary fishing spot. He stated: "I fish up and down this riverbank" (March 23, 2023) in and just around the reserve. However, in the last few years he has had to travel outside of the reserve to fish, as will be further discussed below. He reported recently fishing farther north in Pelican Lake and Jan Lake. A similar sentiment is found in FG9's testimony: "Our livelihood one time was the Saskatchewan River. […] In my early days I'd get down there and I'd come back in a wagon or a sleigh. […] I used to fish with my grandfather down in the river".

Other Locations Within Saskatchewan

During the interviews, the participants identified several locations other than the ones considered so far. These areas are presented here as secondary to Fort à la Corne, Hudson Bay and the boundaries of the JSCN reserve, as they were not mentioned or unanimously agreed on by all study participants.

<u>Northeast of the JSCN Reserve</u>

P2 explained that the community would follow the river northeast of the reserve, and that they would fish in places like Tobin Lake. Other participants reported similar movements, illustrated in the map below.

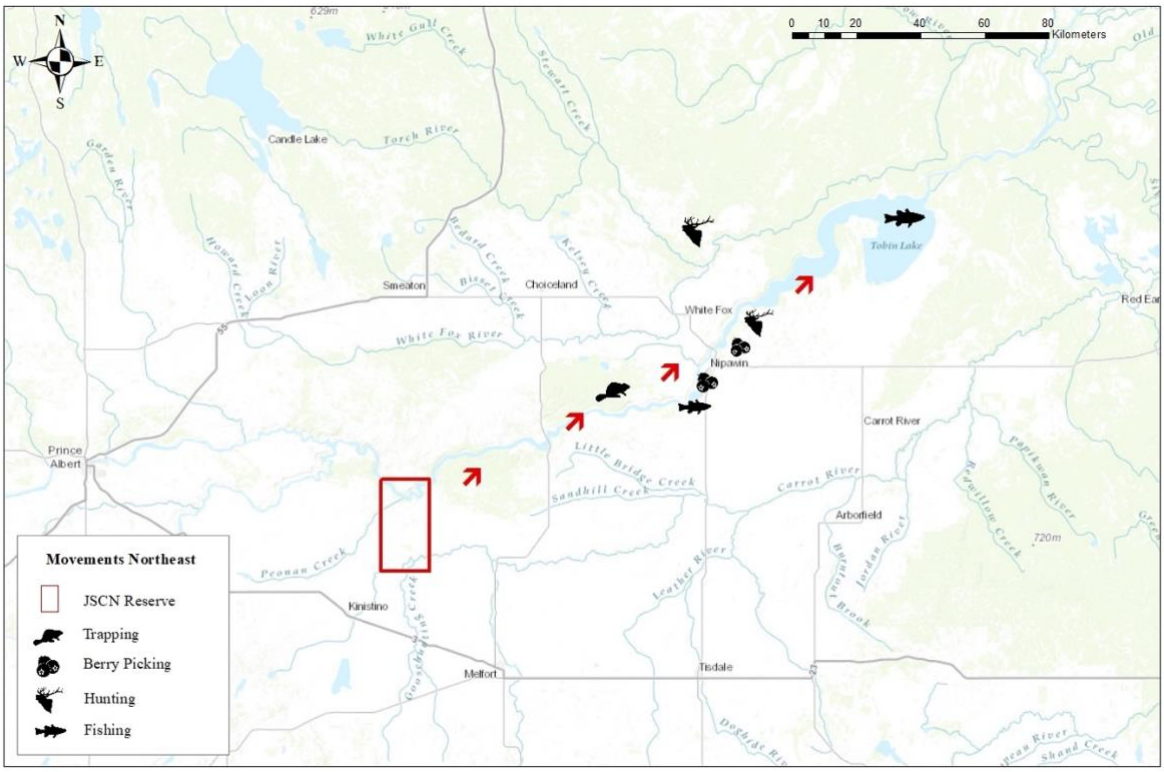


Figure 4. 2 JSCN movements Northeast of the reserve

P4 shared that he still fishes in Tobin Lake, north of the Nipawin dam, where he mostly catches walleye, pike and goldeye. P4 reported hunting moose in the forestry northeast of Garrick, and FG5 said that they would also hunt and go berry picking in the same areas – not far from Nipawin. A similar statement was made by P7, who reported that members of the community would walk along the river going East, all the way to Nipawin, where they would hunt moose, and to Codette Lake, an area known in the 1970s as a "good fishing spot", and where they would pick berries. The Elders in the focus group agreed that community members have always travelled following the river East to Wapiti, Codette Lake and Tobin Lake for land-use practices like trapping. Lastly, P6 stated that Tobin Lake used to be a popular spot for fishing in the 1960s and 1970s, when – he recalled – the lake was still referred to with its derogatory name "squaw rapids".

When asked about Big Sandy Lake and Deschambault Lake – further north, FG6 argued that these would be considered traditional territories of other First Nations like Montreal Lake Cree Nation and Lac La Ronge Indian Band. Similarly, P2 shared that he has never gone to those areas for land-use practices. However, P7 reported that his great grandfather would hunt and fish as far north as

Big Sandy Lake in the first half of the 20th century, and that he would also travel to Little Bear Lake, as well as the areas surrounding the Narrow Hills Provincial Park, to hunt and to do some logging. When reminiscing, P7 also added: "he [great grandfather] used to take a dog team when he would go all the way up to Little Bear and Narrows. And he'd go for about two or three months at a time during the winter, then he'd come back." (March 23, 2023). Today, according to P8, community members go to Lower Fishing Lake, in the Narrow Hills Provincial Park, to fish.

Northwest of the JSCN Reserve

A number of locations northwest of the reserve were mentioned by the participants, Montreal Lake being the most cited. P2 explained that members of James Smith used to go fishing in Montreal Lake in the past, and that they still go today, a statement also supported by P4 and P8. P3 said that women have always gone to Montreal Lake to pick all sorts of berries and cranberries, but also to gather medicinal plants.

Candle Lake, a few kilometres south of Montreal Lake, was mentioned by 2 participants. P2 said that the community has always gone there to fish. He added that in the area surrounding Candle Lake, community members have cabins, registered trap lines, and that the area was used for moose hunting. Not far from Candle Lake is Birchbark Lake, which was discussed by 3 participants as a key hunting and trapping spot. P8, in particular, shared that community members have always travelled to Birchbark Lake to hunt moose, deer and elk, to fish and to pick blueberries. Similarly, P6 explained that in the second half of the 20th century, the community had a pre-existing arrangement that allowed them to utilise the area surrounding Birchbark Lake as their own for hunting and for other practices, and that his late grandfather would often go there.

West of Montreal and Candle Lakes is the Prince Albert National Park. P2 showed that the community used to go into the Prince Albert National Park, and around Big River, to hunt moose. P7's testimony seems to agree with this statement: he shared that ever since the 1980s, community members have been travelling to the Prince Albert National Park to hunt elk.

Lastly, P3 shared that people have always gone to the La Ronge area, several kilometres hundred north of Montreal Lake, to pick berries and to hunt elk and moose. However, the Elders in the focus group, P1 and P6 all agreed that La Ronge would be too far out of the way from the reserve

for people to travel to, especially in the past. P6 explained: "well, distance is one of the big things" (March 23, 2023).

South of the JSCN Reserve

The region south of the reserve was for the most part omitted by most participants. When asked if the community would travel south, P7 simply stated "no, we hardly ever went that way" (March 23, 2023). P4 and P5 reported travelling north of Naicam to hunt elk, as well as to the Porcupine Plain area to hunt moose. Both Naicam and Porcupine Plain were also mentioned by P1, who shared that community members currently hunt in these areas, but did not in the past, whilst P6 argued that land users have always travelled to Porcupine Plain, as well as to Fishing Lake.

In the southwest, at the border with Alberta, is the Cypress Hills area, which was mentioned by 4 participants. P1 stated: "I wouldn't be surprised if we went down to Cypress Hills as well. Maybe even to winter" (March 6, 2023). Both FG7 and P7 reported that in recent years people have gone hunting around Maple Creek, which is located in the Cypress Hills.

One last location south of the reserve was identified by the Elders during the focus groups: FG2 shared that her parents would travel to Watrous, about 200 km south of the reserve. FG5 and FG1 specified that community members would go to Watrous, near the Manitou springs, "so that they could bathe in the water to heal" (FG1). FG1 stated: "these are the healing springs" (March 10, 2023).

Areas Outside of Saskatchewan

P4 was the only participant to report having gone outside of the province of Saskatchewan for land-use practices. He remembered having travelled to Suffield, in Alberta, around 2018 to hunt elk. However, he quickly dismissed the relevance of the fact by sharing that he had no intention of returning, and that, in his knowledge, members of JSCN had never gone to Suffield or surrounding areas to hunt.

4.1.3. Observed Changes

It emerged from the interviews that the way James Smith community members relate to the land has changed over time. Whilst some of these changes in land-use practices are a result of a different

lifestyle, most – as reported by almost all participants – were imposed on the community by external factor, and more specifically by the development of industry in and around the band's traditional territories. These changes will be explored in this section.

Presence of Industry and Pollution

> "They say the fish is not healthy anymore. It's kind of toxic."
>
> P3, (March 23, 2023)

With the exception of P7, who did not openly discuss the issue, all participants expressed negative sentiments and shared anecdotes and stories that centred around the changes that development projects and industry have brought on their territories and land-use practices.

Most informants shared their thoughts on the negative consequences that a diamond mining operation has had on the community's traditional practices in the Fort à la Corne Provincial Forest. When asked if he still traps or hunts, FG7 explained: "no, the mine took over my area. I went trapping. But the mine took over" (March 10, 2023). Similarly, P3 shared that the diamond mine has disrupted the community's practices in the Fort à la Corne Forest. She stated:

> There was a diamond mine out there, out in the forestry on the other side of the river in our traditional land. So we weren't allowed to go back there. We were prohibited to go and, you know, pick where we wanted to pick. […] Just this past year, last summer, they [members of JSCN] started going out there again. But they were still being halted. You know, you can't come this way. There's men at work, you can't come and interrupt them. You can't, you might get hurt, blah blah blah. Just to keep us off that land, our traditional land. So that was kind of sad. So of course the First Nations from my community, they had to go further. They went further north, out of our traditional territories. (March 23, 2023)

She went on to explain not only that the mining operation pushed JSCN members off their traditional territories, but that it also significantly altered the landscape, forcing land-users to put traditional practices like berry picking on hold. In her words:

> It was really beautiful until the industry started taking down our wood. And that diamond mine really scared a lot of animals away, poisoned the land. […] Berry picking stopped for quite a while there, you know, because industries going in there and cutting down the bush and doing whatever they said they need to do. But they ruined a lot of our land by going in there and ruining the ground and chasing away the animals. Because the animals also help with refurbishing the berries that are picked out there by eating them. (March 23, 2023)

Similarly, P2 explained that people used to pick medicines in Fort à la Corne, but this has declined "cause of the projects". Other participants also commented on the mining operation: FG8 stated: "ever since that mine came there, or the site for the mine. It just looks like a desert there now" (March 10, 2023). When asked if hunting practice have changed over the years, P4 shared that he used to hunt right in his backyard, in Fort à la Corne, but this has now dramatically changed, forcing him to travel great distances to be able to hunt:

> It's hard to see any animals, just because of the mine that was going on, and the harvesting timber. That's a big difference. I was telling my buddy about this, you know, about 20 years ago when I first started hunting, I was able to see moose every time I came to the bush, and I'd see herds of elk. Now you're lucky to see one in a week. The moose, I don't know where they all went. (P4, March 23, 2023)

But the mining operation in Fort à la Corne was not the sole focus of the participants' testimonies. Industries in and around the community's territories of importance have affected their practices since the 1960s. Special attention was given by the Elders in the focus group, as well as by other participants, to the decline of fishing practices, and especially of the availability of the goldeye in the Saskatchewan River. As mentioned in the previous section, the goldeye was considered as the primary catch for members of the JSCN, but – as illustrated by P2 and P6, goldeye can hardly be found today in the river that runs through and around the reserve. P2 went on to explain that when, in the 1960s and 1970s, "warehouses set up there, fishing kind of stopped for [them] because it [the river] was contaminated, there was a lot of mercury in the water" (March 23, 2023). Telling a similar tale, FG9 shared:

> During the 50s, 60s, 70s, 80s, we lived off the river. And then, all of a sudden Prince Albert built this pulp mill. And then of course the city of Edmonton came over here. All these were draining into the Saskatchewan River. Of course, we didn't know

> about that. When the pulp mill was built, you see, that system goes right into the Saskatchewan River. Poured into there. Of course, all that shit they throw into the river came this way. And pretty soon we were finding out our people had started to get a little sick. So we started testing the fish here. They had mercury. Our fish started having mercury. Because it was those fish that we lived off of. So we had to stop fishing, we told our people no more. It's gonna get you sick. At the time I was still a Chief. I should have launched a lawsuit against the pulp mill in the city of Prince Albert and Edmonton. Should have done that. I didn't. But it took away our livelihood. Although we still use it just to whatever. But now we don't eat off of there anymore. But they do hunt off the river. They hunt the elk, whatever comes out along the river. That's the only thing we do now. That's about it. So *in essence, these cities, these industries along the river took our livelihood away and destroyed it. They'll never come back* [emphasis added]. (March 10, 2023)

P4 stated that he no longer trusts – and fishes – the Saskatchewan River, as it's too polluted:

> Probably over the past 20 years I've seen the difference in the water. Like you wait, once the water starts to flow. You can see the difference in the colour of both rivers in the north and the south. The south looks green. This looks like the Mississippi. You know how the Mississippi looks? This looks exactly like the Mississippi. It was clear, you used to be able to see right to the bottom. Just about to the bottom. It was clear. It was blue. Now it's green. Green and brown. (March 23, 2023)

When asked what he believes happened to the river, P4 hesitantly stated: "White people", and: "that's pollution. That's all the way connected to those rivers. And I've seen where the Saskatchewan River starts at the border. It's clear over there. Then it comes all the way this way, and it turns brown. […] I've been fishing this river since I was a kid. […] And you see the difference in the river." (March 23, 2023). P4 went on to explain that he now has to travel more and more north to find good fish, in his words: "six hours one way just to eat healthy fish. And I notice lots of spots. I don't know what they are, I'm not a biologist. But I notice spots on a fish. I catch 'em, and throw 'em back" (March 23, 2023).

