

How and Why Indigenous Peoples Are Engaged in Wildland Fire Management

by

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Abstract

Little is known about how and why Indigenous peoples are engaged in wildland fire management particularly in the areas of wildfire prevention, mitigation, preparedness, response, and recovery abilities in the event of a threatening wildfire. This qualitative study explored how and why Indigenous peoples in six case study jurisdictions in Canada and New Zealand are engaged with government fire management agencies in wildfire management, barriers to engagement, and identifies opportunities to increase engagement between governments and Indigenous peoples. This research used a qualitative research approach with a case study design. Twenty-nine participants were interviewed from Canada and New Zealand, including in the provinces of British Columbia, Saskatchewan, Ontario, and Nova Scotia, as well as the Northwest Territories. Findings indicate that engagement between government fire management agencies and Indigenous peoples predominantly occurs when agencies respond to a wildland fire affecting Indigenous land and in the employment of Indigenous peoples. The key barriers identified by Indigenous leaders were a lack of trust towards the government, and limited financial support by the federal government that would allow Indigenous communities the ability to hire staff to support emergency management including engagement, as well as the fire suppression equipment needed to respond to wildfires in or near their community. Government participants indicated that a lack of funding to hire the appropriate amount of staff to support engagement with Indigenous communities as a barrier, as was a lack of Indigenous cultural awareness and history in government staff, and the lack of clarity around the roles and responsibilities of the multiple agencies involved during emergency response. Recommendations for increasing engagement are provided. This research concludes with a way forward for both Indigenous and government leaders that can enhance their relationship.

Preface

The motivation for this research stemmed from my years of employment with the Ontario Ministry of Natural Resources and Forestry: Aviation, Forest Fire and Emergency Services branch. I began my career as a firefighter crew member in northwestern Ontario and have directly responded to or supported approximately 80 plus fires in Canada. Each wildfire experience is unique and requires adaptation to the surroundings with various stakeholders, including working in First Nations communities and alongside Indigenous peoples. I was born and raised in southern Ontario outside of Toronto so my exposure firsthand to the realities faced by First Nations communities in northern Ontario was very minimal. Even as a white woman in the public education system, I was taught very little about Indigenous history and Canada's dark assimilation practices. My first wildfire in northern Ontario in a First Nation community was surreal; I did not understand the context, and their way of life was so different and segregated. Some lived in impoverished conditions with only the bare essentials. I asked myself: is this what post-colonialism looks like?

Then came my first experience heading into a remote fly-in First Nation community; again, nobody prepares you for what you are about to encounter, the way you are received or not by the community as a government employee, and what can be interpreted as people's harsh realities. As the years progressed in my firefighting days and I responded to more and more wildfires in nearby First Nations communities, I began to ask questions about why things were the way they were as they related to wildfire management response, evacuations, and engagement. I wanted to know how the Ontario government was including them in the process of fire management before, during, and after a wildfire. I would hear shocking stories of families being separated during evacuation or taken from their First Nations communities as a means to

protect their best interests, and I wanted to know if these practices were really in their best interests; were Indigenous peoples part of this process and, if so, who was engaging them? I began this journey wanting to understand how Ontario was engaging First Nations communities, and with my 14 years of experience, I quickly realized that if Ontario was suffering from a paralysis in engagement, there may be other jurisdictions experiencing the same issues. Thus, I wanted to ensure that my academic pursuits would inspire positive and transformative change for fire management agencies nationally and internationally. This research is the first of its kind, and I hope that future researchers are able to expand upon my findings to continue the momentum for inclusivity and producing effective organizational change.

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To all the government fire management agencies across Canada and in New Zealand, your support and encouragement from the onset of this research was instrumental in propelling the need for transformative change across government landscapes. To the government employee participants that directly participated in my research, your experiences and openness to share your accounts and perceived understanding of the issues of my research is, without a doubt, influential to the change ahead. A special thank you to the BC Wildfire Service; Northwest Territories, Environment and Natural Resources; Alberta Wildfire; the Environment, Public Health and Safety, Wildfire Saskatchewan; Manitoba Wildfire Service; Aviation, Forest Fire and Emergency Services, Ontario; Natural Resources and Energy Development, Wildfire New Brunswick, and Lands and Forestry, Nova Scotia for providing financial support to conduct inperson qualitative research interviews with both government fire management agencies and Indigenous leaders. In addition to the financial support received from government fire management agencies in Canada, my research also received funding from the Mitacs Research and Innovation group who connect industry with post-secondary institutions to solve business challenges in Canada and internationally. I must also provide a sincere thank you to the Canadian

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To my friends and colleagues, it has been a long journey the last three and a half years, and your kind words of encouragement and humour, and constant checking in with me throughout the process have helped me stay focussed to achieve my goal.

To my parents, Janice and David Askin, I can say that what started out as a seed has blossomed into achieving a dream both personally and professionally. I am very blessed to have two loving and inspiring parents who push me to be the best version of myself and appreciate my need to challenge the status quo and ask questions.

Finally, to my partner Rob—what a journey this experience has been for both of us. I am grateful for your patience as this venture required most of my evenings and weekends over the last two years to write, all while I maintained a busy full-time career. You are the definition of selfless, and I could not be more fortunate for your gentle nudges to keep pushing when I reached that point of saturation and exhaustion. From my heart of hearts, thank you.

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List of Acronyms

AAR	After Action Review
AFFES	Aviation, Forest Fire and Emergency Services (ON)
APC	Atlantic Policy Congress of First Nation Chiefs Secretariat (NS)
BC	British Columbia
BCWS	British Columbia Wildfire Service
CA	Canada
CFO	Community Fire Officer (ON)
CIFFC	Canadian Interagency Forest Fire Centre
CP	Collaboration Planning
CRD	Cariboo Regional District (BC)
CWPP	Community Wildfire Protection Program (ON)
DLFNS	Department of Lands and Forestry, Nova Scotia
DGGFN	Deh Gáh Got'ie First Nation (Fort Providence, NT)
EFF	Extra Firefighter
EMBC	Emergency Management British Columbia
EMO	Emergency Management Office (NS)
ENR	Department of Environment and Natural Resources (NT)
FESNZ	Fire and Emergency Services Society, New Zealand
FN	First Nations
FNESS	First Nations' Emergency Services Society
ISC	Indigenous Services Canada
LKFN	Liidlįj Kúé First Nation (NT)
LSFN	Lac Seul First Nation (ON)
MACA	Department of Municipal and Community Affairs (NT)
MLTC	Meadow Lake Tribal Council (SK)
MOU	Memorandum of Understanding
NFN	Neskonlith First Nation
NZ	New Zealand
NGO	Non-governmental organization
NT	Northwest Territories
NS	Nova Scotia
OFMEM	Office of the Fire Marshal and Emergency Management (ON)
ON	Ontario
PAGC	Prince Albert Grand Council (SK)
SK	Saskatchewan
TEK	Traditional Ecological Knowledge
Type 1	Initial attack firefighter

Type 2	Sustained action firefighters
Type 3	Trained support in First Nations communities to assist with emergency response i.e., cooks, cleaners, logistics managers
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
WLFN	Waterhen Lake First Nation (SK)
WLIB	Williams Lake Indian Band (BC)
WOFN	Wauzhushk Onigum First Nation (ON)
WUI	Wildland Urban Interface

Definitions

Hapu	Clan
Iwi	Māori Tribe
Iwi Marae	Meeting house for Māori
Karakia	Prayer
Mana	Legal or binding authority
Powhiri	Traditional Māori welcome
Te reo	Official Māori language
Waiata	Traditional Māori song

Keywords

Māori; First Nations; Government; Wildfire; Participation; Barriers; Canada; New Zealand

Chapter 1. Introduction

1.1. The Issue

Annually, around the globe, wildfires impact Indigenous peoples and their communities who reside adjacent to forested areas in areas known as the wildland urban interface (WUI). WUI areas are locations “where a wildland fire can potentially ignite homes and where wildfire problems are most pronounced” (Bento-Goncalves & Vieira, 2020). Wildfires have impacted First Nations communities in Canada throughout history, by taking lives, burning structures, and removing livelihoods (Christianson et al., 2012). Many of these Indigenous communities also depend on the forests around them for their livelihoods, including by hunting, trapping, and using resources within them that are used for their subsistence and way of living. Indigenous peoples in Canada possess a strong relationship to Mother Earth and utilize fire in many traditional aspects of their culture, such as for cooking and ceremonial purposes. Fire is still used today as a tool, just as it was long before European contact was made, to maximize suitable plants and animals and achieve cultural objectives (Lewis et al., 2018; Neale, 2018). Therefore, even a wildfire in a remote area can impact the community (Wotton & Stocks, 2006).

Wildfires require government fire management agencies and Indigenous peoples to work together to support the protection and safety of Indigenous peoples and communities. Engagement with Indigenous peoples by government fire management agencies is required to understand First Nations communities’ prevention, mitigation, preparedness, and response abilities in the event of a threatening wildfire. More specifically, a key question is how government fire management agencies can support First Nations communities in preventing,

mitigating, and preparing their community for an encroaching wildfire, as well as in providing input into government decision-making during wildfire activity. Wildfire prevention, mitigation, preparedness, and response includes the forethought and planning by communities to carry out Firesmart activities, including brushing tree lines back from their dwellings, removing forest fuel build up, ensuring adequate and sustained water supply to protect properties, or using fire resistant building materials to mitigate risks to their land or property. Additionally, it is helpful for communities to have an emergency response plan that outlines roles and responsibilities of community members and government partners in the event of an infringing wildfire and how to respond to a wildfire.

The continued risk of wildfire and projected pressures of climate change, public expectation, and financial and resource availability on land managers increase the wildfire risk (Koksal et al., 2019). Changes in temperature and weather patterns have increased the number of record-breaking fire seasons in recent years across the globe, with more hectares burned with significant severity, which ultimately leads to profound impacts to ecosystems, including on timber, residential and rural human environments, wildlife habitat, hydrology, and carbon sequestration (Haider et al., 2019). This wildfire danger requires the attention of government fire management agencies and other government emergency management delivery programs to adjust their strategic directions to meet these challenges through meaningful engagement with Indigenous people (Flannigan et al., 2013; Jakes & Langer, 2012).

Every year, wildfires consume millions of hectares of forest in Canada, resulting in several community evacuations due to the direct threat of fire or the indirect threat of heavy

smoke. According to the 2016 report of the Canadian Interagency Forest Fire Centre (CIFFC), during the previous decade, an average of 7,000 wildfires occurred each year in Canada and burned an average of 2.6 million hectares per year (Munoz-Alpizar et al., 2017). In New Zealand, on a 10-year average (from 2005–2006 to 2014–2015), 4,100 wildfires occurred that burned 4,170 hectares as indicated by the National Rural Fire Authority (NRFA) data (Langer & McGee, 2017). New Zealand was included as part of this study as the country is an international resource sharing exchange partner with Canada that has Indigenous populations impacted by colonization as part of the British Commonwealth system. Resource sharing agreements allow for the exchange of people from one country to the other during times of severe emergency escalation due to forest fires.

Collaborative engagement by government fire management agencies with Indigenous peoples prior to significant wildfire events for the purpose of wildfire management is essential. This can help to improve outcomes, including the personal safety of community members, as well as infrastructure and land protection as they relate to cultural heritage sites and traditional harvesting grounds (Thomassin et al., 2018). Additionally, collaborative engagement can provide Indigenous peoples with the opportunity to contribute to how their traditional ecological knowledge can be essential for land management and wildfire decision-making. Through meaningful engagement by government fire personnel with Indigenous peoples, discussions on how relationships can be further developed in a positive and inclusive manner can begin to take shape.

1.2. Fire Management Agencies and NGOs

In wildland fire management across Canada provincial and territorial governments are responsible for suppressing wildfires, and more recently providing support to communities on mitigation and preparedness practices to proactively prepare for wildfires. While the responsibility to suppress and contain wildfire rests with the provincial or territorial governments in Canada, the federal government is actively involved in providing financial support and additional resources as needed during wildland fire activity. In New Zealand, wildland fire management is governed by Fire and Emergency Services (FES). FES manages both wildland fire and structural fire, which is different from Canada's government fire management structure who responds only to wildland fires. Indigenous peoples in Canada and New Zealand are considered partners who receive the wildfire suppression services from the government fire management agencies amongst other stakeholders.

In addition to federal and provincial wildfire support in Canada, some jurisdictions have non-governmental organizations (NGOs) that act as a linkage between the federal and provincial governments to First Nations communities; the First Nations' Emergency Services Society (FNESS) in British Columbia, and the Meadow Lake Tribal Council and the Prince Albert Grand Council in Saskatchewan are examples of such organizations. Their roles include providing wildfire suppression assistance to First Nations community hazard fuel reduction projects, firefighting employment, and emergency preparedness planning, to name a few.

1.3. Relationships Between Indigenous Peoples and Governments

Canada has a vast Indigenous population spread across the country that includes three distinct groups: First Nations, Métis, and Inuit people. The total Indigenous population recorded in the 2016 Canadian Census (2019) was 1,673,785 (4.9% of the Canadian population), including 977,235 First Nations, 587,545 Métis, and 65,030 Inuit. The historical relationship between governments and Indigenous peoples in Canada commenced with the 1763 Royal Proclamation by King George III, which intended to protect, for “Aboriginal Nations” in former French Canada and North America, their land rights, including hunting, fishing, and the settlement and selling of land (McNeil, 2013). Additional treaties were signed in the later years as European settlement continued, including the Robinson treaties of the 1850s signed to acquire large parcels of land east and north of Lake Huron and north and west of Lake Superior. In 1867 the Dominion of Canada formed, and Section 91(24) in the 1867 Constitution Act provided the federal government exclusive jurisdiction over “Indians, and the lands reserved for Indians” (McNeil, 2013). In 1876, the Parliament of Canada passed the Indian Act, which introduced a new distinction of Indigenous people based on their collective rather than individual statuses as “civilized or barbarous”, which the government had previously labelled Indigenous people. The Act provided the government with control over Indigenous populations in the country, requiring them to assimilate to Eurocentric practices (Kirkby, 2019). From 1871-1921 eleven treaties were signed in Ontario, Manitoba, Saskatchewan, and Alberta. Furthermore, in the province of British Columbia (BC), Governor James Douglas signed treaties with Indigenous people in the 1850s. Once BC joined the Dominion of Canada in 1871, Canada only permitted the signing of Treaty 8, which covers part of the province. Case law has historically paved the way for Indigenous

people's rights to date (McNeil, 2013). More recently, constitutional treaty rights can be found in Section 35(1) of the 1982 Canadian Constitution Act and Charter of Rights, which proclaimed that the existing "Aboriginal and treaty rights" of the Indigenous people of Canada was recognized and affirmed (Borrows, 2019). These government policies and programs that incorporated assimilation practices have caused severe intergenerational trauma within First Nations communities and Indigenous people (Mitchell et al., 2019) which contributes to hesitancy from the perspective of an Indigenous person in Canada to develop positive relationships and trust with governments (Langton, 2003).

The general relationship between governments and Indigenous peoples in Canada has historically been variable due to a long history of government assimilation policies and decisions by administrations that have negatively impacted Indigenous peoples. For example, the land claim agreements between the federal government and some Indigenous communities have taken years to resolve. Lands are customary grounds for Indigenous people to maintain their subsistence and historical way of living, and land disputes threaten their ways of life (Langton, 2003). Institutionalized residential schools operated for 160 years, which were forced upon Indigenous people and their children, enrolled over 150,000 Indigenous children with the intent of instilling Eurocentric assimilation practices (Wilk et al., 2017). In addition to residential schooling, the government initiated what is referred to as the 'Sixties Scoop' from the 1960s to 1980s, which sought to remove the Indigeneity of children from mainstream society. During this time, there was a mass removal of 16,000 to 20,000 children from their communities who were separated from their families and placed into the child welfare system (MacDonald & Gillis, 2017).

Similarly, to Canada, New Zealand has Indigenous Māori populations that inhabited the country prior to European settlers. As of 2018 in New Zealand, the Māori population represented 16.5% of the country's total population of 4,699,755 million (Stats NZ 2018). The Treaty of Waitangi, signed by over 500 Māori Chiefs in 1840, provided the partnership parameters between Indigenous Māori peoples and the British Crown specific to Māori rights to land and fisheries, and to other rights throughout New Zealand (Shepherd, Whitehead & Whitehead, 2019). This founding document respects Māori rights to governance of their customary lands and resources, as well as their role and connection as guardians of the natural environment (Shepherd et al., 2019). Māori traditionally had, and still have, a strong connection to land (*whenua*) and a close relationship with fire (*te ahi*) as a primary resource and tool. Indigenous knowledge and skills are key components for providing a greater understanding of the present-day use of fire by Māori in the rural landscape while retaining traditional and cultural practices (Langer & McGee, 2017).