Lastly, the participants reported that farming operations around the reserve have impacted the quality of fish available to the community. Three Elders in the focus group discussed the practices of two cattle farms just a few kilometres away from the reserve, and in particular those of a local farmer who regularly "lets his cattle go right in the creek" (FG5). FG7 added: "The snow is yellow. You can

smell it when you go. Especially when it's springtime. They let it go on top of the ice and then it melts, and then it goes down, goes into the river" (March 10, 2023), where members of James Smith would normally fish.

Lifestyle Changes

Not all changes were attributed to the presence of industrial facilities in the community's traditional lands. Some participants raised the issue of changes in people's lifestyles, and the ways in which these have affected land-use practices. One of the most frequent themes here is a perceived change in the local economy, which has rendered some practices economically unsustainable. In particular, four participants sustained that trapping is no longer economically viable, which would explain why – according to FG1, "[they] don't have interest in trapping anymore". Because trapping is labour intensive, and the fur price has gone down, explained P8, community members have stopped practicing. According to FG9, "people, they're not trapping anymore. Of course, the trapping industry – there is no money in it. There's nothing, no money for trapping beaver, whatever else, no big dollars anymore" (March 10, 2023). Similarly, P7 stated: "back then it was good money for trapping. Not like today. Oh boy. It's hard out there today" (March 23, 2023).

Other participants shared that community members have simply stopped engaging in certain practices. This is reflected in P8's words, who recalled how people in the past would set out nets in the Saskatchewan River, leave them overnight, and check them again in the morning, but he explained that this practice is no longer in use. P3 shared that "it was a beautiful, beautiful life", and lamented that community members no longer spend time out in the land, so much so that "lots of roads are overgrown from nobody driving on them anymore". When discussing how her family would go on regular berry picking trips every year once school was out, P3 explained:

> This was back in the late 70s, early 80s. So it was really nice. And that wasn't too long ago that we were still doing that. Now we don't even like hardly do it. there's only about a handful of women that do that now, that just go out camp out there for a few days and pick what they need and come back. (March 23, 2023).

Government Intervention

A theme that emerged from the focus group with the Elders is that of the government's intervention on the community's land use practices. In particular, the Elders recalled that several community

members owned 10 – 15 cabins across the river near the reserve, and that in the 1980s all of them were burnt down by the government. When asked why, FG7 stated: "I don't know why they burnt them down. Because we didn't pay like $25 dollars a year. Lot of work put into them, and they burnt them down". FG5 further explained:

> We went to a meeting in Hudson Bay. […] We brought that up with SARM [Saskatchewan Association of Rural Municipalities]. Asked how come our cabins were burnt. And they told us we didn't have a permit. […] There's three cabins that non-First Nations have. And they didn't even touch them. They never touched them, eh. We had our trapping supplies in there. Our everything. So we lost them. Burnt. (March 10, 2023)

From the Elders' testimonies, it was clear that the loss of the community's cabins at the hands of the government significantly slowed down trapping. When asked if they knew of any land-users who still actively practice trapping, FG2 stated: "No, the roads are closed and the cabins are burned down" (March 10, 2023). The lost cabins were additionally mentioned by P8 and P6. The latter added that the government was also responsible for rendering some of the backroads and trails inaccessible to the community, so as to "impede what [they] had always exercised through the years" (March 23, 2023).

Other Changes

Two participants sustained that bird hunting has significantly changed along with other practices, however potential causes for this were not discussed. P2 shared: "we used to do that [birding] quite a bit because on this area here [circles the area around the reserve on the map], it's kind of a migration route. And we used to get a lot of birds, but in the past there's been a lot of worms in the birds. Yeah. So I don't really hunt those anymore" (March 23, 2023). P4 and P5, on the other hand, noticed changes in the quantities and/or species present in and around the reserve: in the past 10 years, they have noticed more ducks ("Usually I just see 6, 10, 15, now I see well over a hundred" – P4), as well as more cranes and vultures. P4 stated: "When I was younger, I hardly ever see a vulture. Now I see more of them. […] I didn't even know those birds were around here. When I was a kid my uncle showed me one, and now today I see them just about every day" (March 23, 2023).

Lastly, climate change and global warming were openly addressed by P4 and P5. When explaining that the community has recently seen lighter or heavier snowfalls depending on the year, P4 stated: "you can definitely see climate change, you don't even have to be an outdoorsman person to notice the difference" (March 23, 2023). He added that these changes impact some of their land-use practices. For instance, P5 shared that she now simply buys her berries from the store, because "in the past few years they've been just small, they're not growing" (March 23, 2023). According to P4, berries grow depending on weather conditions: changes in rainfall, and more or less exposure to the sun will determine their growth. "You spend enough time outside, out in the bush and you start noticing" he stated, "weather changes" (March 23, 2023).

4.1.4. Other

Three additional sub-themes were identified. These are: (1) the location of JSCN burial sites; (2) possible competition with other First Nations in some of the territories identified as important to the community; and (3) the participants' comments on the use of Cree when discussing land-use practices.

Burial sites

The Elders in the focus group and one additional Elder interviewed individually all pointed to a number of burial sites connected to members of the JSCN on the map provided to them.

Burial sites were identified:

- In the Fort à la Corne forest, "across the river" (FG5), nearby the reserve. P7 stated that the burial ground in Fort à la Corne is "about four or five miles East, Northway to the river" (March 23, 2023).
- Around Lower Fishing Lake, in the Narrow Hills Provincial Park. The community liaison specified that this area is known as "Caribou Creek" by the community.
- At the forks where the North and South Saskatchewan Rivers meet.
- And near the city of Prince Albert.

The sites of burial grounds were briefly discussed by two other participants. P2 believed that JSCN burial sites can be found near Little Bear Lake, north of the Narrow Hills Provincial Park –

however, he insisted that he would not be able to pinpoint the exact location of these sites. P6 identified graves of the community' ancestor halfway between the reserve and the village of Beatty, a few kilometres Northwest of Melfort.

When asked why the community's burial grounds are spread out across different areas, the Elders explained that this can be attributed both to the personal history of different family groups, and to the community's traveling tendencies. "We're nomads", said FG8, to which FG1 added: "[we] lived and moved in different areas. Like I know there were lots that lived in Hudson Bay, but I don't know if there's any burial ground there" (March 10, 2023).

Competition with other Nations

Participants were asked if there was ever any competition with other First Nations over territories and resources. The interviews and the focus group revealed that whilst the territories and resources of importance to members of James Smith have always been shared with other First Nation, this never led to animosity. In the words of P1, the co-use of the land amongst different First Nations "is going to be fluid. It always was" (March 6, 2023), and – as explained by FG7 – "here we used to get along together. We didn't have war between each band" (March 10, 2023).

When asked what other First Nations they would share their territories with, the Elders in the focus group explained that the Northern Cree, such as members of the Sturgeon Lake First Nation and the Montreal Lake Cree Nation often travel to the Fort à la Corne forest to hunt the game, however – as stated by FG5, there is no competition with these communities, as Fort à la Corne "is a pretty big area". According to P2, the Fort à la Corne area is additionally shared with the Muskoday First Nation, and P4, P7 and P8 explained that the Cumberland House, the Red Earth and the Shoal Lake Cree Nations still go on hunting tips in Fort à la Corne. None of these relationships were described as contentious. In the words of P8, "there was really no squabble. The land was, I guess, free to go and hunt and pick berries, whatever you want" (March 24, 2023).

To this day, there continues to be no animosity with other First Nation using JSCN traditional territories, as stated by P6 in reference to Fort à la Corne. The same can be said about the Hudson Bay area, which, as explained FG9, is peacefully shared with the Eastern Saulteaux First Nations: Cote First Nation, Keeseekoose First Nation, as well as the Key and Kinistin First Nations.

Only one community member, P2, mentioned that there currently is discontent in the Hudson Bay area directed at a First Nations from The Pas in Manitoba. He stated:

> From what I was told, they don't have rights for hunting and trapping like this as we do in Saskatchewan. So they come over here and do their hunting under Treaty 6. Cause under their provincial jurisdiction they got to hunt within the season, I guess. That [relationship] is kind of rocky. Some people don't like it because when they come in here, they kind of bring in trailers and they harvest a lot out of the area. So that's why a lot of people don't really like them coming. (March 10, 2023)

Use of the Cree language

All interviews were conducted in English, however, the role that the Cree language has played in some of the participants' lives became apparent during some of the conversations. For example, when sharing her father' hunting stories, P3 remembered that he would tell all of them in Cree. When asked if she spoke Cree, P3 stated: "Just a little bit. Just a few words. I lost it going to school. We weren't allowed to speak Cree. We had to speak English", and

> I think just the older people know how to speak Cree now. And you know, they should take it upon themselves to speak Cree to us. Give us a chance to try and, you know, get the concept of what they're trying to tell us. Give us a chance to try and grasp what they're trying to say to us. And then if we don't understand, then repeat it in English. And then I'll go back and say, oh yeah, I remember those words. (March 23, 2023)

Similarly, when asked if he knew the Cree names for some of the resources of importance to the community – such as the goldeye, P4 said "No, I don't, I wish I did. […] You'll have to find an older person" (March 23, 2023). P1 and P8 also recommended to speak to older community members to find out more about Cree.

4.2. Theme 2: Importance to the Community

As part of this community-driven research, it was important to understand the significance that identifying traditional territories and past and present land-use practices has for members of the JSCN. Two major motivations were found: (1) the need to document areas of importance so as to

have a saying when decisions are made in their traditional territories; and (2) the wish to preserve the community's long-standing knowledge around land use.