1.4. Research Aim and Objectives

The aim of this research is to explore Indigenous peoples' engagement in wildfire management within the provinces and territories in Canada and in New Zealand. The objectives are to:

1. Examine how and why Indigenous peoples within the provinces and territories in Canada and in New Zealand are engaged in wildfire management;
2. Identify barriers to engagement of Indigenous peoples in wildfire management, from the perspectives of Indigenous leaders and fire managers; and

3. Recommend ways to increase the involvement of Indigenous peoples in wildfire management.

To achieve these objectives, this study explored five case studies in the following Canadian provinces/territories: British Columbia, Northwest Territories, Saskatchewan, Ontario, and Nova Scotia. New Zealand is the sixth case study in this research project.

1.5. Significance of this Research

To my knowledge, no other academic research has explored how and why Indigenous peoples in the provinces and territories of Canada or in New Zealand are engaged in wildland fire management. A large majority of the existing literature related to wildfire management and Indigenous peoples originates from Australia and examines how Indigenous people had a profound effect on the landscape, ecology, and the food resources available today based on their historical burning practices (Gott, 2005; Yibarbuk et al. 2001). Researchers have also explored sustainable futures for Indigenous peoples with managing their landscapes and public policy concerns about Indigenous well-being and healthy landscapes with the use of fire (Alman, 2003). Another area of research involves the divide created between government and Indigenous peoples related to government prescribed burning for land management purposes (Edwards et al. 2008). More specifically, researchers have examined the impacts of historic and current wildfire

experiences on support for wildfire mitigation preferences (Christiansen et al., 2012; Carroll et al., 2010).

This research examines the engagement practices in Canada and New Zealand by provincial/territorial (Canada) and national (New Zealand) government fire management agencies with Indigenous peoples in relation to wildfire prevention, mitigation, preparedness, response, and recovery. Ockwell (2008) suggests that there is a recognized need for the expansion of participatory processes by governments for facilitating stakeholder engagement in fire management policy and practice. There is also a need to consider expanding government capacity in regional areas to effectively facilitate grassroots stakeholder engagement in the development of fire management policy (Ockwell, 2008). This needs to be done inclusively with stakeholders whose views have traditionally been marginalized in terms of their influence on policy (Ockwell, 2008). Social science research with Indigenous populations on fire management can help to inform policy in the face of global changes such as climate change (Christianson, 2015).

The recent study by Thomassin et al., (2019) examined how and why government agencies in Canada, Australia, New Zealand, and the United States are motivated to have Indigenous peoples participate in natural hazard management. The five main motivations for participation were to better understand the issues facing Indigenous peoples at the local level and their socio-economic vulnerabilities, to bridge gaps in cultural differences between government and local Indigenous peoples, to facilitate the protection of Indigenous cultural heritage, and to recognize Indigenous peoples as the holders of Indigenous knowledge. Furthermore, Thomassin et al. (2019) identified that engagement commenced out of respect for Indigenous people's

rights, the development of new or existing government policies requiring engagement, local initiatives, and natural hazard events. Thomassin et al. (2019) conclude that, internationally, there is minimal inclusion of cultural knowledge or practices in disaster response and emergency management structures and that the integration and operationalization of Indigenous people's knowledge and practices remain under-examined. They also found that engagement practices by agencies with Indigenous people are sporadic, anecdotal, and not included in academic papers describing the engagement process itself. Comparatively, my research examines more specifically how and why Indigenous peoples are engaged in wildfire management from the qualitative research perspective and views of both Indigenous and government leaders within Canada and New Zealand. Thomassin et al. (2019) examines academic and grey literature to understand the origins and present engagements informing natural hazard management agencies interactions with Indigenous peoples. While my research examines motivations by governments, it is only related to wildfire management and encompasses a more in-depth participant-centric perspective obtained through qualitative research methods.

Recent research conducted by Mistry et al., (2019) in South America examines the positive effects of prescribed burning practices by the government that is inclusive of local Indigenous peoples' participation to achieve more equitable fire governance. Mistry et al. (2019) highlights the positive impacts experienced by Brazil and Venezuela after the development of policies that integrate Indigenous peoples' Traditional Ecological Knowledge (TEK) into government prescribed burning practices. The integrated fire management approach by government with Indigenous peoples was shown to prevent large wildfire occurrences and provide a financially responsible avenue for countries to save money by limiting the acquirement

and exhaustion of resources. This research amplifies the benefits of integrated governance in terms of a long-term gain for governments and relationships between fire agencies and local Indigenous people.

1.6. Organization of Thesis

My thesis is organized into seven chapters. Chapter 2 outlines the context and background to this project. Chapter 3 is the literature and theoretical review, delving into social constructivism and post-colonial theory, as well as outlining key concepts related to participant engagement. Chapter 4 is the methodology chapter, outlining the case study approach, research process, semi-structured interviews, analysis of interview data, and ethical considerations. Chapter 5 presents the results of this research. Chapter 6 is the discussion where the results are discussed in further detail. Finally, this thesis concludes with recommendations for future research, policies, and practices.

Chapter 2. Context and Background

2.1. Case Study 1: British Columbia, Canada

British Columbia (BC) is the westernmost province in Canada (Figure 1). The province is 95 million hectares in size including 60 million hectares characterized by abundant forests and mountainous terrain, the Pacific coastline, plateaus, and numerous waterways and lakes (BC Ministry of Forests, 2003). The climate in BC ranges from mildly wet off the Pacific coast to extremely cold in the winter in the icefields of alpine regions in the northeast. However, in South Central BC, there are dry desert-like conditions. Forests in BC include balsam poplar, maple, lodgepole pine, tamarack larch, western hemlock, and western cedar.

BC's ten-year average of wildfires is estimated to be 1,666. Of their total annual average of wildfires, 57% are lightning-caused fires and 43% are human-caused fires, with a total average of 269,702 hectares burned (British Columbia Wildfire Service 2020). This numerical data is helpful to provide jurisdictional context in terms of the number of wildfires impacting British Columbia annually and the potential level of engagement required to maintain the safety of First Nations communities.

British Columbia has a population of 4,648,055 million (Statistics Canada 2016), with 5.9% self-identifying as Aboriginal (Statistics of Canada Province of British Columbia 2019). Also, BC has the greatest Indigenous cultural diversity of the provinces and territories with seven of Canada's eleven unique Indigenous language families (Indigenous Northern Affairs Canada 2010), and it is home to 199 First Nations communities, making up one third of all First Nations communities in Canada (Indigenous and Northern Affairs Canada 2020).

Wildfire management government agency

The BC Wildfire Service (BCWS) has six regional fire centres: Cariboo, Coastal, Kamloops, Northwest, Prince George, and Southeast that provide wildfire prevention and mitigation guidance, as well as suppression to all provincial stakeholders, including the public, First Nations, industry, and other government partners. This may include legislation, regulations, policies, and strategies to guide direction and decision-making, and the development of fire prevention communications to support stakeholders and partners before and during a wildfire emergency. More specifically, BC Wildfire Service's response to wildfire situations includes the coordination of firefighters, support personnel, aircraft, and equipment.

First Nations' Emergency Services Society (FNESS), BC

FNESS is a not-for-profit organization located in Kamloops, BC which has a mission to assist First Nations to develop and sustain safer and healthier communities including forest fuel management and emergency management services. FNESS's Forest Fuel Management program offers dedicated staff and a variety of programs. Programs include: the Community Resiliency Investment Program, which seeks to reduce the risk and impact of wildfire to First Nations communities through funding supports and fuel management activities, the Forestry Enhancement Society of BC, which aims to improve damaged or low-valued forests, improve habitat for wildlife, support the use of fibre from damaged and low-value forests, and treat forests to improve management of greenhouse gases. Additionally, FNESS provides a First Nations Adapt Program that uses Indigenous-informed qualitative research to assess climate change vulnerabilities and identify Indigenous cultural values and traditional burning knowledge

from participating First Nations communities. FNESS financially partners with First Nations communities, the BC provincial government and the federal government, and Indigenous Services Canada as a medium to support initiatives on behalf of First Nations communities. This can be done through the exchange of funds from the provincial and federal governments to FNESS who then works with First Nations to achieve the intended use of the financial support provided, including prevention and mitigation activities such as prescribed burning.

Williams Lake Indian Band, BC

Williams Lake Indian Band (WLIB) is located 240 kilometers south of Prince George and 290 kilometers north of Kamloops and is situated 15 minutes outside of the city of Williams Lake (Figure 1). Their traditional language is Shuswap, and they have a membership of about 800 people with approximately 300 living on the reserve. They consider themselves to be an urban First Nation and have many prospering businesses along the main highway corridor. Their economy is based on the natural resources in their territory. Williams Lake Indian Band has many successful projects, including on-reserve infrastructure, an archeological company, a logging company, a gas station, and an on-reserve golf course. The employment rate is high. As Chief Sellars explained during our interview “our focus is to not only protect our historical values and our teachings and our language, but also bringing dollars and to keep people working and provide services to our members.”

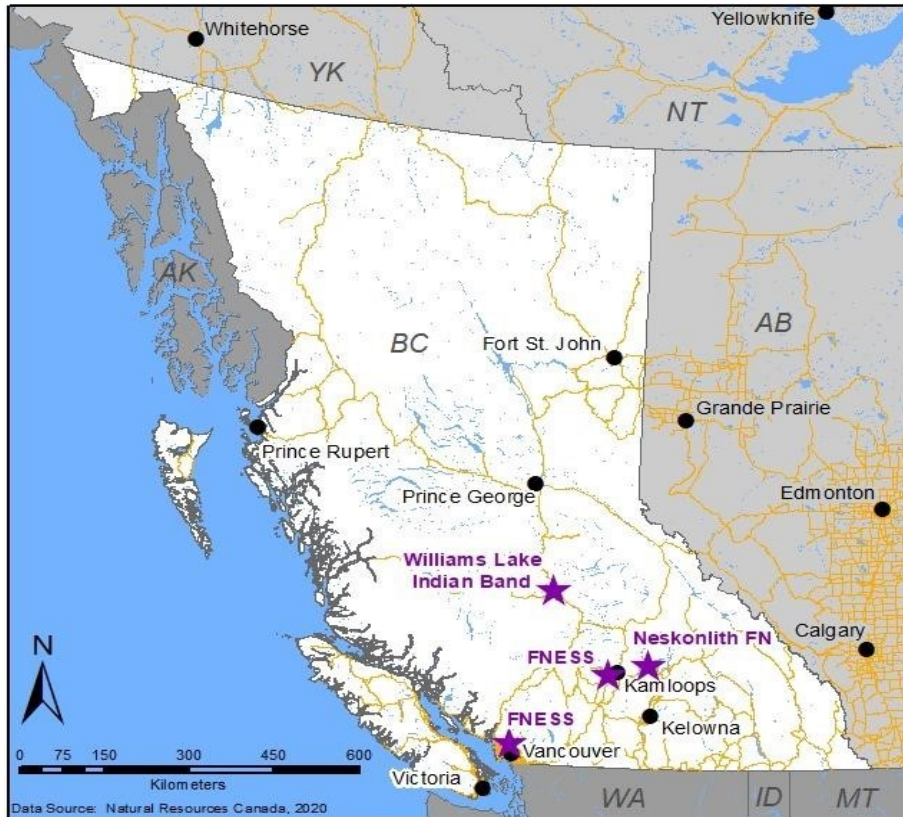
Neskonlith First Nation, BC

Neskonlith First Nation resides within the Secwepemc traditional territory (Figure 1). Neskonlith First Nation resides on reserve number two within Secwepemc traditional territory with 16 other bands. Neskinolith First Nation has three parcels of reserve land totalling 2,812

hectares in size. Neskonlith First Nation’s traditional language is Secwepemc, and they have a total membership of 660 people both on- and off-reserve.

Figure 1

Map of British Columbia: Main cities and the two First Nations communities and one NGO included in this case study



2.2. Case Study 2: Northwest Territories, Canada

The Northwest Territories (NT) are located in Canada’s north, bordered by Saskatchewan and Alberta to the south, the Yukon Territory to the west, and the territory of Nunavut to the east (Figure 2). The vast NT terrain ranges in elevation from sea level up to 2,773 metres. Much of

the land is tundra in the Arctic plain with shrubs, grasses, lichens, and mosses that grow along the Canadian Shield. The dominant tree stands are spruce, pine, birch, and larch (Pearson, 2018). The Environment and Natural Resources, Forest Management Division, receives on a ten-year average 190 lightning-caused fires and 19 human-caused fires. Hectares burned by lightning average 623,274, and 1954 hectares are burned from human-caused fires. This numerical data is helpful to provide jurisdictional context in terms of the number of wildfires impacting the Northwest Territories annually and the potential level of engagement required to maintain the safety of First Nations communities.

The population of NT is 41,786, including 13,180 First Nations (mainly Dene), 4,075 Inuit, 3,385 Métis, and 20,272 non-Indigenous (Canadian census 2016). There are 26 First Nations communities in the Northwest Territories (Government of Canada 2017).

Wildfire management government agency

In NT, forest and wildfire management is provided by the department of Environment and Natural Resources (ENR), Forest Management Division. The department provides the policy, planning, and regulatory framework for the stewardship, protection, and sustainable management of forest resources on 40-million hectares of land in the NT. Fire operations programs include fire permits and prevention and mitigation programs to support communities and industries to reduce their wildfire risks. They also provide trained and capable personnel to fight wildfires. Their “Wildfire Update” website provides information about the current wildfire situation, dangers, and actions by the ENR. In addition, they have a website where people can register their values at risk from wildfire for the Environment and Natural Resources database.

This information can be helpful to guide decision-making about which areas need to be protected first during a wildfire.

Liidljı́ Kúé First Nation, NT

Liidljı́ Kúé First Nation (LKFN) is located within the community of Fort Simpson and does not have a separate reserve. Liidljı́ Kúé First Nation and Fort Simpson are located where the Mackenzie and Liard rivers come together in Fort Simpson (Figure 2). Liidljı́ Kúé First Nation is located approximately 500 kilometers west of Yellowknife and their First Nation is estimated to have roughly 1300 people, with 1100-1200 that continue to reside in the community (D. Cazon, personal communication, August 2018). Liidljı́ Kúé First Nation is part of the Dehcho Territory, which consists of ten First Nations in NT, and their mother tongue is South Slavey.

Deh Gáh Got'ie First Nation (Fort Providence), NT

Deh Gáh Got'ie First Nation is located on the outskirts of the community of Fort Providence, NT, 180 kilometers northwest of Hay River following the Mackenzie Highway (Figure 2). Deh Gáh Got'ie First Nation is part of the Dehcho Territory, and their official language is South Slavey. According to Chief Canadian, Deh Gáh Got'ie First Nation has approximately 1080 members on- and off-reserve.

Figure 2

Map of Northwest Territories: Main cities and the two First Nations communities included in this case study



2.3. Case Study 3: Saskatchewan, Canada

Saskatchewan (SK) is located in central western Canada. It is a prairie province with a landscape characterized by its expansive flatness and wheat and barley fields. Saskatchewan borders with Alberta to the west, Manitoba to the east, and the Northwest Territories to the north

(Figure 3). More than half of Saskatchewan, or 34 million hectares, is forested. Saskatchewan regions include boreal forest, which have coniferous and deciduous trees, aspen parkland, prairies, arctic and subarctic lands, and cordilleran (mountain) forest.

Wildfire Management Saskatchewan identified their 10-year wildfire average to be 448 wildfires. Of those 448 wildfires, 57% were human-caused and 36% were lightning-caused, while on average, 7% of wildfires investigated were identified as having no known cause. The 10-year average of hectares burned was 553,921. When comparing the 10-year average numbers of Saskatchewan to British Columbia, for example, BC's total number of wildfires was almost four times higher than the numbers from Saskatchewan. Interestingly, Saskatchewan experienced a higher proportion of human-caused and a lower proportion of lightning-caused wildfires than BC, whose wildfires were 57% lightning-caused and 43% human-caused. This numerical data is helpful to provide jurisdictional context and the potential level of engagement required to maintain the safety of First Nations communities.

The total population of Saskatchewan is 1,098,352 million (Statistics Canada 2016). Of the total population, 16.3% self-identify as Aboriginal, or 175,020 persons. There are 70 First Nations communities in Saskatchewan (Government of Canada 2020). First Nations communities are spread out across the province, with the majority residing between the southern and central areas and with only three First Nations communities located in the northern part of the province.

Wildfire management government agency

The Wildfire Management Branch in Saskatchewan resides within the Ministry of Environment, Public Health and Safety. The Wildfire Management branch provides several

services across the province, including fire suppression and values protection of people, homes, businesses, land, and recreating area. Additionally, their program provides information to the public, including details on FireSmart, which covers how to prevent and prepare for wildfire; provides locations of fire bans and current wildfire activity with fire danger maps, wildfire smoke, and air quality ratings; and offers an interactive wildfire management map with the wildfire operations management approach to each wildfire.

Prince Albert Grand Council, Saskatchewan

Prince Albert Grand Council (PAGC) is located in Prince Albert, Saskatchewan. PAGC represents and provides leadership support and varying programs and services to the 12 First Nation communities that reside under their umbrella. Programs include forestry, wildfire protection, and FireSmart community planning. These programs aim to support First Nations communities by providing administrative and technical assistance; PAGC is the linkage between First Nations communities and provincial and federal partners. In relation to wildfire management, PAGC is the administrator for fire crews through a service agreement with the province, and cost-sharing of that agreement occurs between the federal and provincial governments (C. Buttner, personal communications, September 2018). PAGC strives for an enhanced quality of life for their First Nations communities and advocates for positive change, honouring and protecting their treaties, and strengthening the treaty relationships in an era of reconciliation within Canada.

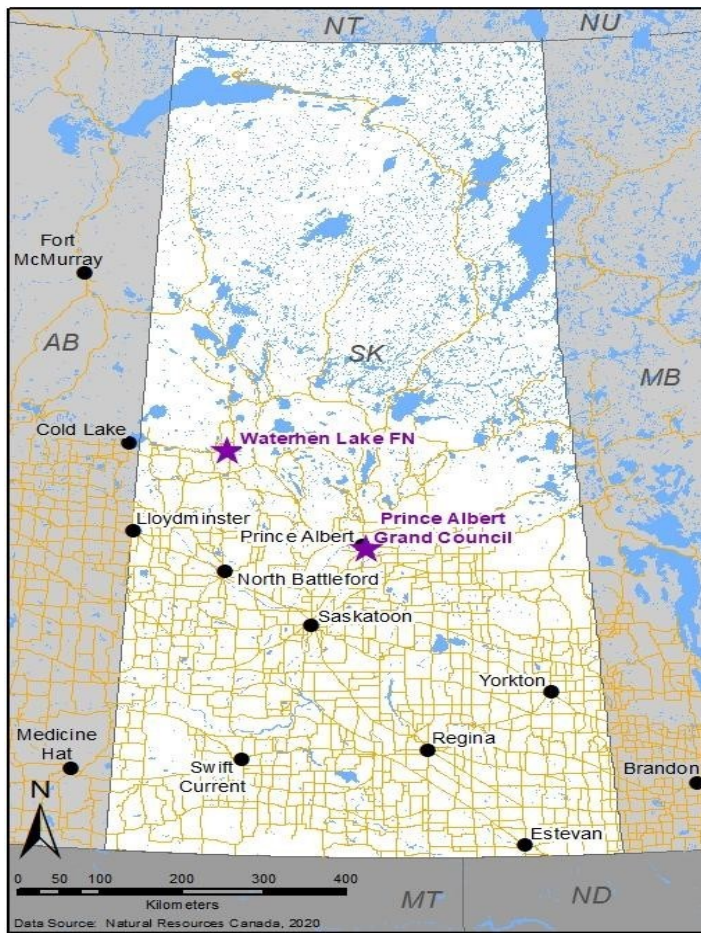
Waterhen Lake First Nation, Saskatchewan

Waterhen Lake First Nation is a Cree First Nation band located 375 km north of Saskatoon (Figure 3). The First Nation has a population of 1,896, with 953 people living on

reserve and the other 942 living off-reserve. Waterhen Lake First Nation is a signatory to Treaty 6. Their land base is approximately 7972 hectares. Waterhen Lake First Nation is part of the Meadow Lake Tribal Council (MLTC). The MLTC provides leadership guidance and support to the nine First Nations within their Tribal Council, including emergency management, and acts as the conduit between provincial and federal partners with their First Nations communities (MLTC 2020).

Figure 3

Map of Saskatchewan: Main cities and the First Nations community and Tribal Council included in this case study



2.4. Case Study 4: Ontario, Canada

Ontario (ON) is located in Central Canada bordering the province of Manitoba to the west, the province of Quebec to the east, and James Bay and Hudson's Bay to the north (Figure 4). Ontario is divided into northwestern, northeastern, and southern Ontario, and it is the province with the largest forest region in Canada with over 71 million hectares of forest. The Ontario Government (2019) indicates Ontario's forests are divided into forest sub-regions, including Hudson Bay Lowlands in the far north, the boreal forest region in northern Ontario, the Great Lakes-St Lawrence forest in southern and central Ontario, and the deciduous forest in southern Ontario.

As provided by the Ontario Ministry of Natural Resources and Forestry: Aviation, Forest Fire Emergency Services(AFFES) branch, the approximate 10-year average of the number of total wildfires is 785. Of the 785 wildfires, 59% were found to be lightning-caused wildfires, 39% were found to be human-caused wildfires and 2% found to be cause unknown with an average of 111,490 hectares burned annually.

Ontario's population is 13,242,160 million (Statistics Canada 2019). Of the total population, 374,395 self-identify as Aboriginal. More specifically, of those who identify as Aboriginal, 236,680 identify as First Nations, 120,585 identify as Métis, and 3,860 as Inuk (Inuit). In Ontario, there are 215 First Nations reserves, settlements and villages. First Nations reserves are located across the province (Government of Canada, Indigenous and Northern Affairs 2019) (Figure 4).

Wildfire management government agency

In Ontario, AFFES manages wildfires for the province. Their role and responsibilities include preventing loss of human life and injury, preventing and mitigating economic loss and social disruption, as well as promoting an understanding of the ecological role of fire to support resource management. When a wildfire occurs on crown land outside of municipal boundaries, AFFES will respond with personnel and equipment including fire suppression gear as well as air tanker support to suppress the wildfire. They will respond within municipal areas at the request of the municipality, and these responses are organized through agreements between the province and municipalities. In coordination with the other provincial and territorial fire programs in Canada, AFFES provides education and community FireSmart planning opportunities for the public and industry including fire safety and danger rating maps that explain the hazard with identified wildfires around the province, as well as instructions on burning and permitting requirements.

Obishikokaang First Nation, Ontario

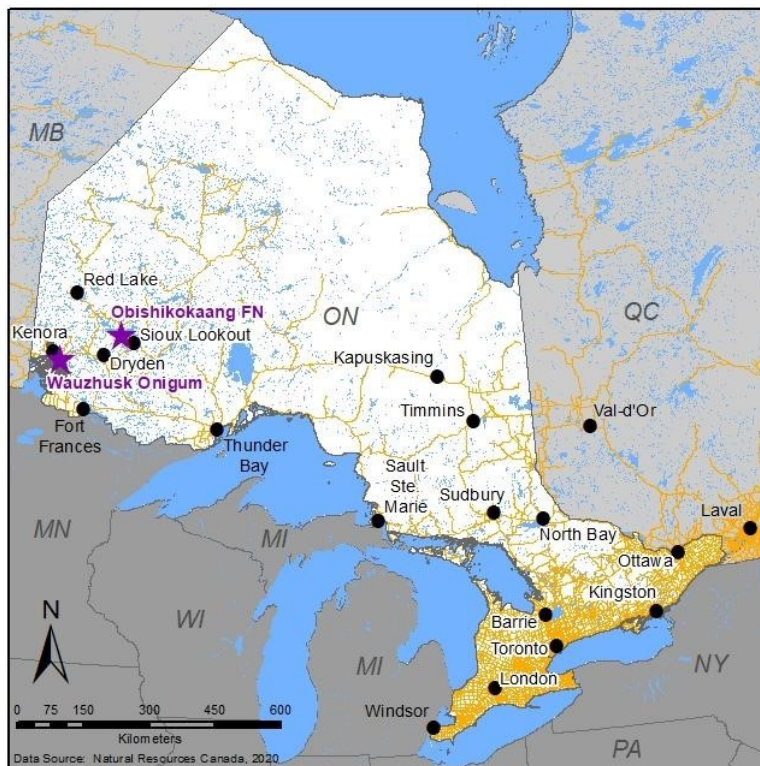
Obishikokaang First Nation, also referred to as Lac Seul, identified Anishinaabe as their Indigenous language. The communities of this First Nation are located 400 kilometers northwest of Thunder Bay with a membership of around 2,700 people, including approximately 900 people who live on-reserve and 1,800 people who live off-reserve (C. Bull, personal communication, June 2018). Obishikokaang First Nation has three communities—Frenchman’s Head, Keijic Bay, and Whitefish Bay—and is one of the largest reserves in the Treaty #3 region in northwestern Ontario (Figure 4).

Wauzhushk Onigum First Nation, Ontario

Wauzhushk Onigum First Nation, also known as Rat Portage, is located approximately 500 kilometers northwest of Thunder Bay, Ontario, and approximately 200 kilometers east of Winnipeg, Manitoba. This First Nation is a member of the Grand Council Treaty 3 territory, with 300 people living on-reserve and approximately 400 living off-reserve (Figure 4). The Wauzhushk Onigum First Nation identify in Anishinaabe as the Golden Eagle Clan, and band members speak Anishinaabe. In addition to providing programs and services to community members, the band also owns and operates the Golden Eagle Bingo Hall and the Devils Gap Marina on Lake of the Woods.

Figure 4

Map of Ontario: Main cities and the two First Nations communities included in this case study



2.5. Case Study 5: Nova Scotia, Canada

Nova Scotia is one of the three maritime provinces located on the Atlantic Ocean and the second smallest of Canada's ten provinces that neighbours with the provinces of New Brunswick and Prince Edward Island. Nova Scotia is 5.3 million hectares in size, including 4 million hectares that are classified as forested areas (Forest Nova Scotia, n.d). Compared to other jurisdictions, Nova Scotia has a very small forested area available for wildfire consumption. Additionally, Nova Scotia has diverse vegetation across the province, including cedar, spruce hemlock, spruce pine, balsam fir, maple, birch, black cherry, black spruce, and white spruce.

The 10-year average of wildland fires accumulates to 215 with an average of 479 hectares burned annually (Department of Lands and Forestry 2020). Just over 99% of all wildfires in NS are human caused, leaving 1% of wildfires to have been caused by lightning. This numerical data is helpful to provide an overview of the wildfires impacting Nova Scotia annually and the potential level of engagement required to maintain the safety of local First Nations communities.

Nova Scotia has a total population of 923,598 (Canada census 2016). In Nova Scotia, 51,495 people self-identify as Aboriginal, and of that population, 25,830 are First Nations, 23,315 are Métis, and 795 are Inuk (Inuit). The Government of Canada (2020) identified a total of 13 First Nations communities in Nova Scotia. All 13 communities are comprised of Mi'kmaw people who have been residing in Nova Scotia for thousands of years and are spread amongst 42 reserves, which range in size from 3,500 hectares to less than one hectare (The Canadian Encyclopedia, 2018). Eight of the thirteen First Nations communities are located on the mainland, and five are in Cape Breton. The largest settlement is Eskasoni with 4,314 people

within the community and Sipekne'katik with 2,554 people, while 5,877 First Nations people live in Halifax.

Wildfire management government agency

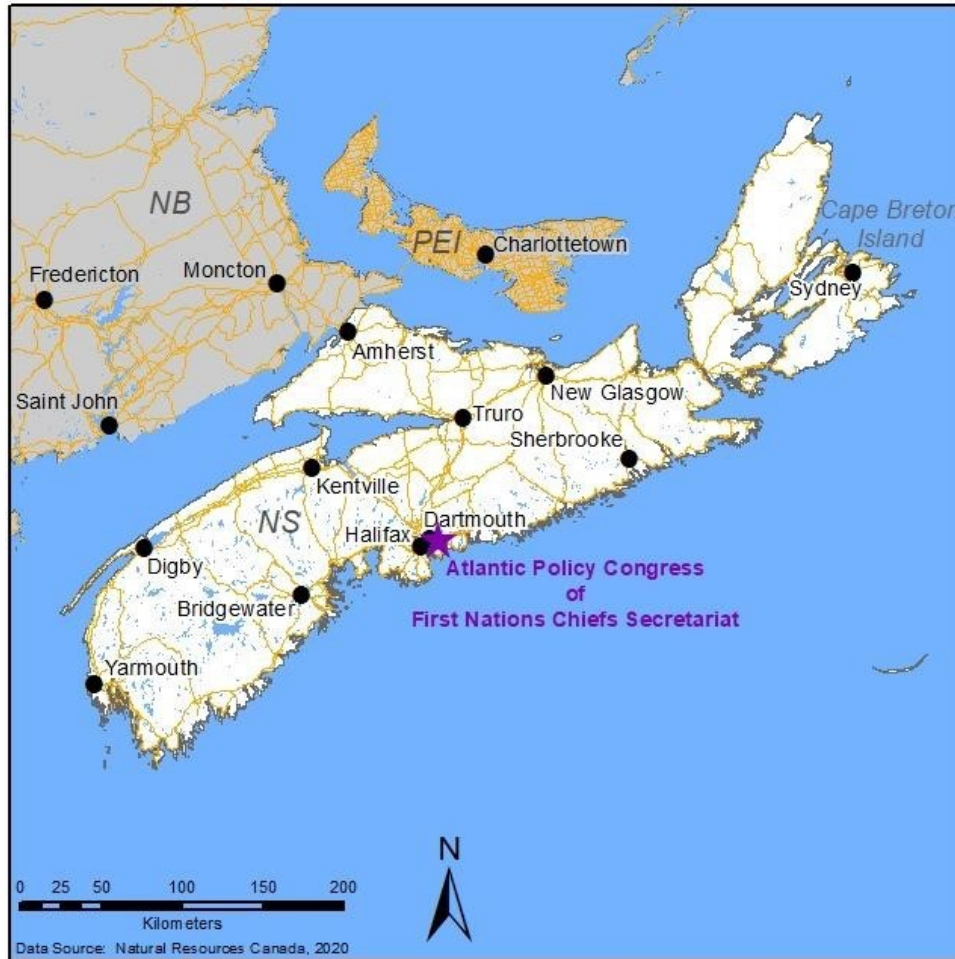
In Nova Scotia, wildfire management is the responsibility of the Department of Lands and Forestry (DLFNS). Their role and responsibilities include resources for managing forest fires, policy development and strategies, fire prevention and detection, and fire training and fire equipment to support forest fire suppression.

Atlantic Policy Congress of First Nations Chiefs Secretariat

The Atlantic Policy Congress of First Nations Chiefs Secretariat (APC) (Figure 5) advocates for First Nations communities in Atlantic Canada, including Nova Scotia. Their role is to be the collective voice for First Nations communities and to develop policy alternatives for matters that impact Nova Scotian First Nation communities, which is a role that is also within the realm of land and fire management. Additionally, their focus remains enhancing partnerships and government-to-government relationships to improve the quality of life, education, and selfdetermination of First Nation communities. Other neighbouring provinces, including Prince Edward Island, New Brunswick, Newfoundland and Labrador, and Quebec, are also members of the APC.

Figure 5

Map of Nova Scotia: Main cities and the First Nations Secretariat included in this case study



2.6. Case Study 6: New Zealand

New Zealand has a population of 4,699,755 million, of which the Māori population represents 15.8%. New Zealand’s land base totals approximately 26,821,500 hectares (Ministry for the Environment n.d). Of the total hectares, 29% are forested with 6.3% as native forests, including species of beech, kauri, rimu, taraire, and tawa, with 16% labelled as production forest

(Stats NZ 2005). Additionally, there are exotic forests found throughout the country that predominately include radiata pine, which makes up 90% of the tree species within these forests, as well as douglas fir, eucalyptus, black walnut, and corsican (Stats NZ 2005).

New Zealand's 10-year average of wildfires as received from Fire and Emergency Services is 4,581 human-caused fires and 223 fires caused by natural causes including those caused by lightning, combustion, or dry conditions. This numerical data is helpful to provide jurisdictional context in terms of the number of wildfires impacting New Zealand annually and the potential level of engagement required to maintain the safety of Māori communities.

Wildfire management government agency

Wildfire management in New Zealand is governed by the national agency Fire and Emergency Services (FES), New Zealand. Their roles and responsibilities differ from Canada's wildfire programs because Fire and Emergency Services is one agency that responds to both structural and wildland fires, whereas in Canada, wildfire management agencies only respond to wildland fires. Fire and Emergency Services has both paid firefighters (1,500) and volunteers (8,500) that support the country in fire response.

My interview in New Zealand was with a Māori leader, Melanie Mark-Shadbolt from the tribes of Ngati Porou and Ngati Kahungunu ki Wairarapa in Te Aroha, which is a rural town in the Waikato region on the North Island.

Figure 6

Map of Aotearoa New Zealand: Main Cities on the north and south islands



Chapter 3. Literature Review

3.1. Introduction

This research is within the academic study of human geography. Human geographers study places, people, bodies, discourses, silenced voices, and fragmented landscapes (Hay, 2010). My research aligns with the aforementioned fundamental cornerstones of human geography in deciphering the barriers to and opportunities for increasing engagement between government and Indigenous people specific to wildland fire management. This research provides a neutral landscape for both parties to be open and honest with the purpose of future growth in becoming united in their approaches to wildland fire management. The qualitative data captured through interviews is a tool used to illuminate recollections and representations over extended periods of time, allowing participants to place their memories in their own words. This mix of past recollections conveyed in the present provides additional understanding and meaning to the researcher of the broad environmental changes that can be experienced by participants (Hay, 2010). The qualitative research within human geography profoundly supports my research and provides contextual understanding to the varying perspectives as told by government and Indigenous leaders.