4.2.1. The Need to Have a Saying

> "We have to do a better job of what we're responsible for.
> We're stewards of the land and the waters. We're stewards. That's what we are."
> FG9, (March 10, 2023)

The previous section has shown that changes in the management of the community's traditional territories is significantly altering James Smith members' traditional land use practices. The participants' testimonies were accompanied by a sentiment of frustration and worry. All participants expressed their wish to continue to use their lands traditionally. Using the case of Fort à la Corne, P1 summarised this need by saying:

> They [community members] are worried about the state of the Fort à la Corne Forest. Cause that's where most of the land users are going. […] Some of them just want to be able to access the meat to supply their freezers and take care of their people. (March 6, 2023)

The participants shared their frustration derived from not being properly consulted, or even informed, when decisions were made that would affect their lands. This was most apparent during the focus group, where Elders discussed how the Fort à la Corne Forest was rendered inaccessible to them without prior consultation. FG7 stated:

> Why did the province start subdividing the forestry on the south side of the reserve and selling it to those people? Why did they do they? You know, and this has happened, and people used to trap. And now you can't, you gotta get permission to trap on the south side of the river. […] Here. They sold this to private people. You know, why did they do that without consulting the band? Not even asking, all of a sudden they were selling, selling where we used to go trapping. This is the area they called 'where the horse died'. It's taken. Now it's private land, which is not right. (March 10, 2023)

As illustrated by P2, documenting where the community goes to hunt, trap, fish and gather serves as a tool to respond to this infringement of land-use rights, and to strengthen the band's stance against development projects that could negatively affect their territories. During his interview, P2 showed a series of maps documenting James Smith members' land use in Fort à la Corne. These maps, he explained, were created when the company behind the diamond mine operation – Shore Gold – argued that JSCN had never used the area. "So we showed them", he stated. And he went on to share: "this is the kind of stuff that I wanted to do for Hudson Bay and Birchbark Lake". When asked why he thought it was important to do this for areas other than Fort à la Corne, he stated: "it'll be useful in our duty to consul and, you know, so we don't get left behind like we did there [in Fort à la Corne]". A similar concern was brought up by P1, who advocated for the need to document areas that have so far only taken a secondary role. He explained:

> What we were really hoping that would happen is that we could take this particular approach [hodgepodge mapping] and apply it to the Hudson Bay area. Or any other area outside of the Fort à la Corne Forest which we haven't documented. Because we need to start providing the government of Canada and Saskatchewan in particular, where we used to hunt, fish, trap and gather. So that we can participate meaningfully in certain consultation projects. (March 6, 2023)

A number of potential development projects proposed in the community's territories were discussed in the interviews. P1 mentioned that the need to document territories of importance is ever more pressing in light of an irrigation expansion, a "huge project that the government of Saskatchewan is looking to implement". Similarly, P2 raised his concerns for Hudson Bay, and stressed the urgency to document land use in that area. He stated: "I know in Hudson Bay there's a lot of deep deforestation going on. And I know there's a lot of shale. There's a shale deposit here that they just don't have the technology to get at right now, but in the future, yeah. It has the potential to be the size of Fort McMurray" (P2, March 23, 2023). P6 additionally discussed the risk that a peat moss mining project north of the reserve would pose to the community's hunting practices. Lastly, a sense of urgency was present in FG9's plea to register the territories important to the community. "You know, they're doing some exploration here. Back here in our lands" he stated, "they're going to take our territory away" (March 10, 2023).

The conversations with P2 and P6 brought to light two reasons why the areas outside of Fort à la Corne are yet to be documented. One is financial: P2 explained that there is not enough funding to carry out projects similar to the one done for Fort à la Corne. He clarified that the mapping project carried out in Fort à la Corne was financed by Shore Gold as part of their duty to consult, but that there is currently no funding for new projects. The second reason, tied to the first, is organisational in nature. More specifically, P6 shared that he has a lot of background information on JSCN traditional territories, and that he would like to make sense of it, but he simply does not have enough time to dedicate to the project. "It's good that the University of Saskatchewan is involved", he shared, "it's something" (March 23, 2023).

It is important to note here that P2 recognised that documenting the territories of importance to the community is not a bulletproof tool. Indeed, he explained that when projects are proposed, the province "is going to give the approval no matter what, but we want to not get left out". Although not perfect, P2 believed that at the very least, these exercises can help the community get the proper compensations if new projects are in fact developed. He stated: "We have to prove that we were there. That we're still using it. So they'll try to mitigate the impacts" (March 23, 2023). In the words of P1:

> We want to make sure we have a strong position there, and so that's why this kind of information is gonna be absolutely essential to improving our position and our standing in these processes. (March 6, 2023)

In addition to the need to have a saying when development projects are proposed, the community members raised their concerns in connection to the issuing of permits that will allow land users to continue to freely go out into the land. P6 spoke extensively on the matter. He explained that, to manage over hunting, the provincial government has recently requested that the band's land management start issuing permits for hunting and trapping, and that – in order to do this – the community needs to have a clear understanding of the geographical areas where they conduct land-use practices. He stated: "if we're gonna be assuming responsibility to permitting hunting by means of a permit or a licence, we have to know the actual boundaries. […] We need something that's gonna be able to stand up in court" (March 23, 2023). Similarly, the Elders in the focus group spoke of how land-users are increasingly being fined when out into the land, and that documenting traditional territories would support them when fighting these charges. FG9 shared:

> You see, in our treaties, we have the right to hunt, fish and trap. Doesn't matter where, we don't need a license. But unfortunately right now, they [the government] charge a lot of people for hunting, for instance, and they go to court. […] They never win. […] So if we map out, and take a look at all the people that had cabins here. That's their traditional territory. That's their family. That's where they should be now. (March 6, 2023)

4.2.2. Wish to Preserve Elders and Long-Standing Knowledge

A second motivation identified in this section concerns the participants' wish to preserve the community's long-standing knowledge related to land-use. This sentiment was most apparent in the focus group, during which all nine Elders emphasised the need to pass down their knowledge to the younger generations. After the opening prayer at the beginning of the focus group, the community liaison proudly said that "there is a lot of history here" (community liaison, March 10, 2023), referring to the Elders present that day. The Elders argued that their traditional ways are disappearing – "our tradition is getting lost" stated FG5, to which FG9 responded: "it's important for us to share" – and their testimonies made apparent a desire to teach what they know to the younger members of their families and of the community. FG8, for example, shared that once Fort à la Corne becomes accessible again, she wishes to make a video for her children and grandchildren – she stated: "just to give them a view of what I came through growing up" (March 10, 2023). FG9 explained that to share is their ancestral task: "[we have to] teach our young people who they are, where they come from, how we lived together here for over a hundred years" (March 10, 2023). Similarly, in her individual interview, P3 spoke of a cabin that she recently bought near the reserve, where she would like to start a summer camp for the children of the community to learn how to find and recognise berries, and how to fish. "I'll give them pamphlets", she stated, "and say – okay, see if you can find this berry or this tree or medicine" (March 23, 2023).

P3, in particular, shared an example of how traditional knowledge will aid future generations. She explained that the tradition of canning berries has almost entirely been lost in the community, and that people now prefer freezing their berries to save them for special occasions, instead of canning them. She went on to show how other First Nation communities, like Cowessess First Nation, were able to better preserve their traditional ways. She stated: "They can over there. They even can fruits. That's one of the things I would like to see bring back to the community" (March 23, 2023). Re-

learning how to can berries, she showed, will help younger generations adapt and survive to external changes. "That's why I think it's important for us to get back to our traditions and cultures. Because one of these days we're not gonna have the means to go to the grocery store, buy food like that. Pretty soon that day is gonna come". She further explained:

> More traditionally they can just live off the land. And we did that so easily. It was hard work, but it was easy. […] I think that would help our children gain some knowledge and some pride back in preparing their own food. Like we were taught, we would prepare our own food and store it properly so it'll keep for months, for the whole winter. That is completely lost, but it can be regained. […] I think they'd feel awesome about that. Bring a good feeling over them. (March 23, 2023)

However, parallel to their desire to share their knowledge with the younger generations, three participants – including one Elder – criticised the youth's relationship with technology, by affirming that this poses a threat to the maintenance of traditional knowledge. After explaining that young members in the community do not know how to, for example, pick berries, FG1 soon followed up with: "nowadays, the young generations, they're not interested in blueberry picking or living off wild meat or making Bannock, no interest, just this [picks up phone]. It's interfering with their education" (March 10, 2023). Similarly, P4 shared that he regularly organises traditional camps – where he teaches children and young adults how to hunt, fish, and more – however, he explained that many kids have no interest in the activities proposed. "Too much cell phone, too much electronics", he observed, "made these kids lazy" (March 23, 2023).

The remaining participants all agreed that preserving Elders' knowledge has great benefits. P4 recognised that even though restoring the community's traditional knowledge may not lead to significant changes, he shared: "They [community members]'ll live healthier. They'll have healthier lives. That's living a traditional life, living off the land instead of going in the store and buy your food. That's a big difference in your health." (March 23, 2023). Having the information shared by the Elders on record, argued P1, is an essential element of documenting traditional land-use and territories, as it helps improve the community's position at the table during negotiations by "asserting to the governments of Saskatchewan and Canada that we have been using the land and we want to continue to be able to use the land" (March 6, 2023).

Documenting this knowledge is thus crucial according to all participants, and it became clear during the interviews that there is a sense of urgency in the need to speak to and learn from the Elders. P8 explained that there are not many Elders still alive within the community who possess the long-standing knowledge of the land that is so important to keep. He further shared: "And I don't think they're really handing it down, or *no one is asking*, you know, actually [emphasis added]" (March 24, 2023).

4.3. Theme 3: Mapping Experience

The final theme discussed here concerns the participatory mapping experience, and the informants' feedback and responses to it. During the interviews, participants were asked to engage with a 150x96 cm map of the province of Saskatchewan, and they were provided with markers to highlight relevant sections on the map. To encourage the use of the map during the interviews, a series of prompts were used, such as "draw on where you think…", "you're pointing a finger, tell me more", "let's mark them", and "could you put a vague mark on the map where that is?".

Three major sub-themes were identified here: (1) the overall positive response to the use of a map as a boundary object; (2) the need for a better map; and (3) a sense of frustration from not receiving feedback after being involved in mapping workshops.

4.3.1. Positive Response to the Map

Towards the end of each interview, informants were asked what they thought of the use of a map during the conversation, and their response was overall positive. 14 out of the 17 participants explicitly expressed their approval of the use of a map, stating that a map serves as a useful tool to encourage and facilitate the conversation. Participants shared that "it is very useful" (P2), "it is a good way" (FG2), and even that "you cannot do this [kind of work] without having access to maps" (P1). P6 stated:

> Well, I think really that the map serves the basis of having an actual illustration of the geographics of what we've been talking about. So, by all means, it's always good to have a map. If you don't, then *it's a missing ingredient* into what you're trying to achieve [emphasis added]. (March 23, 2023)

Similarly, P2 observed: "It [a map] kind of gives you an idea, we can see where [things are]" (March 23, 2023).

Figure 4. 3 Study participant indicating the location of the Saskatchewan River running through the reserve on the prompt map.

[Photograph taken on March 23, 2023 on the JSCN reserve, SK, by Carmen Margiotta]

One community member in the focus group argued that working around a map helped to keep all participants engaged. In particular, FG9 stated: "You've seen today, you saw all these people and how interested they were. I've never seen this before" (March 10, 2023).

Lastly, even though two additional participants interviewed individually did not directly answer the question "what did you think of the use of a map?", they both actively engaged with it, and seemed to enjoy the exercise. P3 stated: "I shared lots. I enjoyed it".

4.3.2. Need for a Better Map

When presented with the map of Saskatchewan, and asked to use it to pinpoint where the territories of importance for the community are, the Elders in the focus group, as well as five other participants commented that a more detailed map, zoomed into the reserve and surrounding areas would have made the exercise easier.

The Elders agreed that a map showing a smaller area of the region in more detail would have worked better when identifying traditional territories. FG8, for example, noticed how most of the writing done on the map, by the end of the interview, was concentrated in the Fort à la Corne and the Hudson Bay areas, and that in the future, bringing a map only depicting those regions would be more helpful. Similarly, P3 stated:

> You know what you should do? You should get a bigger version of this thing [points at the area surrounding the JSCN reserve]. I bet you people can really pinpoint the gathering spots and the hunting spots. I bet you they'd really be accurate and say, hey, I set up camp in this area. Like that. (March 23, 2023)

The interview with P4 and P5 opened with P4's comment: "You don't have a very good map, do you? <laugh>", followed by "it doesn't show our territory very good" (March 23, 2023). P4 explained that a map zoomed into the Fort à la Corne Forest would allow him to illustrate in more detail where he goes to hunt, fish, etc. However, when asked if he could think of places outside of Fort à la Corne that are important to the community, he observed that having a more comprehensive map served the task well.

Connected to the informants' feedback on the map used during the interviews, it should be noted here that several participants offered to bring, show, and use maps that they owned, and that were created by community members. During the focus group, FG9 insisted on momentarily stepping out to go collect a map of the Hudson Bay area that he had personally created together with another Elder of the community. On his return, all the Elders were eager to hear when and how the map was produced, and they engaged with it more actively than they had up to that point with the map that they had originally been presented with (see Figures 4.4. and 4.5.).

Figure 4. 4 -5 Elders in the focus group engaging with a map produced by FG9 displaying trapping sites in the Hudson Bay area

[Photographs taken on March 10, 2023 on the JSCN reserve, SK, by Carmen Margiotta]

However, FG9 was not the only participant who wished to use a community-made map. Other participants, like P7 and P8, did not bring maps of their own to the interviews, but they both referred to them during the conversations and offered to show them on a separate occasion. "I'm not very familiar with this map', said P7, "I've got a smaller map at home, just of the forest" (March 23, 2023). Lastly, P2 and P6 brought piles of maps that they had produced over the years working for the band's land and environment division, and they both showed more interest in basing the interviews off of their own material, rather than focusing on the more general map brought as a prompt. Indeed, when shifting the conversation to the maps that they had brought, both P2 and P6 talked more extensively, and remembered details that the prompt maps of Saskatchewan would have likely not been able to encourage.

4.3.3. Need to Give Feedback

Several participants, such as FG5, P4, P5, and P7, recalled taking part in similar exercises in the past, where community members were asked to fill out a map. "They came and did this", stated P7, "I don't remember who" (March 23, 2023).

Although many mentioned having previously done mapping exercises, the majority of the participants did not associate negative feelings with them. P4 was the only community member to vocally express his frustration in relation to having been involved in many mapping workshops before. When asked what he thought of participatory mapping as a method to learn about traditional land and practices, P4 stated:

> I have no idea because I did this so many times with different people, I did 'em with lawyers, I did 'em with logging people. I did them with, uh, I can't remember. I think I did like four of these mappings on our traditional area and I never heard anything back about it. Nothing. All I got was, oh, good job, [participant's name]. Thank you. Thank you for your time. That was it. So I don't even know if I'm helping or not, but it could be just a waste of my time. Your time. (March 23, 2023)

It thus appears clear, from P4's testimony, that his frustration was not directly connected to having taken part in several mapping studies, but to not having being informed on their outcomes. When asked what could be done to make his experience better, P4 said: "if I get feedback on what they are doing with these maps" (March 23, 2023).

4.3.4. Other

Other recommendations were shared by the participants when asked what they considered to be essential elements of a successful participatory mapping experience. These are:

- Involve the Elders, as advocated by P7 and P8, but also everyone else in the community – as added by P2.
- Earn the community's trust. Accustomed to mapping exercises with First Nations, P1 stressed that it is essential to follow a series of steps in order to be welcomed into the community, and to ensure that community members are comfortable enough to share what they know. He stated:

> It's not just a matter of advertising and, say, turn up and give me your information. You're gonna have to go through some protocols to gain the respect and the trust of the communities or the Elders. You're gonna want to build up that rapport, that trust, so you get the information. You're gonna need a community liaison. Somebody who's gonna do the work for you on the front lines. (March 6, 2023)

- Include Elders' stories in the final maps produced, as suggested by FG8.
- Share the research outcomes with the community members. FG1 proposed that a copy of the maps created and of the stories collected be displayed in the band office, the clinic, and any other "places where members meet".
- Ask community members to give a tour of the places of importance to them. FG3 stated: "if someone were to take you with knowledge of where they experienced hunting trips and the berry picking, you would probably get a lot of awesome stories" (March 23, 2023).
- Make use of different technologies. P2, for example, suggested using satellite imagery during the interviews, so as to facilitate the identification of places.
- And lastly, balance group and individual interviews. The Elders were pleased with having been interviewed in a group. "We're all thinking together" said FG8. FG5 shared that interacting with the other Elders helped him remember things about his past, and that the success of the focus group was to be attributed to the fact that all participants in the room were able to listen to everyone else's input. A personal observation during the individual interview with P7 would seem to support this view. Towards the end of the interview, when asked if he had anything else to share, P7 noticed a mark on the south edge of the map that

had not fully been erased from a previous interview. This sparked further conversation, as P7 remembered: "there's a place down here, some place north of Maple Creek. There's somebody that used to do some hunting in there" (March 23, 2023). On the other hand, however, P2 warned that, in his experience, focus groups may create conflict and imbalances where some participants do not speak out, and he thus recommends having one-on-one interviews too. He further explained that when he experiences conflict during focus groups, he finds it essential to document it.

5. Results Part 2: Expert Elicitation

Two experts were interviewed as part of this research. Dr. Merle Massie, who was interviewed on March 21, 2023, is a professional research associate with the Canadian Centre for Rural and Agricultural Health, and a historian by training. Currently based at the University of Saskatchewan, her research focuses on how people relate to place[2]. Steve DeRoy, interviewed on April 19, 2023, is an Anishinaabe mapping and GIS specialist from Manitoba who has built a successful career developing participatory mapping projects with Indigenous communities across Canada and beyond[3]. The choice to meet with Merle and Steve is directly related to the aims of this research: to understand JSCN's relationship with their territories, and to add to the extant knowledge on participatory mapping with Indigenous people.

5.1. Place-Based Histories – Interview with Merle Massie

Meeting with Merle was important to contextualise the work and the participants' testimonies in a broader historical and geographical setting. Author of the book *Forest Prairie Edge*, Merle was able to provide invaluable insights into land-use in the areas of Saskatchewan that hold most significance to James Smith Cree Nation members. Not only did the conversation with Merle help me frame my research in a more defined historical context, but it also helped shed light on the role that the unique landscape in which the JSCN exists plays in the community's relationship with territory.

5.1.1. Land-Use in a Transition Zone

Throughout her research, Merle has taken a close look at the ways in which the transition zone between prairies and forest in Saskatchewan has been used over time. In particular, she explained that every location within a 50-to-80-mile radius (80-to-130-kilometres) of Prince Albert can be considered part of an ecotone, defined by Merle as an area historically rich in trade, and where different communities would meet and exchange goods. People from northern areas, whose lifestyle depended on the forest, and bison-reliant groups from the plains in the south, "would meet and they would mingle", she explained, so much so that the area was known as *the meeting place*. She stated: "these were spaces where people from far away went to and met" (March 21, 2023).

[2] More on Merle Massie's work on her personal website at https://merlemassie.wordpress.com/about/
[3] More on Steve DeRoy on The Firelight Group webpage at https://firelight.ca/steven-deroy/

But the open culture of exchange, where different communities interacted, is not the only characteristic that makes ecotones fascinating. When asked what makes communities in ecotones particularly interesting to learn from, Merle illustrated that they tended to be technically and culturally stronger, and that they were more resilient, adaptable, and would more easily survive hardships. This was because "they are not tied to just one space, they can move across and derive their living across multiple landscapes and in multiple seasons" (March 21, 2023). She stated:

> I know of no Cree bands from the ecotone who derived their income, their living, or the way they move through the landscape, in only one way. […] James Smith Cree Nation is similar to a lot of the other Cree Nations within that ecotone in that they did have a thriving fish connection. They had a thriving bird connection. They had thriving connection to forest animals, which are completely different hunting styles. (March 21, 2023)

However, Merle added that the use of technology, modernisation and the legacy of assimilation along with residential schooling "has lashed people into a less flexible paradigm" (March 21, 2023). The case of Cumberland House Cree Nation serves as an excellent example of how local resilience of communities in ecotones has deteriorated over time, and how regaining traditional knowledge can help communities adapt to environmental changes. In 2005 and 2011, the community experienced severe floods, however "even though they had been thousands of years within that very landscape, had hundreds of years of knowledge of that landscape, […] and the Elders knew where the water was going to go […], they [municipality] evacuated Cumberland House in 2005", shared Merle. In 2011, during a second wave of major floods, the community instead was able to effectively use the recent memory of flood response, thus demonstrating greater adaptability than in 2005. In 2011, the community turned to the Elders, listened when they told where the water was going to go, and did not resort to evacuating. Time, assimilation into Western ways of knowing, Western science – including Western flood response – "created a massive gap in the local knowledge", a knowledge that for centuries had strengthened communities' adaptability. "As we're bringing it back", showed Merle, "we're seeing more of that resilience rise again" (March 21, 2023).

When asked if she would consider JSCN as an ecotone community, Merle stated: "Absolutely. You bet they are!" (March 21, 2023).

5.1.2. JSCN Historical Connection to the Territory

When talking about Cree bands that, like JSCN, lived in the transition zones of Saskatchewan, Merle described them as groups that would often migrate, and frequently move around different territories. This idea resonated with FG8's statement: "We're nomads" (March 10, 2023).

According to Merle, members of the JSCN have historically made extensive use of the nearby forests, and of the lakes connected to it. In particular, she argued that land-users from James Smith would cross the river, and travel northeast to what is now Tobin Lake – a manmade lake formed in the early 1960s – and northwest to Candle Lake and Montreal Lake, mentioned in several interviews with members of the JSCN. Merle explained that the community would use different spaces in the landscape for different practices, as well as depending on their needs, but commonly to hunt, trap beaver and muskrat, to fish, and to hunt birds. Land-users would move up and down the Saskatchewan River, explained Merle, "using the river as a highway". She stated: "We think of rivers as rivers. And Cree tended to think of them as highways until well into the 1900s" (March 21, 2023).

She went on to explain that James Smith's affiliation with Cumberland House and surrounding areas can be attributed to the existence of the Saskatchewan River, which served to connect communities "in a very essential way". Similarly, the Saskatchewan River would connect James Smith members with communities West of the river, such as Muskoday First Nation. But James Smith members, explained Merle, would also cross the landscape on land, with snowshoes or dog teams, and especially with the advent of horses.

Merle added that when people shifted to a way of life based on overland transportation, their movements changed. By the 1950s, she explained, the community had switched from depending on the river as a mode of water transport to more land-based transport reliant on cars, trucks, snowmobiles, etc. This would explain why, in the living memory of the study participants, farther areas like Hudson Bay were often brought up.

When asked if she knew of any movements directly West of where the JSCN reserve is today, Merle pointed out that the community is surrounded by some of the best farming land in Saskatchewan, and thus, to continue with their land-use practices throughout the 20th Century, community

members had to travel East to the "darker green areas" on the map, and to places like the Fort à la Corne forest.

5.1.3. "The Time Period Matters"

A major takeaway from the conversation with Merle concerns the importance of determining a clear and defined time period for this type of research. There are a number of external factors, such as the province's push for agriculture, or changes in the governance system – e.g., the province's decision to set trapping rights, establishing where land-users could go to trap after the 1930s – that would have affected the ways in which communities like the JSCN related to their land. Not only will having a set time frame strengthen the work and help make the research more feasible, but Merle also explained: "The more specific you are to time period and place, the more helpful you are going to be. Pick a time period that makes sense to the community" (March 21, 2023). She additionally suggested that any participatory project will have to primarily rely on the participants' living memory, thus making the last 50 – 70 years a sensible time frame for this project.

Along with establishing a clear time period to focus the research on, Merle also recommended being cautious with the use of the word *traditional*, as this usually refers to a time that precedes heavy government intervention. Whilst "long held", and "extensive family use" may be smart alternatives, Merle explained that the word "traditional" can still be used, as long as the time period considered is explicitly stated. "Be very specific that you're talking about a time period within recent memory" she stated, "and well within the time when the provincial government has a huge amount of sway and say in how people used the landscape" (March 21, 2023).

5.1.4. Commentary on Participatory Mapping

Lastly, Merle commented on the participatory mapping exercise. When asked if participatory mapping can help preserve traditional knowledge, she shared that:

> It is hugely important work because it supports and *mirrors back to the communities* what they already know. But it does in such a way that is preserved in different ways, and preserved by more people. What happens is that it gets written down and people read it, then they talk about it, and it gets both in the written memory and in the oral memory. People talk about it and share it and grow it. And so, whenever we can

> resurface these stories and give them back, then it feeds back into the culture, *it feeds back into the strength of the people* [emphases added]. (March 21, 2023)

5.2. Participatory Mapping with First Nations – Interview with Steve DeRoy

An Indigenous practitioner, founder of the Indigenous Mapping Workshop, and open to share his wisdom, Steve DeRoy was an essential addition to this research. The conversation with Steve, which took place after having completed the data collection, was an excellent opportunity to reflect on the work done and to find ways to maximise the potential of similar research projects in the future. Like with Merle, Steve's guidance was key to help me frame my research and this thesis in a way that will be most beneficial to the James Smith community.

5.2.1. Dealing with Mapping Fatigue

As a first step, I was interested in hearing Steve's take on how to deal with mapping fatigue when working with communities. I shared with him that several participants mentioned having taken part in similar mapping projects before, and that P4 expressed a feeling of frustration. In an episode for the Archaeology Podcast Network, Steve stated that Indigenous people are at the centre of many research projects, and that they are sometimes researched to death (Archaeology Podcast Network, 2021). In our interview, I asked him instead what his thoughts were on the fact that Indigenous people may sometimes be researched to exhaustion.