3.2. Social Constructionist Theory

The first theory adopted for this research is social constructionist theory, which is a theoretical orientation that underpins radical and critical alternatives in social science fields (Burr, 2015). Social constructivists do not tread in areas of universal truth, but rather seek to understand the complexity of one's reality and how meaning is interpreted from their subjective

experiences and social interactions with others. Social constructionism draws its influences from several disciplines, including human geography, philosophy, sociology, and linguistics, making it multidisciplinary in nature (Burr, 2015). Moreover, Gergen (2015) identifies the knowledge we hold of the world and ourselves by finding it rooted in human relationships. Social constructionist theory is the most appropriate theoretical framework for my research given the personal accounts provided by government and Indigenous leaders. As previously illuminated in the introduction, governments in Canada and New Zealand and Indigenous peoples have a long history that impacts the interplay between the past and the present in terms of how engagement is conducted regarding wildfire management. The personal experiences of research participants are essential to this research.

Moreover, Block & Laing (2007) identify social constructivism as seeking to understand the principles and consequences of concepts and their transformations, as well as to analyze how and why these concepts may persuade people to think the way they do, and how these transformations impact our behaviour. Secondly, some think that social constructivism can be related to enforced non-reasonable processes and that the non-reasonable forces are related to power, such as control or dominance over others and nature. Social constructivism is applicable to my research as the historical relationship between government and Indigenous people has predominately been influenced by an imbalance of power.

3.3. Post-Colonial Theory

Post-colonial theory examines the influence of European colonialism on current forms of political, social, historical, and economic structures, as well as current patterns of thought

(Kerner, 2018). Specific to Indigenous peoples around the globe, post-colonialism theory asks for justice to the suffering caused through exploitation, violence and enslavement done to victims of colonization. It challenges the western world's perspective and seeks to re-position and empower marginalized Indigenous peoples (Parsons & Harding, 2011). According to Parsons & Harding (2011) the areas most affected by colonization are Africa, Latin America, and Asia, however even though they are no longer controlled by foreign powers the Western influence still exists in their democracy and everyday living. Moreover, Childs and Williams (2013) discuss the periodization of post-colonialism and that it can in no sense be regarded as achieved, but rather the world exists somewhere in between indicating we live in a post-colonial neo-colonialized world.

In accordance with my research aim and objectives, I felt it imperative to adopt a postcolonialism approach to support my understanding of historical and present-day contexts and dialogues in terms of the relationships between Indigenous people in Canada and New Zealand with the respective governments of those countries. In contrast, post-colonial research aims to break down power imbalances and acknowledge the rights and knowledge of Indigenous people through inclusive and interactive conversations and meaningful engagement. Reviewing the data from the lens of postcolonialism supports the interpretation and comprehension of the type of engagement occurring or not between government and Indigenous people to help explain potential cause-and-effect relationships.

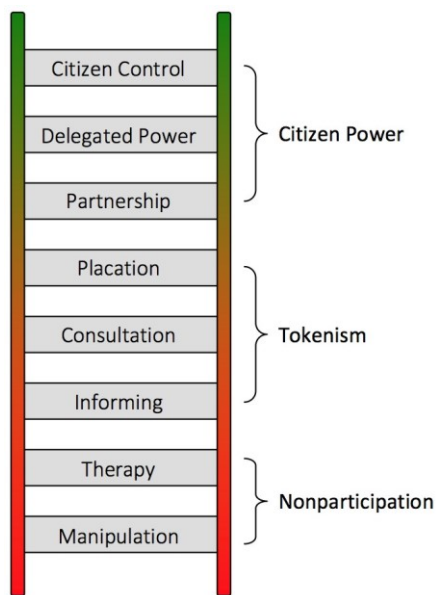
3.4. Public engagement conceptual models

Public engagement is a key concept for this research. At all levels of government citizen participation has been enacted since the 1950s with the assumption that if citizens become actively involved as participants in their democracy, the governance that emerges from this process will be more effective (Irvin & Stansbury, 2004). Participation by citizen involvement in decision-making has proven to provide greater empowerment and self-fulfillment to the individual (Kweit & Kweit, 2004). Specifically, mental empowerment connects citizens with a sense of personal competence to pursue action in the public realm (Zimmerman & Rappaport, 1988). However, Kweit & Kweit (2004) identify governments will be more effective with social organization, including trust, norms, networks that improve society by facilitating coordinated actions.

Arnstein (1969) developed a ladder of participation model (Figure 7), which has eight rungs to show the varying degrees of engagement in decision-making. The ladder rungs include 1) manipulation, 2) therapy, 3) informing, 4) consultation, 5) placation, 6) partnership, 7) delegated power, and 8) citizen control. Each rung shifts the power balance between public governments and citizens, indicating that the first two are non-participatory, rungs 3-5 degrees of tokenism, and rungs 6-8 are degrees of citizen power. The first two rungs, manipulation and therapy do not enable people to participate in planning or conducting programs but to enable powerholders to educate or cure the participants. With rungs 3 and 4, informing and consultation, powerholders ask for people's participation under the context that there is no guarantee their requests and voices will change the status quo. The fifth rung, placation, is simply a higher level

of tokenism as the ground rules allow the have-nots to advise, but the powerholders retain the ability to make the final decision on next steps. Rung six, partnership, enables citizens to negotiate and discuss trade-offs with traditional powerholders. Rungs seven and eight, delegated power and citizen control, are at the top of the ladder, providing participants with full managerial power and decision-making (Arnstein, 1969). The ladder of participation model has been used in several contexts and disciplines, for example social justice (Blue et al., 2019), theatre activities and engagement (Afolabi, 2016), education (Stelmach, 2016), and human behaviour and urban management (Kotus & Sowada, 2017).

Fig. 7: Arnstein’s A Ladder of Citizen Participation Model (1969)



In this study which examines how Indigenous peoples in Canada and New Zealand are engaged in wildland fire management, Arnstein’s (1969) model will help to explore the level of engagement currently occurring with First Nations and Māori people.

Further research by Talley et al. (2016) suggests that by condensing stakeholder engagement frameworks into a “five-feature framework,” agencies can produce better decisionmaking, increased social learning, and clearer communication between scientists, managers, and the general public. The five-feature framework includes the steps of 1) setting clear objectives, 2) systemically representing stakeholders, 3) using relevant methodologies, 4) providing opportunities for co-ownership, and 5) reflecting on process and outcomes. The first feature of this framework requires setting clear objectives by contemplating what the outcomes of the process should be, which allows organizers to plan ahead with regard to the other features of stakeholder engagement, including how to ensure system representation, choosing a relevant methodology, and ensuring meaningful co-ownership of the process. The second feature in the framework is the systemic representation of stakeholders, which requires sincere consideration of who is engaged and who is excluded, focusing on identification and representation. The third feature, which encompasses using relevant methodologies, requires methods to be appropriate and to factor in the potential complexities and obstacles to participation. Participation methods include formal meetings and forums, interviews, social network mapping, surveys, citizen action boards, and interactive modelling. The chosen methodology must enhance the scope of representation rather than limit it. The fourth feature, which covers creating opportunities for coownership, requires co-ownership wherever possible and offers some degree of reflexivity and responsiveness built into the stakeholder engagement process. The fifth feature, which is about reflecting on processes and outcomes, is a necessary element of stakeholder engagement and requests that stakeholder engagement practitioners be reflexive and intentional about the choices they make (Talley et al., 2016).

This five-feature framework model provides a starting point for a more robust engagement and for the continuous integrity of stakeholder engagement. Robust engagement allows for comparisons and knowledge building while increasing skills and capacity amongst natural resource managers and scholars (Talley et al., 2016). The application of the five-feature framework could be a useful tool that fire managers integrate into their stakeholder engagement practices specifically with Indigenous peoples. Equipping fire managers with an academically approved framework may provide the needed confidence and support to commence their broader engagement practices. Furthermore, fire managers can reflect on whether or not these features are currently being implemented within their programs and adapt their practices to include some or all elements proposed by Talley et al. (2016).

Morton et al. (2012) examine the success of engagement with Indigenous peoples in British Columbia specific to land and resource management using the collaborative planning (CP) model, which has been utilized across the globe. The idea behind CP is that those who are the decision makers are typically the individuals most impacted by the planning outcomes (Morton et al., 2012). CP has proven to be successful in reaching consensus amongst Indigenous and non-Indigenous peoples given that it is implemented with a strong process design. More specifically, Morton et al. (2012) developed an evaluative two-tiered framework of the CP model that weighs the model's strengths and weaknesses prior to setting out best practices. CP challenges traditional styles that rely more on professionals to lead the process and limit public consultation. The two-tiered engagement approach offers government an opportunity to engage all stakeholders for the first tier of engagement, and for the second tier of engagement, the plan

developed at tier one is sent to the second tier with recommendations and review only by First Nations groups and the provincial government.

The collaborative planning approach to engagement may expand existing practices between government fire management agencies and First Nations communities. It could provide a process design that is fluid with larger land management agreements, while encouraging transparent inclusivity in policy and procedural framework development that emulates the needs of Indigenous and Māori communities, further allowing Indigenous peoples to have an influential voice in the decisions regarding resource use in their territory and area (Thomassin et al., 2018).

3.5. Stakeholder Engagement

Over recent decades, governments have shifted their thinking to be more inclusive and adaptable to meet growing public expectations regarding the engagement of citizens in the development of policies and processes. These changes have occurred in a climate of increasing complexity, diversity, and dynamic change (Lockwood et al., 2009). In relation to sustainable resource use, much uncertainty results from the unintended consequences of past activities, while global climate change is likely to introduce further complexity and uncertainty into ecosystem futures. Inevitably, ongoing change and unfamiliar environmental conditions will make for strenuous and unique demands on government fire management institutions.

Most natural resource problems are “wicked problems” (Rittel & Webber, 1973) for which novel policy and institutional responses must be produced. The emergence of this type of policy challenge is characterized by the complexity originating from multiple causes of problems

and solution strategies, and from fragmented institutional settings (Lockwood et al., 2009). Natural resource tribulations are typically complex, uncertain, multi-scale, and they affect multiple people and agencies. This level of impact stresses the importance of transparent decision-making by government fire response agencies that is flexible to fluctuating circumstances and embraces diverse knowledge sets and values. To achieve this, stakeholder participation is increasingly being sought and embedded into land management and environmental decision-making processes, from local to international levels (Reed, 2008). Public participation has been part of a wide range of environmental applications, including integrated watershed management (Sabatier et al., 2005; ISPWDK, 2005; Kenney et al., 2000), agricultural development (Wilson, 2004; Chambers, 1994), ecosystem management (Knight et al., 2006), environmental governance (Rist et al., 2007), forest management (Buttoud and Yunusova, 2002; Carter & Gronow, 2005), and planning (Buchy & Hoverman, 2000; Buchecker et al., 2003; Luyet et al. 2012).

Indigenous natural resource management is often highly politicized as the interests of Indigenous peoples can appear to conflict with those of environmental conservation groups and governments. This perceived conflict highlights the importance of engaging Indigenous peoples during the early stages of natural resource management policy development that are of significance to them with potential for impacts to their people. There have been international and national movements to enable Indigenous peoples to regain or guarantee their land and resource use rights, and to include their perspectives in natural resource management. Internationally, these rights are recognized in the Declaration on the Rights of Indigenous Peoples adopted by the United Nations in 2007 (Watkin et al., 2016).

In environmental matters, the challenge is coping with multiple natural resource values, multiple stakeholders, and competing interests of natural resources such as water and the use of land for provincial, national, and international economic consumption. Indigenous groups have entered consensus-building approaches within existing government planning regimes. Consensus building for planning involves two-way iterative communication between First Nations communities, organizations, and government departments to translate and mediate the use of Traditional Ecological Knowledge (TEK) into policy decisions (Maclean et al., 2014). In addition to collaborative efforts, there is a need for greater general awareness of Indigenous concepts of “country” or landscapes, the nature and extent of Indigenous interests in natural resource management, and their connection to other Indigenous values (Jackson et al., 2012). Indigenous knowledge, values, and contemporary practices can contribute to environmental restoration and management.

In addition to the collaborative planning model (Morton et al., 2012), Wyatt et al. (2019) describe the use of a “consensual conflict engagement approach” in natural resource management between government and Indigenous peoples, specific to forestry, as a constructive method to generate relationships and transformative change. Wyatt et al. (2019) utilized three case studies in different First Nations communities, including Atikamekw Nehirowisiwok, Huron-Wendat, and Mi’gmaq in Quebec to explore the number and diversity of processes in which Indigenous peoples engage. The case studies suggest the benefit of a strategic approach to achieve transformative (through conflict) and incremental change (through consensual) initiated by the First Nations communities. The outcomes of the research provided researchers with the ability to understand how the roles of transformative and incremental change, interactions

between processes, and the importance of governing organizations contribute to positive engagement driven by Indigenous people's strategy.

For example, Wyatt et al. (2019) explain, the Wemotaci Sawmill project (Quebec) was interpreted by some Atikamekw Nehirowisiwok as conflicting with their values, which resulted in the creation of the Harmonization project as a means of reconciliation by the government. Both the consensual engagement and conflict processes arise out of competing or varied objectives, and Wyatt et al. (2019) explain that this strategic process is followed by a new arrangement that provides future collaboration in ways that are more advantageous to the First Nations community.

Engagement and collaboration by government with Indigenous peoples vary by the local, provincial, federal agreements in place. Fortier et al. (2013) completed an extensive review of 494 First Nations communities in Canada to understand the preferred agreements chosen by First Nations communities to support partnership, engagement, and collaboration related to the forestry sector. The results identified that while most communities are involved in multiple agreements and collaborations with the government to meet multifarious objectives for the community, there is also pressure on the community's capacity and resources to further support engagement opportunities. This issue typically rests with the chief and council or other community managers for technical expertise, thus causing strain on engagement and agreement arrangements (Fortier et al., 2013). Specific to my research, consideration of current collaborative approaches and agreements employed by First Nations communities are paramount to understanding the capacity and resources available to support conversations specific to

wildland fire management objectives for each of their communities or for their province, territory, or country.

Negotiations between First Nations, government, and/or private sector forestry companies requires First Nations to acclimate their own governance structures in response (Fortier et al., 2013). Ultimately, these collaborations improve relations between government and First Nations to achieve mutual goals related to forestry policies and future direction. Often, after a wildfire impacts areas of joint forest tenure between a First Nations and the government, collaborative discussions ensue regarding the salvageability of the wood and stumpage available for harvest, which correlates to the relationship between the forest sector and wildland fire management branch.

Collaborative engagement with Indigenous peoples over the last few decades is a legislative requirement of government agencies in the area of natural resource management. More broadly, the focus is shifting to include Indigenous people's engagement pertaining to natural hazards and emergency management prevention, mitigation, preparedness, response, and recovery with regard to such hazards, including floods, wildfires, hurricanes, tornados, and cyclones (Thomassin et al., 2018). Despite growing engagement efforts by government actors, internationally there appears to be marginal inclusion of Indigenous cultural knowledge or practices in formal disaster response and emergency management structures, which permeates into a lack of Indigenous people's knowledge being integrated into operational contexts (Thomassin et al., 2018). Furthermore, the use of Traditional Knowledge (TK) will not be realized if it is continually treated as another category or merged with Western scientific

knowledge to further the agenda of environmental and natural resource managers (Wilcock, 2013). The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) has become widely adopted by many countries, but the uptake of integration into organizational structure, policies, and procedural frameworks remains ponderous.

Engagement and collaboration produce stronger relations and partnership between Indigenous peoples and government. In Canada, there are dark histories that accompany presentday relationships between government and Indigenous peoples. Indigenous peoples maintain strong connections with the forest environments, resulting in identities and cultures with “deep roots in the forests” (Nenko et al., 2019). Additionally, from the 1700s to the end of the 1900s, consecutive treaties, legislation, and policies of Canadian governments displaced Indigenous peoples from their lands and attempted to assimilate them into non-Indigenous Canadian societies (Nenko et al., 2019). Indigenous peoples have sound historical and personal reasons to distrust settler governments or their agencies from the action or inaction of past governments, which are perceived to repeatedly be the source of betrayals, disappointments, and abuses (Thomassin et al. 2018). The emergency management of wildfires in First Nations communities produces trepidation; however, there is a palpable opportunity to overcome historical barriers through local-level engagement between communities and governments.