Steve explained that the feeling of frustration may be symptom of a negative research environment, where the research is carried out as an *extractive process*. In these instances, researchers go into the community, harvest the participants' knowledge, process and analyse it off site without returning any output back into the community. "Many times, the community doesn't actually see that [e.g., a final report]" said Steve. When asked what can be done to create a better research environment, Steve shared that maintaining a participatory approach where the research is driven and led by the community will result in less fatigue. Ultimately, Steve explained, the community should be able to access what the research has produced and choose how they wish to use those results. He stated:

> When I hear that a community is exhausted from research, I hear that they've let too many people in to do that kind of research, without really having any tangible outputs for the community to use in the future. (April 19, 2023)

Communities, he explained, need to be in the driver's seat, so that they can "really focus on the things that matter most to them and [so as to] enable them to be in a position to say, these are the things that really are important to us, and these are the ways in which we want to collect that information" (April 19, 2023). By passing the authority to the community, one can really change the research environment. However, he shared, the problem is that researchers seldom want to give up the power that comes with doing research, which is a key element when trying to break down the negative stereotypes of research with communities.

To create a more positive research environment, there are tangible steps that researchers can take. These are all part of the strong research design that, according to Steve, is essential when conducting participatory research projects.

5.2.2. The Need for a Strong Research Design

Steve was able to provide a series of concrete actions that can be taken to ensure that the research is conducted successfully and in a way that benefits the community. A carefully thought-through research structure will make or break the participatory project:

> [What's important] is the idea of how you structure your research from start to finish thinking about that engagement in a way that's meaningful, in a way that's inclusive, and in a way that actually empowers the community to be not just research subjects, but actually driving the research process start to finish. (April 19, 2023)

This section will illustrate some of the elements that Steve described as being conducive to a strong research structure and design.

Informed Engagement Across the Board

Sharing detailed information on the research process and goals is key to making sure that all community members are involved in a fruitful way, and in a way that will not lead to frustration and fatigue. This is also true for community-driven research. When contacted by someone from the community – e.g., the leadership – with a research request, the immediate next step should be to hold a meeting to present that research to the community. In a hypothetical scenario, Steve suggested saying something along the lines of: "Let's have a community meeting, so that everyone

hears that leadership wants this, and we'll invite everyone that you hope to hear from, to come participate in kind of an information meeting" (April 19, 2023)

It is essential that the community, and potential participants, are aware of the ways in which the information gained from the research will be used. Presenting the information in advance, and informing the community on the research that is taking place, will ease the process of "ensuring that all participants that later on will be interviewed have that informed consent" (April 19, 2023). This way, Steve explained, they will be prepared and able to engage during the interviews more meaningfully. He stated:

> You don't want to side-line or catch people off guard when they're engaging in these projects, you want them to have all the information they need to be able to meaningfully share their knowledge. (April 19, 2023)

An additional benefit to providing information on the research in advance lies in the fact that participants may be able to contribute to designing the best methods to conduct the research. "Why are you doing it this way?", Steve suggested that community members might ask, "I think we should be doing it this other way". The researcher will then be able to reflect the participants' views and refine their methods.

However, Steve stressed that this flow of information should not only happen during the setting up of a project, but it should instead continue throughout the research. He suggested inviting community members to a final meeting where the researcher can ask: "did we get it right?" and "are there things that we can do to adjust and improve on the research outputs?". This way, the community will be able to guide the research across all stages.

Set Up a Committee

Steve argued that establishing a research committee at the community level will provide the researcher with the guidance needed to successfully conduct the project. A committee – made up of a research director, a community liaison and community researchers – will, for example, ease up the process of informing the broader community on the nature of the research. According to Steve, the ideal committee should be representative of multiple families, and thus views, within the community.

Provide Training

"Build an army of researchers from the community" (April 19, 2023). Steve suggested that, if possible, trainings should be provided so that community members can actively engage in the research.

Talk to a Variety of People

Steve stressed that it is important to "celebrate the fact that there is a diversity of areas that the community was connected to" (April 19, 2023). A successful mapping project, Steve explained, will involve community members from different family groups, and with different ties to the territory. A good researcher will approach the project as a puzzle, where different pieces of land-use activity as sought to create a comprehensive picture that reflects the community in its diverse land uses. This also means ensuring a fair distribution of the community population, by involving everyone who goes out into the land. Steve suggested talking to men, women, Elders, and youth.

Later in the interview, when asked what he thought the role of younger community members should be in the research, he enthusiastically affirmed that young people should be involved in the research process as researchers. He shared an example from a recent mapping project he did in Manitoba, where a young woman from the community was trained and involved as a community researcher. He remembered that every participant was eager to engage and talk with her, and he observed that "she had a meaningful role because of the knowledge transfer that was happening during those interviews" (April 19, 2023). But her active presence, explained Steve, was not only conducive to a positive and more fruitful research environment; that is, the young woman reported that engaging in those conversations helped her learn from the Elders in the community about the places that meant most to the community. "It was this opportunity to pass the knowledge down" and – Steve recalled – the young researcher's presence and involvement encouraged the Elders and all study participants to return for follow-up interviews. That way, Steve observed, they were able to turn a potentially negative research environment into a positive and inclusive one.

Embrace the Ongoing Process

This type of research works better if it is not done in one shot, Steve explained. In his approach, he sees all of his projects as an ongoing process, where there is space for new information and additional knowledge to be added when needed. Not only does this approach make the research

more easily achievable, but it also contributes to creating a positive research environment, where participants are shown the results as the work progresses, and they have the possibility to continue contributing whilst already being familiar with the research and the researchers. It's about building trust with the community, Steve explained, "people see that there's progress happening, and that they're not just dumping their knowledge into a black box" (April 19, 2023).

5.2.3. The Use of Maps

> "Maps can play both a positive and a negative role
> in terms of articulating and demarcating territories."
> Steve DeRoy, (April 19, 2023)

Steve shared that when First Nations approach him saying that they wish to map out their traditional territories, he normally pushes back and warns the community of the potentially negative impacts of maps. He explained that it is the government of Canada's responsibility to respect the signed Treaties, which allow First Nations to use their traditional territories freely. In the case of the JSCN, that is the Treaty 6 Territory. However, "that's where the boundaries and those lines become really important", he said, "because I'm sure that the government of Saskatchewan, or the government of Canada, would love to see that territory be as small as possible" (April 19, 2023). Thus, maps may have the opposite effect, creating ground for the government to take land away from First Nations.

It is thus essential that the aims of a research project are framed and articulated in a clear way that will not further marginalise the community of interest. Learning more about my research project, Steve pointed out that my research is more concerned with the community's land-use than it is with the demarcation of the James Smith traditional territories. This is an important distinction that needs to be made clear. In any participatory mapping project, "deciding how the information is going to be used will determine the methodology that will be applied" (April 19, 2023). If a community needs to document and map their land-use practices for a legal dispute, having a detailed research methodology that is carried out systematically will be crucial to be able to withstand the rigor of a court-like setting. Steve further explained that in this case, the rigorous methodology will need to be applied consistently across a set of hundreds of participants. If, instead, the mapping project is done

to document a community's story with the land, then the methodology will be less rigorous and likely more focused on the participants' narratives.

5.2.4. The Use of the Term "Traditional"

Just like Merle, when discussing present and past land-use in First Nations, Steve shared that he avoids the use of the word "traditional". He explained that when researching current land-use in Indigenous communities, he always frames his work within people's lifetimes. And thus, if an Elder tells a story of land use from childhood, and goes on to explain that that land is still being used today, that can demonstrate over 50 years of land-use activities, within the participant's lifetime.

> Would I call it traditional? Well, I don't know if I'd call it traditional. I'd call it a way of life. It's just life. How we frame things to be traditional, that's kind of a Eurocentric way of minimising Indigenous connections to place and space. (April 19, 2023)

He further observed that the terminology for this kind of research has shifted. Using the example of a hypothetical research project with his home community in Manitoba, he explained that he would refer to what was once known as "traditional land use studies" simply as "Anishinaabe knowledge and land use study". Positioning himself as a potential participant in that study, he stated that he would call it *knowledge and land use study* "because it's based on my experiences, that longstanding connection to place and space, and my ongoing use of that" (April 19, 2023). Steve recommended being deliberate and deliberately describing what it is that is being studied.

5.2.5. Steve's Ultimate Advice

When asked what he thought would be the best way to give back to the community, Steve said:

> I would suggest coming up with a good research methodology that could be applied consistently. You leave that and you leave the tools for the community to say, okay we've got all the pieces of the puzzle that we need to carry out this research. […] Coming up with the structure for how they might create a positive research environment, that would be a great legacy to leave. (April 19, 2023)

6. Discussion

This study's findings reinforced what has already been reported in the literature presented in Chapter 2. Participants and experts additionally provided useful insights and encouraged reflections which have implications for the current literary and practical understanding of human-nature relationships and participatory mapping in Indigenous communities. These are discussed here.

6.1. JSCN Land Use

The literature presented in Chapter 2 revealed that Indigenous peoples have complex relationships with the land. These relationships are informed by a deeply rooted respect for nature. The participants in this study verified this. Michell *et al* (2021) illustrated how in First Nation worldviews, all elements in nature are interconnected and become compromised when one is endangered. This sentiment resonates with the participants' descriptions of Fort à la Corne, where the diamond mine operated by Shore Gold has had devastating effects on the local ecosystem as a whole. P3, for example, explained that by disturbing the animals in the forest, the mining operation affected the growth of berries too. Similarly, the idea that Indigenous people feel a sense of personal and collective responsibility towards nature is reflected in FG9 words "we are stewards of the land", and through the palpable guilt in his testimony when he remembered not having sued local industries, something he wished he had done not only in quality of Chief, but also as member of a community whose people were growing sick from consuming contaminated fish.

The communal aspect of land-use, extensively discussed in the literature, applies to the JSCN context. The participants' stories from the land were not stories of individuals working on their own: instead, they spoke of teamwork, shared responsibilities, and community values. Nature, for JSCN, is everyone's responsibility, both in the sense that everyone needs to care for it, but also meaning that every member in the community has a role when out on the land. P3, for example, recalled that growing up, while the men would go out hunting and collecting wood, the women in her family would gather berries and set up camp, and that she and other children were given minor, but still important, responsibilities, and were to be supervised by the older kids in the family. P3's testimony touches on issues of gender division, where men and women tended to separate needs. However, whilst Anthias' work (2019) with the Indigenous peoples of Bolivia brought to light gender

hierarchies significant enough to compromise the success of the participatory mapping project, JS community members spoke of separate gender roles in a way that appeared harmonious and flexible.

As seen in the literature, First Nations understand nature in various terms: as a teacher, a relative, and a spiritual entity. The educational quality of the land is echoed in P3's stories from her youth, when – as she recalls – her father would take her and her sibling out on the land to keep them out of trouble. P3 additionally remembered how she and her sibling would learn important life lessons (e.g., good behaviour) as they experienced everyday life in nature. The idea that nature can serve as a teacher still holds strong in the collective mind of the JSCN, as more children and young community members are being taken out into the land to camp, hunt, and fish.

An inclination and ethic for conservation and sustainability, similar to the one observed by Michell *et al* in their work (2021) with other Cree Nations in Saskatchewan, was found in the participants' accounts of land-use. Additionally speaking for the community value inherent in land-use, several community members remembered having always shared their catches and preys with other families in the community. P7, in particular, recalled than when there was an abundance of rabbits being caught, hunters and trappers would often gift what they did not need to other people.

Lastly, Michell *et al*'s note (2021) on the fact the living off the land was hard work was openly addressed by P3 when she said: "we did that [living off the land] so easily. It was hard work, but it was easy". That living off the land was far from an idyllic and utopian reality became apparent in the participants' stories, where land-users were described as having to walk miles every day, rise early to go hunting, and they would often get hurt. P6 remembered when his grandfather "chopped himself on the foot one time, was bleeding and he had to come back while he was on a horse and a sleigh. He lived, but barely, I guess he lost a lot of blood at that time" (March 23, 2023).

6.1.1. Changes to Land-Use

An important aspect of JS community members' relationship with the land is their firm rejection of any notion of nature being used for blind profit. Instead, much like the Elders in Datta and Marion's study (2021), the participants from JS condemned the exploitation of places like Fort à la Corne guided by greediness. In the words of P4: "we can pray and ask for our White brothers to smarten

up. But will they really? You know, everything is about money. Money, money, money, money. They say that's what makes the world go around. But really, it's gonna make it stop" (March 23, 2023).