3.6. Chapter Summary

In this chapter, I explained the connection between my research and the application of human geography, illuminating the importance of both past and present-day histories to convey the experiences and interpretations of government and Indigenous leader interview participants

from this study. This was accomplished through using the lenses of social constructionist and post-colonial theories, which provide deeper insights into the actions of government actors and a deeper meaning of the accounts expressed by Indigenous leaders. In an effort to understand the data, three public engagement conceptual models were used, including Arnstein's (1969) ladder of participation, the five-feature framework of Talley et al. (2016), and the two-tiered collaboration planning model for land and resource management of Morton et al. (2012). This was followed by the existing literature related to stakeholder engagement in the areas of natural resource and environmental matters, policy, and decision-making processes; the application of Traditional Ecological Knowledge; and collaborative efforts related to emergency management. There currently is no research examining how and why Indigenous peoples are engaged in wildland fire management in Canada and New Zealand.

Chapter 4. Methodology

4.1. Introduction

This research examines the current relationship between government fire management agencies and Indigenous peoples with the intent of producing recommendations to improve future relationships and fire management planning and response. Six case studies are included in this study. In Canada, the case studies were of examples within Nova Scotia, Ontario, Saskatchewan, British Columbia, and Northwest Territories. The country of New Zealand is the sixth case study. Semi-structured interviews were conducted in person and by phone to achieve my research aim and objectives.

This chapter explains how this study was conducted. It begins by presenting the qualitative research approach and why this approach was chosen. A description of data collection methods that were used follows, with explanations regarding how these methods were applied throughout the study. The data analysis process is also explained. Additionally, this chapter reviews the ethical considerations considered for this study and concludes by summarizing efforts to ensure rigor in this research.

4.2. Qualitative Research Approach

Qualitative research methods focus on words and images rather than numbers, and they tend to produce inductive, constructionist, and interpretivist studies (Bryman et al., 2012). A qualitative research approach was used in this study to capture the subjective personal experiences of Indigenous leaders regarding engagement by government related to wildland fire

management. Additionally, government leaders described their personal experiences associated with wildfire management practices and relationships with First Nations communities. Choosing a qualitative research approach is beneficial to supporting Indigenous peoples who participate in research, as it provides the opportunity for personal and cultural expression because their experiences have traditionally been poorly understood. These views provide a valued richness and enhanced understanding of complex human issues (Suwamaru, 2016). Thus, the use of qualitative research methods allows the research to embrace storytelling approaches, which are useful and a culturally appropriate way for Indigenous people to share their experiences (Roman, 2016).

Qualitative research gives the researcher an opportunity to understand the descriptors, concepts, and characterizations given by interviewees from their experiences; it gives their stories meaning and thus translates their realities (Bryman et al., 2012). The qualitative exploration of my research objectives allowed participants to define and explain their experiences of the other party in a way that cannot be done using quantitative research. For those participants who identify as Indigenous, they may have obtained their education and knowledge from oral histories passed down from community elders with support from pedagogical education systems focussed on Traditional Ecological Knowledge in combination with Western science and education streams. Government leaders, on the other hand, obtain their knowledge and skill sets through on-the-job experience, and government policies and procedures. Qualitative research provides participants with the opportunity, latitude, and vehicle to have their realities voiced and structured in a manner that represents their subjective understandings and

interpretations of those experiences, which may include a large amount of variability from one identity to the other.

4.3. Multiple Case Study Approach

The case study method refers to the investigation of an individual, group, institution, or community to answer specific research questions, which seeks a range of distinctive evidence present in the case setting (Gillham, 2000). There can be single or multiple case study methods. Case studies are frequently used to thoroughly understand and occasionally resolve specific problems, and they are well suited to corroborating existing explanatory concepts (theory), falsifying existing explanatory concepts, or developing new explanatory concepts (Hay, 2010).

This research uses a multiple case study approach (Yin, 2011). Creswell (2013) identifies that a case study method is a means to isolate an issue or highlight strengths using the case as a specific illustration. A multiple case study design provides participants in each location with the opportunity to express their stories and interpretations of engagement practices within their jurisdictions. Multiple case studies provide the researcher with the opportunity to view the similarities and differences between cases of a particular phenomenon being studied. Additionally, I implemented a qualitative, multiple-case study research design to examine the varied experiences of Indigenous peoples' engagement in wildfire management across jurisdictions.

In an effort to showcase the similar themes and descriptions across Canada and New Zealand related to fire management by fire government agencies with Indigenous peoples, multiple case studies provided an opportunity to explore theoretical concepts and explanations of

phenomena (Hay, 2010). While case studies provide a transparency lens on particular social environments and phenomena, they are not perfect solutions to the research issue or topic in question and are incapable of identifying what decisions should be made. However, case studies provide the opportunity to connect the researcher to social phenomena and real-life experience to help sharpen the researcher's thinking and inform decision-making (Breslin & Buchanan, 2008).

There are diverse types of case study designs that are documented in the literature of the social sciences, including explanatory, critical instance, program effects, and narrative case studies (Breslin & Buchanan, 2008). This research is an explanatory case study because it sets out to understand existing engagement practices being utilized by government fire management agencies and provide insights into how and why engagement occurs or does not occur.

4.4. The Research Process

This section outlines the steps taken to select research participants, explains how the fieldwork was carried out, and describes how data was collected and analyzed. This research involved two groups of participants for each case study. The first group consisted of leaders of a First Nations in Canada or a Māori community in New Zealand, and/or an Indigenous organization; the second group consisted of senior government fire management officials in Canada and New Zealand.

4.4.1 Participant selection and recruitment

Indigenous leaders

To start my research in Canada and seek help with recruiting participants, I contacted the Assembly of First Nations, which directed me to provincial, territorial, and regional Indigenous organizations including the Northwest Territories' Emergency Management Organization and Aurora Institute, British Columbia's First Nations Emergency Services Society, Saskatchewan's Prince Albert Grand Council, Ontario's First Nations Technology Services Corporation, and the Atlantic Policy Congress of First Nations Chiefs Secretariat. Each of these organizations provided me with linkages to First Nations communities, including the names and contact details of chiefs and organizational leaders. In New Zealand, a researcher at Scion, a crown research institute, provided me with Maori contacts. Next, I sent individual emails to the recommended chiefs and other leaders to introduce myself, explain my research in detail, and invite them to speak to me further by phone about my research to see if they would be interested in participating. Most emails produced the desire for a follow-up call by the Indigenous leaders to engage in further discussion and arrange an interview date and time.

I interviewed 12 Indigenous leaders for this research project. In Canada, I interviewed six First Nations chiefs and two councillors from the following communities: Williams Lake and Neskonalith First Nations, British Columbia; Deh Gáh Got'ie (Fort Providence) and Liidljì Kúé (Fort Simpson) First Nations, Northwest Territories; Waterhen First Nation, Saskatchewan; and Wauzhushk Onigum (Rat Portage) and Obishikokaang (Lac Seul) First Nations, Ontario. I also interviewed three representatives from Indigenous organizations including the Atlantic Policy Congress of First Nations Chiefs Secretariat, NS; Prince Albert Grand Council, SK; and the First Nations' Emergency Services Society, BC. In New Zealand, I interviewed one individual who

holds three separate employment positions, including as CEO and cofounder of the New Zealand Te Tira Whakamataki Biosecurity Coalition, chief Māori advisor for the Ministry of the Environment, and Maori director for the New Zealand Biological Heritage National Science Challenge. The ethics approval obtained for this research along with the participant research consent forms developed for participants enabled me to identify them in my thesis.

4.4.2. Government leaders

To begin recruiting government participants, I gave a presentation to the Canadian Interagency Forest Fire Centre's Director Committee, which includes directors from every fire management agency in Canada. The aim of this presentation was to explain my proposed research, request funding, and invite participation by provincial/territorial fire management agencies. I received overwhelming support for the need for my research from all agency representatives in attendance and financial support from six of the nine fire agencies. I conducted 17 interviews with government participants from five different government agencies in Canada, including those in British Columbia, the Northwest Territories, Saskatchewan, Ontario, and Nova Scotia.

Recruitment for Māori and government official participants in New Zealand commenced with my initial graduate research during my course work in the fall of 2017, when I interviewed Piki Thomas from Fire and Emergency Services, New Zealand. Piki connected me to Zoe Mounsey, senior research programme advisor, and Kylan McKeen, research advisor within Fire and Emergency Services, NZ, who connected my research goals with employees to be interviewed for my research.

4.4.3. Fieldwork

The fieldwork for my research was completed in 2018. Building relationships with research participants before, during, and after the interviews required a balanced participantcentred approach to ensure authenticity of the data. I first contacted potential participants to introduce myself and explain my research project and how their contributions would be utilized.

Relationship building commenced immediately once participants expressed interest in participating in my research. I shared details about myself, my background in wildfire management, and my goals and aspirations for my research and my career.

During my visit to northwestern Ontario, I met with Chief Bull from Obishikokaang First Nation at a local eatery of his choice in Sioux Lookout where we had breakfast together and completed the interview. Chief Bull has been at the helm for 16 years. We parted ways after spending the morning together, and Chief Bull provided me with a book written by members of his community about their community and traditional territory to use for my research. The second interview in northwestern Ontario took place with the Wauzhushk Onigum First Nation chief in Kenora. I met with the chief at the band office within the community. The third interview in Ontario was with a government employee, the northwest region response and operations manager for Aviation, Forest Fire and Emergency Services (AFFES) within the Ministry of Natural Resources and Forestry (MNR). The interview took place in Dryden at the Regional Fire Management Centre, which is the northwest hub for the surrounding seven fire management headquarters. The two additional government employee interviews took place over

the phone with the assistant deputy minister for the Provincial Services Division, MNRF, and with the director of AFFES a week after field interviews.

In Nova Scotia, I travelled to Shubenacadie, where the fire management headquarters is located, for my interviews with both the manager of forest protection and the director of the Department of Lands and Forestry wildfire section (DLF). One additional interview occurred over the phone with Deputy Minister Julie Towers for the DLF. I interviewed one Indigenous leader, who also holds the role of executive director for the Atlantic Policy Congress of First Nations Chiefs Secretariat. This interview was completed over the phone because we were unable to meet while I was in Nova Scotia.

I conducted four interviews in the Northwest Territories. The first two were in Fort Smith with the Northwest Territories director of the Forest Management Division of Environment and Natural Resources and with the manager of fire operations. I then travelled northwest to Fort Providence for an interview with the chief of Deh Gáh Got'ie First Nation, and I later interviewed a band councillor member of the Liidljì Kúé First Nation over the phone.

In Prince Albert, Saskatchewan, I met with government leaders from the Ministry of Environment including the public health and safety wildfire programs executive director and the director of wildfire operations. My next interview in Saskatchewan was with an Indigenous leader who holds the position of program director of forestry for the Prince Albert Grand Council. The two interviews that followed were with the chief and a band councillor from the Waterhen Lake First Nation.

In British Columbia, I interviewed the executive director and deputy manager for the

Northwest Fire Centre with the BC Wildfire Service. I also interviewed the chief of the Neskonlith First Nation and the chief of Williams Lake First Nation, and the manager of the Department of Forest Fuels for the First Nations Emergency Services Society.

New Zealand was my last fieldwork location; fieldwork was completed there in December 2018. Significant time was spent before this fieldwork to network and plan that case study. The senior research programme advisor, research advisor, and national Māori advisor from Fire and Emergency Services New Zealand, as well as a social scientist from the Scion Research Institute and my master's academic supervisor Dr. Tara McGee from the University of Alberta, were all instrumental in my success with obtaining data to support my research. My first interview took place with the rural fire officer for areas one and two of the north island at the fire station hall in Auckland, followed by my interview with the regional rural fire manager of the north island in Rotorua at their local station fire hall. This interview was followed by my interview with the senior research programme advisor for Fire and Emergency Services NZ at the National Headquarters in Wellington. Next, I travelled to Christchurch on the south island to interview an Indigenous Māori leader, Melanie Mark-Shadbolt. Once I returned to Wellington via the ferry to the north island, I completed my government interviews with the national manager of rural fire with Fire and Emergency Services NZ. During my course work portion of my master's degree program at the University of Alberta, I completed a small project as part of a sociology course in which I interviewed the national Māori advisor from the Office of the Chief Executive of Fire and Emergency Services NZ. With their permission, I have used the data collected from our Skype interview in December 2017 as part of the data for this thesis.

4.4.4. Semi-Structured interviews

Semi-structured interviews were the main method used to collect data for my research. This method was appropriate to achieve the aim of my research given the differences between case study jurisdictions, the diverse backgrounds and cultures of participants, as well as the differing experiences of each participant. This style of interviews gave participants the freedom to expand on their experiences in more detail, which led into personal, community, or government histories, and their interpretations of those experiences and relationships for both Indigenous and government leaders (Bryman et al., 2012).

I completed 29 semi-structured interviews for this study, which varied between 30 and 120 minutes in length. I commenced each interview by thanking them for their time to support my research and asked them to tell me about their community or organization. Interviews with government fire management staff were typically completed in office settings or over the phone. A total of seven government interviews were conducted over the phone and 10 were completed in person. Interviews with Indigenous leaders were conducted in their homes, at restaurants, at First Nations band offices, or over the phone. A total of six in-person interviews was completed with Indigenous people and six interviews were done over the phone. During the interviews, Indigenous leaders and senior government officials were asked about their understanding of how Indigenous people are engaged in wildland fire management, the potential barriers to engagement, and recommendations to improve engagement practices. An overview of participants including their locations, identities, roles, and affiliations by geographic location is included in Table 1 of Appendix A.

4.4.5. Data Analysis

Once the interviews were completed, they were professionally transcribed in March 2019. After receiving the transcribed interviews, I read through each transcript thoroughly two to three times to check for errors and to start the data analysis process. Using a thematic analysis approach, I first became familiar with the text to see if themes naturally emerged (Creswell, 2012). Second, I began reviewing the data line by line and highlighting certain phrases, opinions, and sections of text, and I developed corresponding codes that helped explain the text. This process provided an overview of the main points in a condensed format to support the development of the next step of generating themes. Themes arose through the review of the various codes which were combined in some cases under one theme. The next step involved reviewing the themes to ensure that they accurately represented the data and then moving to define and name the themes; this step was important as it required me to ensure the themes, I was using were helping me to understand the data (Braun & Clarke, 2006). I used NVivo 12, which is a qualitative data analysis application that allows researchers to collect, organize, analyze and visualize unstructured or semi-structured data. Once I identified thematic categories, I developed a coding framework (Appendix B). I then began to cross-reference the themes within the coding framework against the data sets for the Indigenous and government leaders. At the initial stages of the coding and thematic analysis, my supervisor and I reviewed four transcripts, two Indigenous and two government together to ensure rigor and accuracy.

As indicated by Bryman et al. (2012), unlike quantitative data collection techniques that require data to be molded into preconceived standardized codes, in qualitative data analysis, the researcher's interpretation of data shapes their emergent codes in grounded theory. Furthermore,

through the process of open coding, which requires a process of breaking down, examining, comparing, conceptualizing, and categorizing data, the process remains close to the data and surrenders concepts that are grouped to form categories.

4.5. Ethical Considerations

All research requires forethought and consideration of the potential impacts to participants engaged in research. There should never be harm or inflicted hardship on participants to satisfy a research goal even if there are potential broader benefits for society. Furthermore, it is particularly important to recognize the cross-cultural variances and ethical issues of interpreting someone else's culture for one's own reasons (Hay, 2010). This is vital given Indigenous people's involvement in my research from multiple jurisdictions in Canada and from New Zealand. In the past, research and government assimilation practices involving Indigenous people have caused emotional and physical distress. Indigenous people and their culture have been exploited through various mediums which has led to the existing distrust being displayed by Indigenous people towards government and settlers.

Throughout the course of my interviews with all participants, I encouraged participants to speak their truths by creating a safe space, outlining all the details of my research up front, and answering any questions they had prior to the interview commencing. I engaged in meaningful dialogue with participants several times before the interviews, inquiring about their communities and experiences to aid in rapport development to reduce the 'researcher' and 'researched' persona often felt through the process. I wanted participants to feel safe reaching out to me once the interviews were completed, and many contacted me later to share later thoughts.

In addition to undertaking personal due diligence and checking my own biases, I also adopted the principles outlined in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). UNDRIP principles provided guidance during stages of planning and development of my research methods and then implementing these methods with Indigenous participants, as well as during my analysis and write-up of the data provided. UNDRIP is an international treaty adopted by the United Nations (2007) outlining the rights of Indigenous people around the world. This is applicable to my research as the UNDRIP principles provide an overview of the fundamental beliefs that Indigenous peoples have scripted and put forward in an effort to educate people on their desired treatment, engagement and outcomes. Each article outlines a specific declaration of Indigenous rights to be honoured; for example, Article 32 states, “Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources,” which is a principle that is relevant to my research.