The effects of colonisation are evident in this study's context. Aside from P3's comment on the boundaries of the reserve, "that's what we were given to go hunt and gather from the government" (March 23, 2023), which underlines a sense of limitation imposed by colonisation and the reserve system, the participants' testimonies do not address land-use changes prior to the 1960s. However, it becomes apparent that the lingering legacies of colonisation have affected the community's practices in the last fifty to seventy years. From unjust government intervention, to polluting industries and farming operations in and around the JSCN reserve, environmental racism – as described by Collins and Murtha (2009) – is a reality for members of the JSCN. Similarly, the study findings are in line with the trend highlighted in the literature that sees Indigenous peoples continuously being left out of meaningful decision-making processes when it comes to the land. The Elders in the focus group lamented not having been consulted when land was being sold, and P2 shared that the community was left behind when the mining operations started in Fort à la Corne. With future development projects impending, as described by the informants, the fear of finding themselves once again at the short end of the stick (an expression used by Steve DeRoy during our conversation) is strong in many of the participants.

A positive note in the participants' account of changes observed in the land is that – in line with Corntassel's idea (2020) that all Indigenous people are in a daily struggle for resurgence – JSCN too take great pride in re-incorporating traditional land-based knowledge into their daily lives. P4 and P5, for example, spoke with enthusiasm about how they do not purchase meat from the store, but only rely on wild meat that they personally hunt, which – they explain – is also healthier for their family.

Loss of IEK

As shown by the literature, with colonisation and imposed changes to land-use comes the loss of local ways of knowing. Robinson *et al*'s (2016) idea of usable knowledge is perceived in similar terms by members of the JSCN. The participants in this study spoke of their land-users' knowledge as incredibly valuable, and many shared the positive impacts that this could have for sustainability. P3, for example, stressed that by going back to the old ways, younger community members will re-learn

how to live off the land, and they will no longer need to depend on stores as their main food source. FG9 was particularly vocal on this issue, as he affirmed:

> When the environmental issues come along, who are they gonna come to? They're gonna come to the First Nations first, when they have a lot of problems. They're gonna come to the spiritual people that know what they're talking about on the environment. That's where they're gonna come when they start hitting rock bottom. You watch. They're gonna come to us. (March 10, 2023)

However, the same anxiety around the loss of local knowledge expressed by the Elders in other studies in the literature was found amongst JSCN community members. This ranged from more generic concerns regarding the loss of traditional ways, as shared by FG5 and other Elders, to more targeted fear regarding the loss of certain aspects of land-based knowledge (e.g., P6's concern that his father was one of the last people in the community to know how to locate traditional medicine). All participants, and especially the Elders, had plans to pass on their knowledge to the youth in the community – from organising educational camps, to photographing and filming places of importance. The Elders, in particular, asked that the maps resulting from this study be displayed in the community's school and band office, so as to become a resource for everyone in the community to learn from. A moment of personal reflection came two weeks after the Elders circle took place, when the community liaison informed me of the passing of one of the Elders who had taken part in the focus group. JS Elders' wish to pass on their knowledge is an issue of the uttermost urgency. As highlighted by Michell *et al* (2021), First Nations see Elders as living libraries, and with their passing, entire archives of invaluable knowledge are lost.

The literature additionally showed that the loss of IEK passes directly through the loss of Indigenous languages. This too was verified by the findings in this study. Even though none of the study participant were fluent in Cree, and the Elders themselves recommended I speak to someone older to learn about it, they all spoke highly of the importance of bringing traditional language back into the community. Cree, for the informants in this study, was very much juxtaposed to traditional knowledge, in the sense that it was understood as an invaluable resource to be preserved before its irreversible disappearance from the community.

One final note must be made on the literary controversy around the use of the term "traditional" in relation to land-based knowledge of Indigenous peoples. First, the discomfort around the use of the word seems to extend to practice, as both the experts interviewed in this study were hesitant to use it. However, what my findings show is that the study participants seemed to not only be comfortable with the word, but they also took pride in using it. When asked if she would consider the land-use practices that she was describing as traditional, P3 said: "Oh yeah. This is tradition. This is hardcore tradition. I miss that. There was such a great pride in that" (March 23, 2023). This may support and reinforce Houde's idea that some Indigenous people find strength in positioning their knowledge within the realm of traditionality.

6.2. Participatory Mapping

The second research question of this study is concerned with the degree to which participatory mapping can be a relevant research method for land-use studies. My experience working with the JSCN has shown that, by incorporating the community's feedback, and by actively engaging with the participants throughout the entire process, participatory mapping can function as a powerful tool.

In line with the literature, the experience with the JSCN shows that using maps as boundary objects encouraged discussion and it helped create a relaxed atmosphere conducive to storytelling. On the one hand, FG9 was pleased with the ways the Elders were actively engaged in the conversation, and on the other, I reflected on the differences between in-person interviews and the interviews held online with P1 and P8. In particular, whilst it is undeniable that my online engagement with P1 and P8 came with its own challenges (e.g., greater perceived distance and unstable connection), it soon became apparent that the lack of a map to write on and use as a reference significantly slowed down the conversations and reduced the potential for a meaningful exchange.

Maps, the literature shows, are not merely a technical process, but a means to learn about the lived experiences of the participants. I experienced this first-hand, as I witnessed the participants open up and get comfortable sharing stories as they engaged with the map that was put in front of them. For this reason, as shown by the literature and later confirmed by Steve DeRoy, participatory mapping is a process whose goal is to produce living documents that must continue to be enriched as new information comes in. Not only did I witness this during the workshops, as the Elders were eager to add to the map shared by FG9 on trapping sites in Hudson Bay, but it was also confirmed by one of

the participants' testimonies. More specifically, P2 shared that for every one of the participatory mapping projects that he is involved in, he makes sure to go back to the map produced and continues to add to its database as new knowledge is acquired.

While participatory mapping is framed positively and has been shown to encourage dialogue and create a fruitful research environment in the context of the JSCN, one of the participants in this study did confirm a shortcoming of the practice as highlighted in the literature. Robinson *et al* (2016), whilst advocating for its positive traits, pointed out that participatory mapping does not always result in a better inclusion of Indigenous voices in decision making. In the context of this study, P2 shared that, even though maps can help show the community's connection to territory, a sense of frustration comes from knowing that development projects will get approved "not matter what" by the province.

One important aspect of participatory mapping exposed by the literature could not be verified due to the design of this study's methodology. Robinson *et al* (2016), raised their concern that further research is needed in order to understand how to manage conflicting knowledge claims that may hinder the success of participatory mapping workshops. The focus group in this study showed two things: (1) the Elders shared that they enjoyed "thinking together" and learning about each other's views on the land, and (2) when minor conflict arose as the participants tried to establish whether or not jackfish used to be fished in the past, this was simply brushed over and it did not appear to cause discontent in any of the participants or disrupt the conversation. However, it is important to note that, as illustrated in Chapter 3, the methodology of this study required that the community liaison selected the participants for the focus group. As explained by my supervisor, it is likely that the community liaison brought together Elders that he knew would not be faction-inducing or cause argument in the room on the day, both to support successful research activities, and to protect Elders who were invited from being triggered (Dr. Lori Bradford, personal conversation, April 2023). Thus, my contribution to this debate is limited.

6.2.1. In Contrast with the Literature

The literature has shown that Western cartography is not equipped to represent Indigenous peoples' complex understandings of nature and space. In particular, several researchers have argued that tools like GIS are not compatible with Indigenous knowledge systems, to the point that Fraser Taylor

(2021) asserts that the most sophisticated forms of cartography are not the best option when working with Indigenous groups. I argue that whilst sophisticated technologies may not be the most appropriate in some contexts, this should not be made into a blank statement to be applied to all Indigenous communities. Indeed, participants from the JSCN were the first to use advanced technologies to produce their own maps, and when asked what could be done better, P2 and P6 suggested aiming even higher with satellite imagery and using LiDAR (light detection and ranging) technologies or laser scanning to create maps. Sophisticated technologies may not always be the best choice, but this should not limit communities that wish to use what is best available on the market.

This reductionist view reevoked memories of the legacies of early anthropology, which saw Indigenous people – in line with the *noble savage* trope – as static depositaries of the past, and as fundamentally separate from technologies and *sophisticated* (Western) modernity. When reflecting on this facet of the literature on participatory mapping while collecting data with members of the JSCN, I could not help but smile thinking of a famous cartoon from Gary Larson's "The Far Side" series, which depicts three pan-Indigenous men rushing to hide the modern electronics in their home so as present themselves "authentically" to the anthropologists approaching (see Appendix D).

As for the applicability of GIS to my study context, I would not go as far as to say that it is not compatible. Whilst I did have to use personalised icons to better represent the practices relevant to JS, this was not an insurmountable obstacle, but rather a simple extra step that would guarantee fair representation. In light of this project, I still value GIS as a great tool that allows enough flexibility to be applied in different contexts. Andrew Dowding, a collaborator of Steve DeRoy's, and the Leader of Australia's Indigenous Mapping Workshop, has been building customised Google Maps icons that are representative of Aboriginal people's worldviews (Google Earth, 2019). Andrew Dowding and Steve DeRoy's work is the ultimate proof that GIS by Indigenous people and for Indigenous people works.

Similarly, I see Bryan's statement (2011) that participatory mapping should depart from only serving land claims, and explore other ways to benefit Indigenous peoples, as somewhat paternalistic and limiting. This study's focus stemmed from a need within the JSCN to produce materials to support land claims, but it ultimately resulted in a much more comprehensive account of the community's relationship with the land, as well as a commentary on the practice of participatory mapping. What I

argue is that the two things are not mutually exclusive. The literature has shown that participatory mapping is more than a technical process, and that it reveals much about the lives of the participants – thus, a participatory mapping project could both satisfy the common land claims needs of Indigenous communities, whilst at the same time allowing researchers to explore other interests that will ultimately also benefit the community. Interestingly, Bryan's suggestion is in stark contrast with Steve DeRoy's idea that researchers must be willing to let go of the power that comes with research to fully open up to the needs of the community and create a positive research environment.

6.2.2. Recommendations for the JSCN

As proposed by Steve DeRoy, I will conclude this chapter with two suggestions, based on my research findings, that might help the JS community create a positive research environment in future research and mapping projects. A disclaimer must be made: only having visited the reserve three times, and having only collaborated with JSCN members for four months, I do not possess a strong understanding of the many dynamics that make up community life in the JSCN. Thus, whilst these suggestions may need to be adapted to the context depending on the community's modus operandi, I do hope to be of inspiration and contribute to creating more positive research in the JSCN.

1) **To ensure informed engagement across the board, I would recommend widely publicising future research projects across the community.**

The literature has emphasised that participatory mapping projects have only ensured participation up to a certain point, and that community members tend not to be involved in the designing and executing of the research. Because this study was initiated and partly managed by the community, I did not run into the same issue. However, I did feel that some of that meaningful participation was lost along the way as I interviewed people who were not aware of this research. As suggested by Steve, this can be overcome by holding community meetings where members are informed about the proposed projects. However, this may not be as effective in a community of the size of JSCN, and which is at the centre of multiple studies running alongside (at the time of my study, I was aware of at least one more research group working with the JSCN). Instead, I suggest:

- Having graduate students who, like me, collaborate in these projects, create a 1-minute video providing an overview of the research, and to be distributed across the community and with potential participants prior to the beginning of the research activities.

- Disseminating information on the research via social media. Two groups on Facebook.com could serve this purpose. These are: (1) James Smith Cree Nation Message Board/Events Band Members Only (https://www.facebook.com/groups/317152339431561/) and James Smith Bulletin/Message Board (https://www.facebook.com/groups/3180756425305795/).
- Displaying posters summarising the research in the band office, the clinic, and the schools, which were described by the participants as the most frequented places on reserve.

By meaningfully informing the community, as explained by Steve, participants may voluntarily step forward, and thus feel that they are more meaningfully contributing. Additionally, this way, members of the community will more easily be able to have a saying in the methodology to adopt.

2) **To encourage knowledge exchange and create more positive research environments, I would recommend inviting young community members to participate in research projects.**

On the one hand, the literature emphasises the role that youth has on the maintenance of traditional knowledge, and in participatory mapping projects. On the other, Steve enthusiastically spoke of the benefits of inviting young people as active researchers in participatory mapping projects. JS, where community members are eager to teach and pass down knowledge to the youth – despite a mild frustration for children and teenagers' abuse of technology – shows fertile ground for the inclusion of youth in participatory mapping. As expressed by Steve, training young community members and having them lead mapping workshops creates a positive environment where knowledge flows more easily. To resolve conflict during mapping workshops, Robinson *et al* (2016) suggest having an Elder mediate the discussion. Given the benefits that seem to come with involving the youth, I wonder if the presence of a young community member would help ease down disagreements and regulate the discussion. Perhaps, involving a young community member may shift the focus from conversing amongst peers – and potentially needing to assert one's power – to joining forces to positively teach and pass down knowledge to the youth. Although I cannot comment on the issue of managing conflicting knowledge, I do see this as something worth exploring. The youth, along with their connection to the future of the community, may be the key to positive participatory mapping and research projects in Indigenous spaces.