I followed and adhered to the Tri-Council policy statement, which is a Canadian guideline for the ethical conduct of research involving humans and/or human biological materials. For my research, I paid close attention to the ethical guidelines pertaining to consent, fairness and equality, privacy, and the guidelines on research involving First Nations, Inuit and Metis Peoples of Canada (Government of Canada 2019). In terms of confidentiality, research participants were provided with the option to have their name, job title, community and/or organization included in this thesis and other outputs from this research. All participants opted to have this information included to support their experiences and stories. More specifically, the ethical framework of the Tri-Council Policy Statement outlines attention towards 1) respect for persons and their

distinctive Indigenous world views and culture to be passed down through generations; 2) overall concern for the welfare of participants, carefully considering Indigenous people's social, physical, economical, and cultural environments; and 3) justice, emphasizing the necessary controls needed by the researcher to ensure there are no power imbalances or avoidable exploitation of Indigenous people (Government of Canada 2019). I was able to implement and adhere to all three requirements before, during, and after my research with Indigenous leader participants. I ensured that participants understood that my research was an opportunity for their distinctive views to be heard without impacting their personal and community welfare. I wanted to be able to provide participants with a safe platform to communicate their experiences and interpretations of those experiences without judgement.

During my research, I interviewed numerous Indigenous leaders which involved requesting their interpretations of the relationship between the government fire management agencies in their areas and their communities or organizations. Maintaining the integrity of the Tri-Council principles, I approached my research with, as a top priority, a commitment to engaging Indigenous and government participants with an open, communicative process and by offering fundamental knowledge of the purpose of my research, including why I felt it was needed and how they could contribute, if they chose to. I also provided information about my background, both personally and professionally, so that they were able to connect to my goals and understand my drive for positive, transformative change.

4.6. Rigor

Research rigor requires an in-depth examination of the researcher's validity and the reliability of the research conducted. Lincoln & Guba (1985), Guba & Lincoln (1994), and Baxter & Eyles (1997) explain that it is essential to review the authenticity and trustworthiness of qualitative research. Authenticity relates to originality of the research conducted and the researcher's ability to ensure the data analysis is not skewed to researcher biases or persuaded to meet other agendas. Trustworthiness includes credibility (internal validity), transferability (external validity), and dependability (Maxwell, 2013; Hay, 2010).

The world is interpreted in a variety of ways, and we develop social constructs based on our interpretations. There are several internal and external factors that form our opinions and elucidations. Therefore, credibility is fundamentally important to administer in the research process, as the research needs to accurately reflect the thoughts and experiences of those who participate in the research. For my research, I have followed the ethical controls previously discussed before and after the interviews, as well as managed the threat of researcher bias that often appears in the selection of data used and the conclusions drawn (Maxwell, 2013) through discussions with my supervisor, Dr. Tara McGee, during my data analysis process.

Transferability refers to the ability of one's research to be applied to other times, places, and people (Bryman et al., 2012). It can also be achieved through careful selection of cases and creating useful theory that is not too abstract or case-specific (Hay, 2010). To achieve transferability, it is the responsibility of the new researcher to review the context of the existing research and assumptions before deciding if transferability is applicable and appropriate. Bryman et al. (2012) encourage researchers to follow what is called "thick description," where significant details of a person's culture and experiences are captured exclusively in an effort to provide

others with the details needed to assess whether there is transferability or not to their environments. While I did provide individual background and context for each jurisdiction included in this research additional research and exploration would be required by future research to capture changes that naturally occur with elapsed time.

Dependability examines the reliability of one's research against peer and supervisor review throughout the research process (Bryman et al., 2012). This can also be called the auditing process. As indicated above, regular meetings with my supervisor helped to alleviate any misjudgment during the data collection and analysis process to ensure that the proper research process was followed and continuously verified and questioned.

The fourth and final criteria of trustworthiness for the qualitative research process is confirmability, which is a standard to enact good faith by the researcher during social research (Bryman et al., 2012). Preventing personal biases in the form of research misconduct during the process and interference of research findings is essential to the validity of one's research and credibility at large. To ensure I achieved this criterion, I met with my supervisor, Dr. Tara McGee, several times to discuss the nature of interviews, the thematic analysis process, emergent themes, and coding framework development to support and confirm accuracy in my analytic findings.

Throughout my results chapter, I included several quotes from participants to allow their words to be expressed rather than have me, as the researcher, paraphrasing their thoughts and potentially obscuring the participants' intents (Baxter & Eyles, 1996).

4.7. Reflexivity

I had to maintain acute cross-cultural sensitivity awareness for each participant involved in my research and to navigate the cultural uniqueness of the varying locations in Canada and New Zealand with government leaders, Indigenous leaders, communities, histories, and preexisting relationships between these groups or the lack thereof. In addition to cultural sensitivities, the notion of power relations was also at the forefront of my interactions with all participants. I identify as a white female who is employed by the Ontario government, and I recognized these outward appearances and affiliations could influence participants' perceptions of me as well as their ability to openly express themselves in a safe space (Baxter & Eyles, 1997). My employment as a government employee may be interpreted as perceived bias, and thus it was critical to communicate who my employer was to the Indigenous leader participants upfront prior to interviews so that they could ask questions before making the decision to participate in my research.

As an employee of Aviation, Forest Fire and Emergency Services within the Ontario Ministry of Natural Resources and Forestry for the last fourteen years, I have worked at varying levels of the organization. My career with AFFES started as a Fire Ranger, this experience required working in remote First Nations communities for fire response and planning initiatives, so I have several personal experiences that have shaped my social reality and views specific to wildland fire management. Through my employment experiences, I learned there are gaps in communication and inclusion between government and Indigenous communities for a variety of reasons. These gaps inspired my drive to complete this qualitative master's research. In an effort to mitigate perceived biases by research participants potentially from my affiliation to the government as my employer or from my race, I maintained transparency about my research

intentions and expressed my goals for my research from the beginning, as well as provided individuals with personal details about my life and employment experiences. These exposures gave a sense of connection and understanding to my motivations, which also encouraged participants to ask questions and feel engaged.

My research goals are to improve the overall communications between government and Indigenous peoples, and as a result, to also improve the quality of life and opportunities for Indigenous peoples with regard to wildland fire management. These positive intentions encouraged strong support by Indigenous and government leaders to contribute to my research.

4.8. Chapter Summary

In this methodology chapter, I explained why I chose a qualitative research method as the most appropriate choice to achieve the aim of my study objectives, including understanding how and why Indigenous people are engaged in wildland fire management. Data collection occurred through semi-structured interviews using a multiple case study approach. Furthermore, I described the approach used for coding data and the completion of thematic analysis followed by a thorough research process. Lastly, I explained how rigor was applied in conjunction with ethical considerations and the reflexivity actions taken to prevent research biases.

Chapter 5. Results

5.1. Introduction

This chapter is divided into six sections with one for each case study: 1) British Columbia, 2) Northwest Territories, 3) Saskatchewan, 4) Ontario, 5) Nova Scotia, and 6) New Zealand. Each section presents results from the Indigenous leaders and government manager interviews. A condensed version of the results is also presented in table form in appendices C through I.

5.2. British Columbia, Canada

5.2.1. Indigenous Leaders

Indigenous perspectives: How and why Indigenous people are engaged in wildland fire management

In 2003, when wildland fires burned half of the Neskonlith First Nation's reserve number 1 and threatened reserve number 2, there was very little engagement with British Columbia Wildfire Service (BCWS). People on both reserves stayed behind to protect their homes and fight the fire. These fires had considerable impacts, and there were also concerns about the impacts of fire suppression.

The fire devastated the whole area where we hunt and fish and picked our berries and medicines and we were really concerned on what they sprayed on it. We weren't really fully informed [by BCWS] regarding the tactical strategies used to suppress the fire). And how the animals were being affected or the water was being affected. It took a long time to regenerate. It's still regenerating today in 2018.

~Chief Judy Wilson,
Neskonlith First Nation, BC

Fifteen years later in 2018, a tripartite memorandum of understanding (MOU) was signed between the Neskonalith First Nation and the federal and provincial governments under Emergency Management BC (EMBC). The MOU identifies roles and responsibilities before, during and after an emergency. Emergency Management BC is the provincial coordinating agency that supports linkages between government and First Nations in the province related to emergency management, including preparedness, response, and recovery. During our interview, Chief Wilson indicated that there was very little engagement between the government and Neskonalith First Nation during wildfire events until the signed MOU went into effect.

When a wildfire occurs, the Neskonalith First Nation is required to call the federal government, who will assist the First Nation with financial and personnel support during an emergency. However, Chief Wilson explained that once they contact the federal government, the service they receive is inadequate. The Union of British Columbia Indian Chiefs is strongly advocating for stronger inclusion and support to First Nations by the federal government when emergencies occur.

In 2017, the Williams Lake Indian Band was evacuated due to the threat of wildland fire to their community. This was a traumatic experience for residents.

I was evacuated from my home, and I'm a former wildfire crew leader and understand seeing wildfire activity. And when I'm sitting at home and the power goes out and my kids are freaked out and the cops are banging on your door, telling you that you have to get out of the community because your home could burn down. That's a pretty traumatic experience that my kids and even myself will never forget for the rest of our lives.

~Chief William Sellars, Williams Lake Indian Band, British Columbia

Communication and engagement between British Columbia Wildfire Service and Williams Lake Indian Band during this wildfire emergency was identified as being very poor but understandable considering the chaotic circumstances of the wildfire as indicated by Chief Sellars. He stated that engagement with BCWS has not been consistent, but he felt that it has improved since this evacuation.

Because of the wildfires, I think the communication has gotten a lot better. When disaster does happen there's conference calls that are set up to keep everybody updated and we're starting to see change. But like anything, it's not perfect and it needs work and that's something we're keeping in mind as we move forward.

~Chief William Sellars, Williams Lake Indian Band, British Columbia

Following this evacuation, the Williams Lake Indian Band conducted several collaborative fuel-free management projects with BC Wildfire Service to reduce the wildfire risk to their reserve, including brush work and prescribed burning. BC Wildfire Service provides the First Nation Band with education, tools, and resources to support the spring burns, and they are in the community to work alongside community members and support them with equipment, knowledge, and techniques to ensure a safe and effective burn is completed. Community members who participate in the spring burn program learn about fire suppression and gain wildfire knowledge from BC Wildfire Service. As part of this wildfire mitigation work, the community has also developed a wildfire recovery plan with financial and development support from the Red Cross. This plan outlines the agencies and people available to support the community after a wildfire event.

The Neskonlith First Nation is also supported and engaged by the First Nations'

Emergency Services Society (FNESS) of British Columbia, which is a not-for-profit organization that supports First Nations communities in BC related to wildfire emergencies. First Nations' Emergency Services Society of BC is a conduit for BC First Nations communities and government agencies that mutually supports fire services, such as forest fuel management and emergency management. The Neskonlith First Nation identified the support they received from FNESS to be instrumental in providing band members with adequate wildfire training as well as with evolving their emergency response plan. Darrick Andrews, the participant I interviewed from FNESS indicated that they were aware that engagement of First Nations by the British Columbia Wildfire Service is not consistent across the province. Furthermore, because the area of expertise of FNESS is in fuel management practices, they have had many conversations with BC First Nations communities who expressed the desire for autonomy to some degree in wildfire response and hope to eventually be outfitted with the financial resources, personnel, and knowledge to take ownership of the annual spring prescribed burns in their communities.

Lastly, there was a provincial government program recently released in 2018 called the Community Resiliency Investment Program, which enables First Nations to apply for funding for wildfire risk reduction (fuel reduction) on provincial crown land. More than 120 First Nations and local governments have received funding for amounts between \$25,000 to \$150,000, depending on the community's level of risk to wildfire threat.

Indigenous perspectives: Barriers to engagement of Indigenous people in wildfire management

Barriers to engagement were identified by participants from Williams Lake Indian Band, Neskonlith First Nation, and FNESS. The identified barriers, described below, are preventing the

development of stronger partnerships and support between Williams Lake Indian Band, Neskonlith First Nation, FNESS and the British Columbia Wildfire Service.

Chief Sellars from Williams Lake Indian Band identified a lack of funding by the province to employ people within the First Nation who could assist with the development of emergency response plans, evacuation and repatriation of their members, relationship building with other First Nations communities or government agencies, and fire prevention and mitigation education. Currently, the community's workload is at maximum capacity and is shared between band members who are already committed to other key community priorities, including business, forestry, housing, infrastructure, education, and social programming, and they cannot take on additional emergency management responsibilities.

The chief of Neskonlith First Nation identified a lack of inclusion and inadequate engagement specifically related to meetings that happened in their area with government staff and other stakeholders before, during, and after emergencies. The opportunity to sit together to complete an after-action review of the fire emergency or preplanning before an emergency could alleviate issues faced by both groups. The chief expressed sincere interest in understanding the gaps in service, emergency management process, and structure so that she could develop tools and resources for the community's safety and knowledge moving forward.

The interview participant from the First Nations' Emergency Services Society identified the technical scientific jargon that BC Wildfire Service uses when explaining the wildfire situation as a barrier to the relationship with First Nations. Not using locally trained First Nations firefighters is also a barrier. Some communities have people with significant fire backgrounds, but because they are not trained to the provincial standard or by the province, they are not hired

during wildfire activity. Instead of hiring First Nations residents, the provincial government often employs international firefighting crews from New Zealand, Australia, Mexico, or Africa. The optics of the province hiring international crews instead of investing in their own First Nations communities and offering them an opportunity to fight the fire creates feelings of frustration in First Nations communities and raises the question for them of why they were not selected to support firefighting efforts when they have trained staff available and/or willing community members.

5.2.2. Government Leaders

Government perspectives: How and why Indigenous people are engaged in wildfire management

The interview participants from BC Wildfire Service identified their primary stakeholders as being the logging and fibre industry, structural fire departments, municipal governments, regional districts, BC Cattlemen's Association, hunting and tourism outfitters, and rural communities. Indigenous communities are considered partners along with other provincial government ministries such as Emergency Management BC, who provide emergency response services to municipalities and First Nations communities. Government participants indicated they have adopted a collaborative partnership approach with First Nations communities since 2017 building plans that include operational response strategies during wildfire activity. At the time of the interview, BC Wildfire Service did not have a clear guiding directive on how to engage with Indigenous groups and instead only engaged with First Nations communities during times of wildfire activity. In 2017, the BC Wildfire Service (2019) indicated that the province had suffered 2,117 wildfires and 66 evacuations that affected 2,211 properties, costing the

province \$615 million in fire suppression. This brought immense scrutiny to existing processes by First Nations groups who asked the province to conduct a mass audit and adjust their approach. Following the busy and high-profile fire season of 2017, BC Wildfire Service adapted to invite First Nations communities to be a part of their incident command structure when wildland fire impacts their traditional territories.

In 2018, BC experienced another challenging year of wildfire activity; however, due to improvements made after the previous year, which increased collaboration between BC Wildfire Service and First Nations communities, there was less frustration and a more streamlined approach to wildfire response. Some improvements in the relationships between BC Wildfire Service and First Nations communities include unstructured meetings to complete after-action reviews and spring meetings to discuss new information and the upcoming wildfire season:

...Generally, what we're going for is, what I ask my staff is that in your zones you need to know everybody by their first name. And that happens. There are meetings that happen over a cup of coffee, very unstructured, to those after-action reviews or spring meetings where there's more structure to it...the spring meetings are twofold. One is to provide any new information or anything new that's occurred over the winter or some new direction or whatever. And then to talk about the upcoming fire season. In BC there is a great variety of First Nations and some, there's treaty lands, there are lands that are almost under treaty and there are lands that aren't. So, depending on where you are that meeting could vary. If it's a treaty land then we go over their fire management plan and just review things like that, talk about response, talk about prep. In some cases, some First Nations may have crews or equipment.

~Tony Falcao, Northwest Fire
Centre Deputy Manager, BC
Wildfire Service

As indicated by the executive director of BC Wildfire Service, Ian Meier many relationships with their stakeholders and partners have been previously built during an emergency and acknowledge the timing of this engagement is not ideal when they are also

testing the relationship. Thus, more recently, engaging First Nations communities prior to the fire season has become a priority for BC Wildfire Service to develop or re-establish linkages and lines of communication in an effort to be prepared to respond to wildfire emergencies.

So, historically we had very little contact [with First Nations]. We didn't talk outside of the season, we didn't talk inside the season, unless there was a fire close to a community or in their territory and the band would go to the IMT and say we want people working, we want jobs. And then we would hire a few locals for a few weeks, and we left. So, very little contact historically. So, one of the barriers is lack of a relationship. And this philosophy for me goes for all British Columbians, we need to have a relationship, and not all British Columbians are going to have the same relationship with us.

~Ian Meier, Executive Director, British
Columbia Wildfire Service

The BC Wildfire Service indicated training of Indigenous firefighter crews occurs directly through the First Nation and FNESS in BC and is not the responsibility of the province. The federal government, through Indigenous Services Canada, provides funding to communities annually to engage in preparedness, planning, and response initiatives, of which wildfire training is a part.