7. Conclusion

This thesis set out to document the territories that hold most significance for members of the James Smith Cree Nation. Whilst the community already had a general understanding of how and to what extent the Fort à la Corne Provincial Forest was used by JSCN land-users, this research's findings satisfied the need brought forward by JS Chief and Council members during the 2022 meeting with Dr. Bradford and Dr. Bharadwaj, and it began to trace the community's connection to territories outside of Fort à la Corne. As seen in the literature, mapping is a continuous process that must remain open for further review (Robinson *et al*, 2016). As such, while these findings should continue to be enriched by engaging in conversations with other members of the community, they offer a foundation to build further research off of. This research's findings show that there is a sense of entitlement and connection around the geographic places identified by the participants, and thus they may be used to support land claims. This research additionally allowed space for community members to voice their frustration towards industries that continue to encroach on their land. As explained by Steve DeRoy, these findings may not be able to withstand the rigor of a court-like setting, but they help increase awareness of JSCN experiences within their territory by privileging community members' voices, and they may serve as a basis for future attempts to halt development projects.

To the ongoing debates surrounding participatory mapping, this research contributes in a number of ways. First and foremost, this research showed that participatory mapping is a promising research method for land-use studies. As highlighted by the literature, the strength of this method lies in its ability to create a relaxed atmosphere and a positive research environment (Robinson *et al*, 2016). The participants in this study responded positively to the mapping experience, and they shared life stories and anecdotes with enthusiasm. However, this research's findings support a fundamental weakness of participatory mapping identified in the literature and in practice. Both Steve DeRoy and researchers in the literature (Chapin *et al*, 2005; Fraser Taylor, 2021) stressed the importance of meaningfully engaging with participants throughout the entire research process – from start to finish. Meaningful engagement, where participants have a saying in the project design, and are informed on the outcomes of the mapping project, will avoid creating the same feeling of frustration found in P4, a participant in this study who expressed his discontent for not having been informed on the outcomes of the many mapping workshops he has been involved in. Lastly, this research, whose findings revealed some of the participants' enthusiasm for advanced mapping technologies,

departs from the body of literature that sees *sophisticated* (Fraser Taylor, 2021) mapping tools like GIS as not appropriate in Indigenous contexts. Ultimately, this research shows that, if done thoughtfully and in a way that meaningfully centres Indigenous voices, participatory mapping can help uncover much about Indigenous land-based knowledge, which "is critical to the survival and long-term sustainability of the planet" (Michell, 2005: 34).

7.1. Recommendations for Future Research and Practice

Future research interested in issues like the ones presented in this thesis may benefit from adjusting their research methodology to help bring to light additional relevant information. In particular, I recommend that future researchers consult archives, engage with youth, and experience the land first-hand with land-users. Furthermore, new research is needed to understand how participatory mapping can successfully influence environmental policy.

Include Archival Work

To gain a more comprehensive understanding of JSCN – as well as other communities' movements that span across time, and to go beyond what living community members can remember, exploring archives may be essential. The *Provincial Archives of Saskatchewan* and *Our Legacy* are excellent examples of archives that could be used for similar research in Saskatchewan.

Involve Youth

Involving young community members, both as active researchers in research projects, or simply as informants, may allow future research to access a broader spectrum of knowledge in the community. This idea was supported both by the participants and by one of the experts consulted for this study.

Get Out on the Land

Future research focused on JSCN, and other Indigenous communities' relationship with the land, should strive to include transect walks as part of their methodology. As suggested by some participants in this study, walking on the land with land-users will create the right setting to hear stories and learn about practices that static mapping would otherwise not reveal. This is further supported by the literature. As explained by Charles (2022: 35), "Cree stories are best learned on the land with knowledgeable Elders engaging in practical day-to-day activities".

Explore Participatory Mapping for Policy Action

The literature has made apparent that further research is needed to understand how participatory mapping projects can result in more meaningful inclusion of Indigenous voices in environmental management. The idea that maps – regardless of how collaborative they are – may not succeed in halting development projects resonated with some of the participants in this study. Thus, new research on the practical applications of participatory mapping is crucial.

7.2. Steps Forward

Part of a pre-existing research group, my research does not end here. The immediate next step will be to produce visuals based on my findings to give back to the James Smith Cree Nation community. Currently, Dr. Bradford at the University of Saskatchewan is writing proposals for the creation of physical and virtual displays of the study results, and for a storytelling video project based on this thesis work. In the meantime, I am personally creating a video presentation and slide show of this thesis to send to the community for their records and to share with focus group and individual participants. The lessons learned in this experience will also inform my future work as a researcher – I am more attuned to the need for social and emotional intelligence, the importance of intellectual exchanges with methodological experts early in research processes, and to weaving different knowledge systems together following the Six R's of research.

As I complete this thesis, at the end of May 2023, Saskatchewan burns. Climate change across the province affects all, including Indigenous communities. Now more than ever, values of respect and care for the land are pivotal.

Bibliography

Anderson, Robert B., Leo Paul Dana, and Teresa E. Dana. 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.

Anthias, Penelope. 2019. "Ambivalent Cartographies: Exploring the Legacies of Indigenous Land Titling through Participatory Mapping." *Critique of Anthropology* 39 (2): 222–42. https://doi.org/10.1177/0308275x19842920.

Archaeology Podcast Network. 2021. "Indigenous Mapping: The One Holding the Pen Tells the Story - HeVo 56." #archpodnet. 2021. https://www.archaeologypodcastnetwork.com/hq-downloads/hevo-56.

Arias-Arévalo, Paola, Erik Gómez-Baggethun, Berta Martín-López, and Mario Pérez-Rincón. 2018. "Widening the Evaluative Space for Ecosystem Services: A Taxonomy of Plural Values and Valuation Methods." *Environmental Values* 27 (1): 29–53. https://doi.org/10.3197/096327118x15144698637513.

Aswani, Shankar, Anne Lemahieu, and Warwick H. H. Sauer. 2018. "Global Trends of Local Ecological Knowledge and Future Implications." *PloS One* 13 (4): e0195440. https://doi.org/10.1371/journal.pone.0195440.

Atleo, Clifford, and Jonathan Boron. 2022. "Land Is Life: Indigenous Relationships to Territory and Navigating Settler Colonial Property Regimes in Canada." *Land* 11 (5): 609. https://doi.org/10.3390/land11050609.

Bakker, Peter. 1996. "'When the Stories Disappear, Our People Will Disappear': Notes on Language and Contemporary Literature of the Saskatchewan Plains Cree and Métis." *Studies in American Indian Literatures* 8 (4): 30–45. http://www.jstor.org/stable/20739369.

Ballard, Myrle, Juliana Coughlin, and Donna Martin. 2020. "Reconciling with Minoaywin: First Nations Elders' Advice to Promote Healing from Forced Displacement." *La Revue Canadienne Du Vieillissement [Canadian Journal on Aging]* 39 (2): 169–77. https://doi.org/10.1017/s0714980819000412.

Bharadwaj, Lalita. 2014. "A Framework for Building Research Partnerships with First Nations Communities." *Environmental Health Insights* 8: 15–25. https://doi.org/10.4137/EHI.S10869.

Brodnig, Gernot, and Viktor Mayer-Schönberger. 2000. "Bridging the Gap: The Role of Spatial Information Technologies in the Integration of Traditional Environmental Knowledge and Western Science." *The Electronic Journal of Information Systems in Developing Countries* 1 (1): 1–15. https://doi.org/10.1002/j.1681-4835.2000.tb00001.x.

Bryan, Joe. 2011. "Walking the Line: Participatory Mapping, Indigenous Rights, and Neoliberalism." *Geoforum; Journal of Physical, Human, and Regional Geosciences* 42 (1): 40–50. https://doi.org/10.1016/j.geoforum.2010.09.001.

Chapin, Mac, Zachary Lamb, and Bill Threlkeld. 2005. "Mapping Indigenous Lands." *Annual Review of Anthropology* 34 (1): 619–38. https://doi.org/10.1146/annurev.anthro.34.081804.120429.

Charles, Blake. 2022. "Oral Traditions of the Woodland Cree (Nihithawak) in Northern Saskatchewan: Links to Cultural Identity, Ways of Knowing, Language Revitalization, and Connections to the Land." *The Northern Review* 53 (53): 23–35. https://doi.org/10.22584/nr53.2022.002.

Collins, Lynda M., and Meghan Murtha. 2009. "Indigenous Environmental Rights in Canada: The Right to Conservation Implicit in Treaty and Aboriginal Rights to Hunt, Fish and Trap." *Alta. L. Rev., 47, p.959*. https://heinonline.org/HOL/Page?handle=hein.journals/alblr47&div=39&g_sent=1&casa_token=&collection=journals.

Corntassel, Jeff. 2020. "Restorying Indigenous Landscapes: Community Regeneration and Resurgence." In *Plants, People, and Places: The Roles of Ethnobotany and Ethnoecology in Indigenous Peoples' Land Rights in Canada and Beyond*, edited by Nancy J. Turner. Montréal, QC, Canada: McGill-Queen's University Press. https://doi.org/10.2307/j.ctv153k6x6.

Creswell, J. W., & Creswell, J. D. 2017. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage publications.

Datta, Ranjan, and William P. Marion. 2021. "Ongoing Colonization and Indigenous Environmental Heritage Rights: A Learning Experience with Cree First Nation Communities, Saskatchewan, Canada." *Heritage* 4 (3): 1388–99. https://doi.org/10.3390/heritage4030076.

de Robert, Pascale, Jean-François Faure, Anne-Elisabeth Laques, and The Inhabitants of Moikarakô. 2006. "The Power of Maps: Cartography with Indigenous People in the Brazilian Amazon." In *Mapping for Change: Practice, Technologies and Communication*. https://cgspace.cgiar.org/bitstream/handle/10568/76889/14507IIED.pdf?sequenc#page=75.

Ecotrust Canada. 2015. "Traditional Land-Use and Occupancy Studies and Cumulative Effects Assessments (2015)." Ecotrust Canada. 2015. https://ecotrust.ca/latest/research/traditional-land-use-and-occupancy-studies-and-cumulative-effects-assessments-2015/.

Eisner, Wendy R., Jessica Jelacic, Chris J. Cuomo, Changjoo Kim, Kenneth M. Hinkel, and Dorin Del Alba. 2012. "Producing an Indigenous Knowledge Web GIS for Arctic Alaska Communities: Challenges, Successes, and Lessons Learned: Indigenous Knowledge Web GIS for Arctic Alaska." *Transactions in GIS: TG* 16 (1): 17–37. https://doi.org/10.1111/j.1467-9671.2011.01291.x.

Fraser Taylor, D. R. 2021. "Mapping with Indigenous Peoples in Canada." In *Digital Mapping and Indigenous America*. Routledge.

Google Earth [@googleearth]. 2019. "Creating Map Icons That Reflect the Culture and Traditions of Indigenous Australians." 2019. https://youtu.be/gz2r0_FQEYs.

Grant, Anne D., Katherine Swan, Ke Wu, Ruth Plenty Sweetgrass-She Kills, Salena Hill, and Amy Kinch. 2021. "A Research Publication and Grant Preparation Program for Native American Faculty in STEM: Implementation of the Six R's Indigenous Framework." *Frontiers in Psychology* 12: 734290. https://doi.org/10.3389/fpsyg.2021.734290.

Houde, Nicolas. 2007. "The Six Faces of Traditional Ecological Knowledge: Challenges and Opportunities for Canadian Co-Management Arrangements." *Ecology and Society: A Journal of Integrative Science for Resilience and Sustainability* 12 (2). https://doi.org/10.5751/es-02270-120234.

Ingram, Rebekah R. 2021. "Indigenous Place Names as Visualizations of Indigenous Knowledge." In *Digital Mapping and Indigenous America*. Routledge.

"James Smith Band." 2023. Jamessmithcreenation.com. 2023. http://www.jamessmithcreenation.com/james_smith/.

Krech, Shepard. 2005. "Reflections on Conservation, Sustainability, and Environmentalism in Indigenous North America." *American Anthropologist* 107 (1): 78–86. https://doi.org/10.1525/aa.2005.107.1.078.

Lagesen, Vivian Anette. 2010. "The Importance of Boundary Objects in Transcultural Interviewing." *European Journal of Women s Studies* 17 (2): 125–42. https://doi.org/10.1177/1350506809359571.

Latimer, Kendall. 2023. "Myles Sanderson Was Violent on James Smith Cree Nation Days before Stabbing Massacre Began: RCMP." *CBC News*, 2023. https://www.cbc.ca/news/canada/saskatchewan/sask-rcmp-timeline-james-smith-cree-nation-myles-sanderson-1.6823147.

Liu, Steven. 2021. "The Haunting Past of Anthropology: Why It Is Important for the Present." Anthropolitan. 2021. https://anthropolitan.org/2021/02/12/anthropology-and-its-importance/.

McCarter, Joe, Michael C. Gavin, Sue Baereleo, and Mark Love. 2014. "The Challenges of Maintaining Indigenous Ecological Knowledge." *Ecology and Society: A Journal of Integrative Science for Resilience and Sustainability* 19 (3). https://doi.org/10.5751/es-06741-190339.

McLeod, Neal. 2000. "Plains Cree Identity: Borderlands, Ambiguous Genealogies and Narrative Irony." *The Canadian Journal of Native Studies, 20(2), Pp.437-454*. https://cjns.brandonu.ca/wp-content/uploads/20-2-cjnsv20no1_pg437-454.pdf.

Michell, Herman. 2005. "Nēhîthâwâk of Reindeer Lake, Canada: Worldview, Epistemology and Relationships with the Natural World." *The Australian Journal of Indigenous Education, 34 (1): 33–43*. https://doi.org/10.1017/s132601110000394x.

Michell, Herman, Brian Hardlotte, and Robin Mcleod. 2021. "Traditional Ecological Knowledge (TEK) of the Woodlands Cree and Denesuline Peoples of Northern Saskatchewan, Canada: The Land as Teacher and Healer." Journalindigenouswellbeing.Co.Nz. 2021. https://journalindigenouswellbeing.co.nz/media/2022/01/145.159.Traditional-Ecological-Knowledge-TEK-of-the-Woodlands-Cree-and-Denesuline-Peoples-of-northern-Saskatchewan-Canada-The-land-as-teacher-and-healer.pdf.

O'Neill, John, Alan Holland, and Andrew Light. 2008. *Environmental Values*. London, England: Routledge. https://doi.org/10.4324/9780203495452.

Pittman, Jeremy. 2010. "Nêhiyawak (Cree) and Climate Change in Saskatchewan: Insights from the James Smith and Shoal Lake First Nations." Cloudfront.net. 2010. https://d1wqtxts1xzle7.cloudfront.net/37309005/Pittman_2010-libre.pdf?1429064531=&response-content-disposition=inline%3B+filename%3DNehiyawak_Cree_and_Climate_Change_in_Sas.pdf&Expires=1684875456&Signature=R4TjWlj59uvdtjsH7PVwYi2y5n21Uep1CfJ1rQAVwi7-Nctua8OkGNTCq2ekaAICnBL-Ik-8G9Ysaf5xOdgjZ029BRaICPABOhPEF2-WL8kYaTgmKsWfKhN-a~p-SAQ4EiYTY8Tt-CZ6XZrtxYfoor29yO67TVDaOjG6M9Muozc~4M5ueE58iMzmuA0vcR8XuHAo~v-2gkEEJXsKefDkSMby6u3WFF4kqjJaB0qRS6cLbyZx3MlIAEQaURe6BG1fGZd1SeijYBa2FP2xY1Yh7W~SMG~k8UYFi7gAnwlSZT03C87F6rhyfqSrCS~1kYtA~tLnFJ87cJquNBFLNqU6Lw__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA.

Ramirez-Gomez, Sara O. I., Greg Brown, and Annette Tjon Sie Fat. 2013. "Participatory Mapping with Indigenous Communities for Conservation: Challenges and Lessons from Suriname." *The Electronic Journal of Information Systems in Developing Countries* 58 (1): 1–22. https://doi.org/10.1002/j.1681-4835.2013.tb00409.x.

Ravna, Øyvind, and Nigel Bankes. 2017. "Recognition of Indigenous Land Rights in Norway and Canada." *International Journal on Minority and Group Rights* 24 (1): 70–117. https://doi.org/10.1163/15718115-02401001.

Robinson, Catherine J., Kirsten Maclean, Ro Hill, Ellie Bock, and Phil Rist. 2016. "Participatory Mapping to Negotiate Indigenous Knowledge Used to Assess Environmental Risk." *Sustainability Science* 11 (1): 115–26. https://doi.org/10.1007/s11625-015-0292-x.

Rundstrom, Robert A. 1995. "GIS, Indigenous Peoples, and Epistemological Diversity." *Cartography and Geographic Information Systems* 22 (1): 45–57. https://doi.org/10.1559/152304095782540564.

Rye, Ståle Angen, and Nanang Indra Kurniawan. 2017. "Claiming Indigenous Rights through Participatory Mapping and the Making of Citizenship." *Political Geography* 61: 148–59. https://doi.org/10.1016/j.polgeo.2017.08.008.

Schreyer, Christine. 2008. "'Nehiyawewin Askîhk': Cree Language on the Land: Language Planning through Consultation in the Loon River Cree First Nation." *Current Issues in Language Planning* 9 (4): 440–63. https://doi.org/10.1080/14664200802354427.

Sletto, Bjørn. 2012. "Indigenous Rights, Insurgent Cartographies, and the Promise of Participatory Mapping." *Portal*, no. 7. https://repositories.lib.utexas.edu/bitstream/handle/2152/62703/4Portal_issue7_2012_Sletto.pdf?seq%20uence=3.

Stonechild, Blair. 2006. "Aboriginal Peoples of Saskatchewan." The Encyclopedia of Saskatchewan. 2006. https://ourspace.uregina.ca/esask/entry/aboriginal_peoplesof_saskatchewan-lang=B0F3BC25-1560-95DA-437047BD73A3AA0C.jsp.

Thompson, Christian. 2023. "James Smith Cree Nation." Usask.Ca. 2023. https://teaching.usask.ca/indigenoussk/import/james_smith_cree_nation.php.

Tom, Miye Nadya, Elizabeth Sumida Huaman, and Teresa L. McCarty. 2019. "Indigenous Knowledges as Vital Contributions to Sustainability." *International Review of Education* 65 (1): 1–18. https://doi.org/10.1007/s11159-019-09770-9.

Tsosie, Ranalda L., Anne D. Grant, Jennifer Harrington, Ke Wu, Aaron Thomas, Stephan Chase, D'shane Barnett, et al. 2022. "The Six Rs of Indigenous Research." Tribal College Journal of American Indian Higher Education. 2022. https://tribalcollegejournal.org/the-six-rs-of-indigenous-research/.

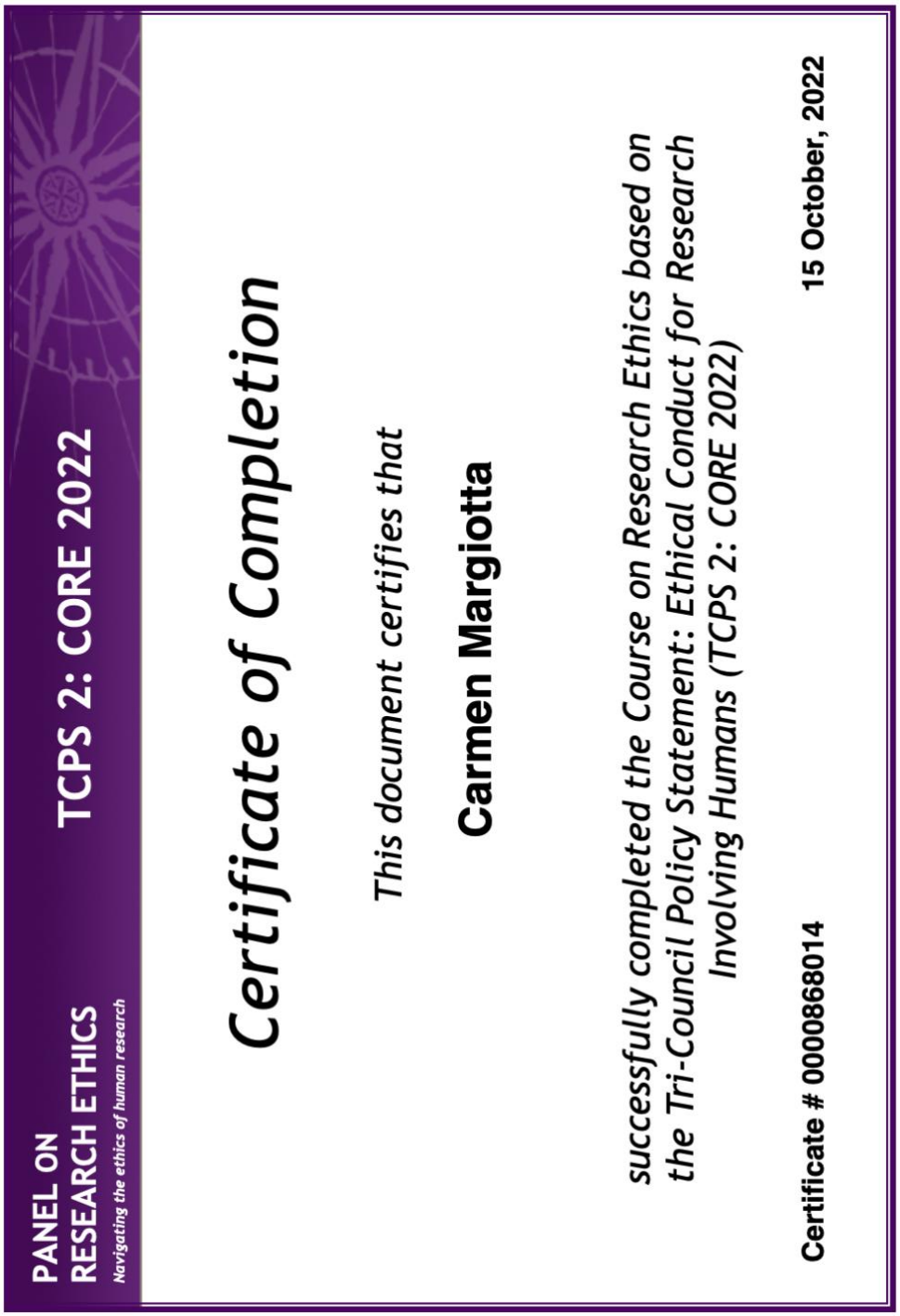
UN (United Nations). 2007. "Declaration on the Rights of Indigenous Peoples. A/'RES/62/295, Adopted by the United Nations General Assembly on 13 September 2007. New York: United Nations."

Wright, A. L., C. Gabel, M. Ballantyne, S. M. Jack, and O. Wahoush. 2019. "Using Two-Eyed Seeing in Research with Indigenous People: An Integrative Review." *International Journal of Qualitative Methods* 18: 160940691986969. https://doi.org/10.1177/1609406919869695.

Wynn, L. L., and Mark Israel. 2018. "The Fetishes of Consent: Signatures, Paper, and Writing in Research Ethics Review: The Fetishes of Consent." *American Anthropologist* 120 (4): 795–806. https://doi.org/10.1111/aman.13148.

Appendices

1. Appendix A. TCPS 2 Certificate of Completion.



PANEL ON RESEARCH ETHICS
Navigating the ethics of human research

TCPS 2: CORE 2022

Certificate of Completion

This document certifies that

Carmen Margiotta

successfully completed the Course on Research Ethics based on the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2: CORE 2022)

Certificate # 0000868014

15 October, 2022

2. Appendix B. Indigenous Canada Course Certificate.

3. Appendix C. Interview Guide for the interviews with community members.

Theme 1: Questions on places of importance and land-use:

- What do you consider to be James Smith traditional territories?
- Where did community members use to go?
- What did they do [in the land]?
- Do you still go out in the land? If so, where, and what do you do?
- Do you remember any stories from your youth about using the land?
- Do you know of any burial grounds?

Theme 1: Questions on changes:

- Have you noticed any changes [in relation to land-use – e.g., hunting, fishing]?
- How was [hunting, fishing, etc.] when you were a child?

Theme 2: Questions on motivations:

- Is this interesting for you to talk about? If so, why?
- Is this important? If so, why?

Theme 3: Questions about mapping:

- What do you think of this method?
- Do you feel constraint by this method?
- Can you think of a better way of doing this?

Additional questions:

- How do you know about this? / Where does this knowledge come from?
- Was or is there overlap between JS hunters, trappers etc. and other First Nations using the same area? If so, which Nations?
- Do you speak Cree?
- Do you use other names for this place? / What do you call this in Cree?
- Is there anyone else I should talk to about this?
- Is there anything else you would like to share?

4. Appendix D. Cartoon from Gary Larson's "Far Side" series.

Figure 8. 1 The Far Side by Gary Larson

Source: Liu (2021)