In 2018, the BC Wildfire Service program hired a director for partnerships and Indigenous relations. This position is the link between First Nations communities and BCWS to help progress relationships, partnerships, planning, policy, and other items brought forward for discussion.

Government perspectives: Barriers to engagement of Indigenous people in wildfire management

In 2018, the British Columbia Wildfire Service identified that a lack of employee training about Indigenous history and cultures was a barrier. Since then, they have commenced the

development of Indigenous cultural training and education to be delivered to BC Wildfire Service employees with support from the province's Ministry of Indigenous Relations and Reconciliation.

A second barrier identified by participants is the large number of provincial, federal, and non-governmental organizations involved during the recovery phase when a wildfire impacts a First Nations community. The First Nation deals directly with the BC Wildfire Service for the response effort and then must deal with numerous other agencies for cost recovery, logistics, and recovery from the incident, including Emergency Management BC, FNESS the federal government, regional districts, and municipalities. This process can be overwhelming for First Nations communities and naturally creates barriers of communication when the process is convoluted and multi-tiered.

Thirdly, government interview participants indicated the tripartite relationship with First Nations and the federal and provincial governments has been challenged on its effectiveness related to roles and responsibilities in wildfire response. The lack of clarity in roles and responsibilities has created barriers of frustration between the federal and provincial governments and First Nation communities. A newly developed tripartite agreement was underway and to be implemented in 2019 that will explain roles and responsibilities more effectively. Additionally, the tripartite agreement's new approach involves quick government-to-government calls to discuss who will cover the costs associated with any emergency response so that the First Nations community receives answers in a timely manner.

A fourth barrier brought forward by the BC Wildfire Service executive director, Ian Meier is how their evolving service delivery mandate related to stakeholder inclusion in wildfire

planning and response requires time for fire agencies to catch up. Previously, fire programs were only responsible for providing fire prevention messaging to the public and putting out fires; now, they are integrating broader emergency response elements into their service delivery mandates that includes proactively planning with stakeholders and partners, engaging Indigenous communities and the public every step of the way in fire response and decision-making.

Yes, well, it's an area that, for our program, we've really not had to be completely engaged in, and this goes not just for stations but a lot of our stakeholders. We go in, and there's a fire and we say everybody stand back, we're here. And we do it and we deal with as best we could and then we leave, and everybody else is left to clean it up. It's like we're doing a big shift, and we're not doing that [only putting out fires] anymore. We can't do that anymore.

~ Ian Meier, Executive Director,
British Columbia Wildfire Service

The last barrier identified is fear of reprisal. Some BC Wildfire Service employees are concerned that their engagement with First Nations may interfere with current treaty negotiations, or they fear they may be criticized for their actions. BC Wildfire Service does not want to interrupt any negotiations between other parts of government with First Nations communities. However, BC Wildfire Service needs and wants to build a relationship with First Nations communities, as explained by Ian Meier, executive director of BCWS.

5.3. Northwest Territories, Canada

5.3.1. Indigenous Leaders

Indigenous perspectives: How and why Indigenous people are engaged in wildland fire management

Dieter Cazon, the interview participant from Liidljì Kúé First Nation's indicated that, in collaboration with the Department of Municipal and Community Affairs (MACA) and the local municipality of Fort Simpson, they have developed a wildfire emergency response plan. This emergency plan is the guiding directive of the First Nation and the municipality to support wildfire responses including evacuation procedures. The plan outlines the roles and responsibilities of the community and other agencies who support response and recovery efforts.

The Department of Environment and Natural Resources (ENR), NT holds annual meetings for all communities that provide education about mitigation measures that can be implemented in the community. During the fire season, the Department of Environment and Natural Resources maintains a wildland fire situation update page on their website that is very useful in keeping people abreast of the fire situation for their territory by providing information on lightning strikes, as well as the location and size of forest fires. Additionally, during wildfire events, Environment and Natural Resources informs the chief about the existing fire situation and any issues that may be anticipated in the coming days. This enables the chief to prepare the community members for potential evacuations.

In 2015, Deh Gáh Got'ie First Nation experienced a large fire that encroached on their community. Chief Canadian recalled that the chief and councillors were not informed directly about the fire situation by Environment and Natural Resources, but rather the provincial government provided information to the hamlet and the hamlet provided the information to the community. The community has many locally employed forest firefighters that work on suppression crews in Fort Providence, which in an effort that alleviates unemployment in the

community. Finally, Deh Gáh Got'ie First Nation does not have an annual or regular engagement meeting with the local department of Environment and Natural Resources specific to wildland fire.

Indigenous perspectives: Barriers to engagement of Indigenous people in wildland fire management

Barriers were identified by both First Nations. The Councillor of Liidlji Kúé First Nation, Dieter Cazon, said that a lack of inclusion in decision-making has created mistrust.

It's hard for First Nations to trust some of the practices by the provincial and territorial firefighters. Not the firefighters, the decisions that are made. Because they pick and choose which fires, they're going to fight and it puts a lot of pressure on some smaller families that, no, they can't bounce back from a fire [income loss for some families from burnt traplines or burnt forest, and removal of hunting, gathering grounds from fire].

~Dieter Cazon, Councillor,
Liidlji Kúé First Nation, NT

First Nations communities are not engaged with in a manner that promotes understanding around why certain areas are protected, while others are left to burn. As Dieter Cazon explained, the type of engagement used by government fire and natural resource staff can lead First Nations communities to feel as though government staff are not genuinely there to listen to the concerns or suggestions provided by the community but rather only to inform First Nations communities of the matters at hand. This approach does not build trust for members of the Liidlji Kúé First Nation in government.

Secondly, there is a lack of human resource capacity in their community to support wildfire and emergency management, which as a result creates a barrier to engagement and aligns with the concerns of many other First Nations communities.

A lot of First Nations, we want to do the work. We don't have the [human resource] capacity to do the work. We don't have the dollar budgets to do a lot of the stuff that they say they [Department of Environment and Natural Resources, NT] want to do...help us do it so we can or set it up so we can do that stuff. If you [have a] vested interest in this area, if it's a mine it's like 50-75 years (operating) or 30-35 years or... But for us, we were here before [the mine], during and after all of this is done. We're not going anywhere, so that's our vested interest.

~Dieter Cazon, Councillor,
Liidljij Kúé First Nation, NT

Liidljij Kúé First Nation identified a gap in communication channels used to disseminate information. Some people within the Liidljij Kúé First Nation are technologically savvy and comfortable using the internet to receive information from ENR; however, there are many elders in the community who are not and who require the information to be printed. It would be helpful if ENR forwarded daily, weekly, or bi-weekly reports to the First Nation for the band office to print for their membership as an alternative to online information updates.

There are differing views between the Department of Environment and Natural Resources and Liidljij Kúé First Nation regarding where and how the profits should be distributed from harvested timber after a wildfire. Dieter Cazon explained that there is a lack of adequate engagement by ENR with their First Nation's community to discuss appropriate allocation and sustainability measures. In the recent past, there was a forest fire that damaged part of the harvestable timber in the community's territory, and engagement between both parties proved unsuccessful:

...that's how we live, we cut that wood and use that wood for winter or what have you...but there is the whole match between the First Nations and government in between that try to harvest this wood for other things. It just leaves us. After a burn there were meetings for three years and by the time the meeting was all said and done nothing was accomplished and all the wood rotted.

~Dieter Cazon, Councillor,
Liidljij Kúé, First Nation, NT

Deh Gáh Got'ie First Nation also identified three barriers to their participation in wildland fire management. First, the newly implemented 2010-2011 WFX fitness test is a nationwide government test that ENR mandates all forest firefighters to complete prior to receiving an employment contract. The test is very strenuous and has significantly impacted those firefighters who had been employed in the firefighting ranks for years and now are unable to successfully complete the test. The second barrier identified is the lack of autonomy by the Deh Gáh Got'ie First Nation to conduct hazard reduction burning; additional communication is required to support the future hazard reduction needs of the community with ENR. Lastly, Deh Gáh Got'ie First Nation's biggest community barrier is the lack of employment and adequate housing, which requires people to leave the community to receive additional education and training. This directly impacts the number of people available for wildland fire training and development.

5.3.2. Government Leaders

Government perspectives: How and why Indigenous peoples are engaged in wildland fire management

The Department of Environment and Natural Resources in Northwest Territories (NT) identifies their stakeholders to be the public, industry, other government departments, Indigenous people, Indigenous governments, renewable resource councils, and renewable resource boards. ENR's wildfire director identified that there are settled land claims and unsettled land claim areas in NT. In settled land claim areas, it is very clear who the fire agency needs to engage with and identify who is responsible for what action in their First Nation government; these actions

are then filtered to ENRs' partners, such as the co-management of renewable resource board. However, in unsettled land claim areas, ENR engages multiple individual bands and Indigenous organizations. Typically, in land settlement areas, they have not seen a lot of fire in the last decade, which has not required ENR to work collaboratively with them outside of the usual broader business of the department, which may include FireSmart initiatives, providing fire season annual updates, and any planned forest management actions or changes. Thus, engagement occurs more with unsettled First Nations land areas in NT.

ENR keeps Indigenous communities informed about the fire situations, risks and next steps, but as Richard Olsen, Fire Operations Manager interview participant indicated, they have found that First Nations communities would like to leave the technical aspect of fire management to ENR, and First Nations groups will provide comment or concern if necessary. The ENR's director of wildfire, Michael Gravel said that there has not been a lot of working together on issues, but Indigenous peoples are informed.

Specific to forest fire management and wildfire situational updates, government interview participants, Richard Olsen indicated engagement with Indigenous peoples in NT by ENR covers a large area and typically is coordinated by the local regional support teams from the five government district offices. ENR recognizes their responsibility to engage with the varying First Nations communities, tribal councils, and Indigenous governments, and do so under the guidance of internal protocols and proven past communication methods, including social media and keeping their website up-to-date with relevant wildfire information. However, both Michael Gravel and Richard Olsen, interview participants from ENR understand their limitations and acknowledge that their relationships with First Nations communities are not consistent, with

some First Nations communities more engaged than others. Interview participants from ENR recognize the requirement to establish and further develop linkages so that they are consistent across the territory. During the peak wildfire season, ENR invites concerned community members to attend public meetings when wildfire activity is threatening their communities. However, during the off-peak season from November to March, ENR interview participant Richard Olsen has found receptiveness to engagement to be most successful when the local managers and superintendents in the regions cultivate and maintain relationships with First Nations communities and their people. This is achieved using active listening and providing committed, unstructured time to the First Nation community, which ultimately builds the necessary trust needed for collaborative future planning and action.

Of the communication mediums used by ENR with Indigenous communities during times of escalation and generally throughout the fire season, social media has been the most effective. Michael Gravel and Richard Olsen, interview participants indicated they utilize their social media platforms and website to distribute information in addition to one-on-one discussions with Indigenous groups. If fire is threatening a community, ENR will provide the local chief with an opportunity to take a helicopter flight to scan over their community and traditional territory. Richard Olsen, the ENR interview participant explained that representatives from their fire management agency will explain areas of concern and provide details of their planned response objectives, and request input from the chief or designate. The consultation aerial flight is mandatory for all incident commanders operating in or around First Nations communities and traditional territory.

A constructive engagement tool used by Environment and Natural Resources after a wildfire are after-action reviews (AAR) with affected communities by fire management agencies, which are crucial to the future maturity of planning and decision-making in wildfire management. People who have experienced large wildland fire events in the past often express feelings of trauma during present-day fire activity, which ultimately shapes their policy, procedures, and response expectations. Michael Gravel and Richard Olsen, ENR interview participants expressed that the needs of First Nations communities vary from community to community, as do the relationships with each First Nation community and ENR.

Michael Gravel and Richard Olsen from ENR recognize that the engagement process is about communication and about understanding the needs of the varying First Nations bands in NT and each of their understandings of wildland fire on the landscape:

...that whole interaction between fires [and people], what they're really doing and how they're really behaving and the communities' acceptance of it is changed. I would say in a very blunt way, they're more scared. There's the Fort McMurray syndrome. They're looking at CBC News. CBC News is telling them fire is destroying communities, it's doing all this bad stuff, and that's what they think of fire. And to put the idea of prescribed burning to protect their community, in a lot of people's brains, you can just see the whites of their eyes. They get scared, you can just see it, in a general sense.

~Richard Olsen, Fire Operations Manager,
Environment and Natural Resources, NT

ENR plans and budgets annually for community visits for engagement purposes, and they have a target for each of the five regions to host or participate in at least one, if not two, meetings annually with First Nations communities.

We have five regions. They pretty much mirror the land claims. Some regions arguably do maybe a little better job than others in terms of getting out there annually to speak to their folk. Some of them, it is quite easy to. So, for example, in the Inuvik region, they are a little bit different, in that they have what is called Renewable Resource Councils. So,

there are elected people from the community, who are then tasked with being aware and dealing with renewable resource issues. So, fire is part of that renewable resource issue.

~Mike Gravel, Director of Forest
Management Division, Environment and
Natural Resources, NT

To foster relationships and encourage engagement, ENR employs one Aboriginal liaison coordinator for the Forest Management Division. Their responsibility is to coordinate meetings with communities within the five regions with fire management staff regarding outreach and communications to each community. However, as Richard Olsen, the ENR interview participant indicated, engagement is more than having a meeting and showing up:

If you really want to deal with a community, you have to move at the community speed, and the community, they overall like to take care of themselves, they care about everybody within the community, which means that everybody is expected in some way to get participation and to have a say. You have to allow for sometimes people having thoughts and ideas that may not be arguably accurate, but they are what they think, and they are what they feel.

Government perspectives: Barriers to engagement of Indigenous people in wildland fire management

ENR interview participants, Michael Gravel and Richard Olsen explained there are still barriers to overcome to improve the agency's relationship with First Nations communities. A common barrier expressed by First Nations was the fear and mistrust that the government will make a rule that infringes on First Nations communities' land claims. ENR Executive Director, Michael Gravel understands First Nations communities' fears to predominately stem from a misunderstanding about the parameters of their land claims. Another issue brought forward by

fire operations manager, Richard Olsen is the turnover in ENR staff, as well as in First Nations communities. This turnover requires regular rebuilding or establishing of new relationships.

Additionally, ENR interview participants understand that First Nations communities experience human resource capacity issues, which they believe creates a barrier to wildfire engagement opportunities. It is their understanding that most communities have two or three people to support multiple boards and committees to the point that these individuals are overwhelmed and burnt out. Therefore, if fire is not on the ground or smoke in the air, ENR feels it can be very difficult to encourage engagement, and rightfully so, as First Nations are supporting many important issues for their communities.

Also, the end of fire season aligns with hunting season and, for many Indigenous peoples who maintain a subsistence way of living, this cultural practice of harvesting takes precedence over annual fire after-action reviews with ENR, creating a timing barrier for engaged discussion. As indicated by ENR's Richard Olsen there have been circumstances where meetings have been arranged in advance with the chief to meet in their community, and when ENR arrives, the chief is out of the community. If ENR has invested staff time and financial resources to get to the community by plane or to take a very long drive and there is no meeting, connection and building of relationships can be impacted.

5.4. Case Study 3: Saskatchewan, Canada

5.4.1. Indigenous Leaders

Indigenous perspectives: How and why Indigenous people are engaged in wildland fire management

Engagement with the Waterhen Lake First Nation (WLFN) regarding wildland fire management commences with their Meadow Lake Tribal Council (MLTC). The tribal council brought all nine communities together to develop a database that houses specific information related to each community's fire management resources as well as information on contacts in the province and at the federal level that support emergency response. This collaborative opportunity with MLTC for communities provided generous insight into the multiple levels and organizations involved during emergencies:

I was able to learn about our database system, what resources we have and the people that were involved, but not directly been able to sit with Wildfire Saskatchewan Branch (WSKB) ...I personally never had anybody from the Department come to our community and say we would like to, you know, have a discussion in case...it was always done through the MLTC...But it's always been our stance that the MLTC FN communities are sovereign communities; we don't encourage MLTC to speak on our behalf. So, it's kind of a hit or miss thing to hear from WSKB.

~Chief Joanne Roy, Waterhen Lake First Nation, Saskatchewan

As Chief Roy from Waterhen Lake First Nation explains, the MLTC is the liaison between Wildfire Management Saskatchewan (WMSK) and their community regarding forest fire suppression crews that are employed during the summer months; First Nations fire suppression crews are funded by WMSK but organized through the MLTC. Chief Roy indicated that during times of wildfire activity around Waterhen Lake First Nation, WMSK engages the community regarding fire suppression and response efforts.

Engagement by the province with Waterhen Lake First Nation ultimately stems from the community's treaty with the federal government and from the guidance and advice of community elders. Waterhen Lake First Nation is supported by the federal government and,

because the federal and provincial governments are partners as they relate to service delivery within the province, the First Nation community is required to have a relationship with the province. In the past, there have been instances in land management planning and wildfire response when the province has asked for the First Nation community's input as to where fire would offer benefit on their traditional territory specific to wildlife, berries, medicines, and other traditional land uses.

Waterhen Lake First Nation experienced support from WMSK during the forest fires of 2018. There was a government officer assigned as an Aboriginal liaison to their community who stayed throughout the duration of the forest fires and informed the chief and council about the fire and smoke. MLTC, Indigenous Services Canada, Red Cross, and the Northern Inter-Tribal Health Authority (NITHA) also assisted the Waterhen Lake First Nation community during the emergency which together with WMSK, helped reduce stress and uncertainty. Prince Albert Grand Council (PAGC) is actively engaged in wildfire management independently and with WMSK and Indigenous Services Canada (federal government). At the time of data collection in 2018, PAGC employed 35 forest firefighter Type 2 sustained action crews of 175 people for 20 weeks of employment during the fire season. Together with WMSK, PAGC works with the education and prevention coordinator to organize the crews. PAGC administers a total of 4.2 million dollars in a cost-sharing agreement between the provincial and federal governments for the costs of employment, overtime, and the Emergency Management Assistance Program. Also, when communities are threatened with wildland fire, PAGC has trained individuals within the community who are then called Type 3 human resource assets; these individuals carry out other roles including organizing the logistics of food, fuel, cooks, and cleaners.

The PAGC director of forestry, Clifford Buettner, was employed by WMSK for fourteen years in various fire roles prior to his move to PAGC for the last twenty years.

Without that relationship that I have with the province, that wouldn't happen. So, through Grand Council, we are the proponent. The federal government can't give the provincial government the money and say, okay, implement these programmes. They have to involve the First Nations. So, what happens is ISC transfers some money to us [PAGC] and we administer the budget in cooperation with the province, they have the plans established they're signed off by the community. They mark areas and do the inspections for the clearance, and they clear the area, similar to a public tender or a request for bids.

~Clifford Buettner, Director of Forestry, Prince
Albert Grand Council, Saskatchewan

In 2015 a string of forest fires caused the evacuation of over 15,000 people. A second evacuation occurred two years later in 2017. Due to the nature of increasingly volatile wildland fires on the landscape, Buettner explained that Chief Beatty passed a resolution at the Assembly of PAGC First Nations and carried it to the Federation of Sovereign Indigenous Nations Assembly. That resolution, which was unanimously approved, was to develop a wildfire taskforce committee to provide recommendations to the provincial government to involve First Nations people in the process of managing fires. During the interviews, I heard that this new task force has already initiated positive change.

Indigenous perspectives: Barriers to engagement of Indigenous people in wildland fire management

The largest barrier identified by Chief Roy from Waterhen Lake First Nation is distrust:

...we want to be able to partner and share with the province, but the experiences, we don't want to expose too much to them [the province]. What I guess I'm trying to say is there's a trust factor there, working with the province.

The past practices by government have caused significant trepidation by Indigenous peoples to want to engage with governments. And, yes, it's nice to have [federal and provincial] rules and regulations, but in order for them to effectively work, having that

trust, that partnership, fairness, equality, you know, whether or not that means financially or the resources. We can go a long way in helping one another, as opposed to division.

~Chief Joanne Roy, Waterhen Lake
First Nation, Saskatchewan

Additionally, WLFN interview participants, chief Roy and councillor Denis Martel indicated another barrier is their lack of knowledge on who the central point of contact would be to support conversations between the First Nation's community and the provincial government fire management agency (WMSK). WLFN stated that it would be beneficial for the First Nation's community to have a contact person, provincial/regional working group or committee to provide recommendations to in an effort to alleviate pressures from future emergencies and the effects of an unorganized response. Chief Roy explained that their community also needs to initiate engagement and form healthier relations with the province.

The second barrier is the lack of human resource capacity within the band and council. WLFN experiences many social issues within their community that are underfunded, making it difficult to commit a person or find time to respond to fire management and emergency response appropriately:

However, at each First Nations level, and specifically ours, we don't, we just don't have the capacity. The letter comes to the leadership (from the province, Ministry of Environment), we discuss it and its very hard, we just don't have the resources to be able to say, okay let's compile all this information and share it with the province.

~Chief Joanne Roy, Waterhen Lake First
Nation, Saskatchewan

Another barrier revolved around the varying perceptions and divide between how Indigenous peoples view the role of fire on the landscape and how WMSK views the role and

responds to wildfires. As Chief Roy explained, for First Nations people and communities, trees are part of their heritage and are seen as having their own spirit and other traditional meanings within Indigenous culture. A mutual understanding between WMSK and First Nations communities may help to develop confidence in the province's decision-making. Traditionally, all forest fires have been suppressed to prevent the risk of loss of life and infrastructure. However, that approach has created vast areas of continuous old-growth forests, a result which has generated forest fuel-loading issues so that, when a wildland fire does occur, it constructs a very intense and volatile situation for anything or anyone in its path.

5.4.2. Government Leaders

Government perspectives: How and why Indigenous people are engaged in wildland fire management

Engagement with Indigenous peoples in Saskatchewan varies across the province, similar to the way in which it does in other jurisdictions and revolves around firefighter employment and wildfire response. The interview participant from WMSK Scott Wasylenchuk indicated that they are considered a main employer in northern communities, hiring firefighters who may not have other employment opportunities. Providing employment opportunities to Indigenous peoples in communities builds collaboration, which ultimately strengthens the relationship between government and First Nations'. For many northern First Nation communities, employment opportunities within their communities are limited, thus when a wildfire is threatening and the provincial government is responding on their traditional territory or within their First Nation community it helps to employ people locally to support in suppression efforts directly on the

Fireline or indirectly through needed support functions. WMSK receives funding to suppress fires on First Nations land through the federal government through Indigenous Services Canada. WMSK returns the money to the federal government they receive for suppression of wildfire in communities and employs First Nations fire crews in SK. WMSK has found success with their firefighting agreements with tribal councils that organize their First Nations communities with the 16-20-week contracts for Type 2 firefighters directly in the community. Type 2 First Nations firefighters conduct sustained fire suppression during wildfire activity as well as complete wildfire prevention and mitigation work in their communities, including brushing back vegetation and removing vegetation from structures. These joint relationship initiatives have been very successful and well received. In 2018, there were 58 First Nations Type 2 crews in the province as part of this contract. In addition to Type 2 firefighters, some First Nations communities train Type 3 firefighters, which are community members that assist during immediate times of need from wildfire in their communities.

Some (First Nations communities) are actually very proactive and they actually help with the training of their type threes (locally hired firefighters in the First Nation community) basically to make their own recruitment exercise. And they'll coordinate type threes for us. So, we can call the community and say, we're looking for type threes, and they'll say, we'll get back to you. And they'll come back and say, we've got like six crews for you already assembled. Instead of us going out and trying to find individuals, put them into crews, that kind of stuff. So again, it's community specific...

~Steve Roberts, Executive Director
of Wildfire Management, SK

The collaborative firefighting employment opportunities between WMSK and First Nations communities contribute to the success of their relationship, as they allow First Nations communities to be valuable partners and providers to the larger protection efforts when wildfire

is threatening the landscape. Saskatchewan has many large wildfires that burn near First Nations communities; Scott Wasylenchuk, WMSK interview participant indicated they mobilize the First Nations people from the community for firefighting and to assist with logistics, fuel needs, and food supply for people fighting the fire. Wildfire is part of a northerner's identity, history and culture:

The northerners and First Nations understand wildfire. They've been around wildfire forever. They've got generations of... 'My grandmother was a wildland firefighter who worked fires, or my grandfather did, or my father, or me.' There's been generations of knowledge and experience passed on.

~Scott Wasylenchuk, Director of Wildfire Operations, Wildfire Management, SK

WMSK interview participants recognize that many northern First Nations communities want more independence and a bigger voice at the political and wildfire operational tables. However, as Scott Wasylenchuk, WMSK explained, the opportunity for Indigenous peoples to contribute to wildfire planning discussions is not occurring. Stronger advocacy by their provincial and federal partners is needed to include First Nations communities in the discussions.

After the fires of 2015, the government had a lot of pressure to engage with First Nations communities due to the lack of engagement by provincial staff regarding wildfire management that had occurred up until that time. WMSK facilitated response summits where they went around to every First Nations community in the province requesting information about how WMSK could improve their planning, response, and inclusion approaches with Indigenous people and their communities. Many of the First Nations communities, through the engagement process with WMSK, came back and explained their strategies and areas requiring values protection. This included traditional trap lines, berry-picking locations, and northern cabins, First Nations also

asked that their communities be protected with a 20 km parameter radius in mind when evaluating wildfire risk.

WMSK has 12 forest protection areas, and each one of those has a forest protection officer, as well as fire base supervisors, firefighters, and administrative staff. The protection officers are the point of contact for the First Nations communities within their respective areas. The officers meet with community leaders and discuss recruitment hires for firefighting and preemergency planning, and those WMSK roles are the point of contact if a chief has a question or concern.

When a wildfire occurs, there are numerous stakeholders involved in the coordinated efforts to support fire suppression and evacuation. There is a provincial organization called Emergency Management SK that facilitates daily calls with emergency social services, emergency management SK, Fire Safety, Health SK, Wildfire branch SK, SaskPower, SaskTel, the bussing companies, and any other government and non-government agencies that have vested assets or interests, and they will attend the call to help centrally coordinate. WMSK will provide a fire update, outlining the areas of risk or issues, followed by meetings with First Nations communities to ensure they are adequately informed and prepared with current information, resources, and support from varying providers. Additionally, when fire incidents occur around First Nations communities, incident commanders and local forest protection officers will take the chief or councillor(s) for an aerial reconnaissance flight to view the fire behaviour and projected encroachment on their community and traditional territory.

WMSK's Scott Wasylenchuk indicated that over the last few years, SK has experienced an increase in the number of evacuations of First Nations communities; unfortunately, many First

Nations people do not always want to evacuate. First Nations provide services during a fire including those of cooks, firefighters, and labourers, and services providing food and other support as needed.

Also, executive director, Steve Roberts from WMSK identified there is a First Nations task group through which provincial fire management staff meet with chiefs from all over the province to discuss wildfire and emergency issues; this group helped to form a stronger connection between First Nations and WMSK, leading to smoother communication when wildfire occurs.

Government perspectives: Barriers to engagement of Indigenous people in wildland fire management

The first barrier identified by WMSK is the misunderstanding of the provincial fire management strategy by stakeholders and First Nations. This strategy requires WMSK to assess each individual fire, identify values in the area, and conduct analysis and fire projection modelling, and then decide if the area requires fire on the landscape to promote ecological growth and turnover of the soil, or if full or modified suppression tactics are needed. For stakeholders and partners, they refer to this as the “let it burn policy,” which created havoc amongst the general public and politicians in 2015 who were not aware of the science behind the decisions being made or the need for fire on the landscape to support ecological processes. WMSK interview participants, Steve Roberts and Scott Wasylenchuk explained that human life and values protection is the top priority; however, they believe that nature should be afforded the opportunity to complete natural ecological processes.

Secondly, the provincial government does not provide Type 2 firefighters with the opportunity first to fight wildfire in their province but rather will import international firefighters

from Australia, Africa, Mexico, or New Zealand to support in wildfire suppression efforts. This occurs in all jurisdictions across Canada, as the jurisdiction in need of firefighters requires Type 1 initial attack firefighters and many Type 2 firefighters do not have the additional Type 1 certifications. Interestingly, WMSK Scott Wasylenchuk expressed that international crews and SK First Nation crews are on par in terms of credentials and abilities, and the skills of First Nations firefighters may even exceed those crews brought in to help from other countries. This lack of engagement and opportunity to employ First Nations crews raises the question of why they are not being hired when they want to work.

WMSK Scott Wasylenchuk said that he felt that northern communities are generally not broadly supportive of government officials due to the historical relationship between Indigenous peoples and government. However, he indicated that fire management planning and response is also part of First Nations culture, and firefighters are respected people within their communities. Thus, First Nations communities want to be included and part of the resolution in managing the risk of wildfire and supporting response efforts.

The last barrier identified is the fragmented engagement approach to fire response when the efforts involve evacuation as there are many agencies involved in this process. Not all agencies stay within their areas of expertise, and some end up providing inaccurate details of the fire situation to the First Nation's community. This has created negative relations between First Nations and WMSK, as well as with other stakeholders because of the confusion with information. The First Nations community then uses that information to make time-sensitive decisions for the safety of their members, but the information may not be accurate and from the

responsible agency. Provincial and federal roles and responsibilities require further examination to streamline response decisions by First Nations communities.

5.5. Case Study 4: Ontario, Canada

5.5.1. Indigenous Leaders

Indigenous perspectives: How and why Indigenous people are engaged in wildland fire management

The relationship between the Sioux Lookout and Red Lake fire management headquarters with Obishikokaang First Nation (OFN) has evolved over time. In the past, the government would dispatch aircraft to First Nations communities and request support from community members, who would then board the plane with clothes and their boots and head to a fire as extra firefighters (EFF) as told by Chief Bull. Chief Bull further explained that at that time there was no training; instead people learned on the job. These experiences were recalled fondly.

...There was limited work in the summer. Those were one of those things that would... We were hopeful that there would be a fire somewhere and we could go to work, because there was a lot of welfare back then. And I noticed too that back then...my Dad was an experienced woodsman, trapper, hunter, and he was made the crew boss. And the MNR officials, the fire managers, spoke very highly of him. And he would be the crew leader, and they would put him in the front of the fire to stop it and a lot of times we did stop it.

~Chief Clifford Bull, Obishikokaang First Nation,
Sioux Lookout and Red Lake District, Ontario

There is now a requirement for firefighters to possess a high level of certification obtained through mandatory training called the SP100, SP200 and SP300 and the WFX fitness test at the provincial and national level in order to be qualified to fight forest fires. These mandatory

certifications and fitness requirements affect some First Nations communities' abilities to apply and work for the government.

OFN band members and traditional territory is located in two districts: Red Lake and Sioux Lookout. Chief Bull indicated that there has been limited engagement with the First Nation by the local Ministry of Natural Resources and Forestry (MNR), Sioux Lookout fire management headquarters and natural resources District office specific to wildland fire management located in Sioux Lookout. The MNR Red Lake District Fire Management Headquarters engages and consults more regularly with the community through involvement on issues related to forest management planning, firefighting, and suppression.

In terms of when wildland fire occurs around the Wauzhushk Onigum First Nation (WOFN), the primary role by the MNR Kenora fire management headquarters is to suppress the fire and protect human life, Chief Skead explained. Engagement by the local Kenora Fire Management Headquarters with WOFN appears to be limited outside of wildland fire response in and around their community. The chief shared that he is open to collective discussions, emergency preparedness, and future planning. However, he explained that there is difficulty in rallying his membership to participate in meetings, even with the band office is offering gift cards, food, and other incentives to encourage the community's participation. Other First Nations communities in Grand Treaty 3 territory, which is 55,000 square miles spanning from west of Thunder Bay to north of Sioux Lookout, along the international border, to the province of Manitoba (Grand Council Treaty 3 2020) also acknowledged being in similar predicaments. Internal engagement within their own communities is a continued work in progress.

Moreover, Chief Skead recognizes the treaty to be their guide and their relationship to the Queen and the federal and provincial governments. As Anishinaabe people, they are an oral people and do not tend to document through writing, as they feel the WOFN chief expressed it loses meaning when this is done. Chief Skead indicated that face-to-face verbal communication provides more opportunity for connection and significance.

The WOFN interview participant fought fire for Ontario's Aviation, Forest Fire and Emergency Services, Kenora Fire Management Headquarters for 21 years as a Type 1 firefighter. Chief Skead and the current fire management supervisor of the KFMH worked together for many years and recently collaborated to complete a waste disposal mitigation project in WOFN, which he felt to be a form of engagement between WOFN and the local government fire management headquarters. First Nations communities in the northwest have their own waste disposal sites, and there is vegetation surrounding these areas that has been known to cause forest fires from garbage debris catching fire and spreading to the bush line. Waste disposal sites in First Nations communities historically cause escaped wildfires. The initiative fostered engagement between government fire management and the WOFN and local Indigenous peoples were hired from the community to complete brushing activities that would place an adequate wildfire guard perimeter to separate the adjacent forest from the waste disposal area, this prevents the spread of wildland fire if ignited. The chief expressed his gratitude for the support provided to his community to complete this project that assists in keeping his people safe.

Indigenous perspectives: Barriers to engagement of Indigenous people in wildland fire management

Similar to interview participants from other First Nations in this study, Chief Bull from OFN echoed the requirement for government to continue their progress in building trust with

their community. There have been circumstances in the past where Indigenous peoples from the OFN have collaborated with government officials that produced undesirable results related to natural resource management, which stressed these relationships. Moreover, OFN people identified distrust as a barrier. The history of their cultural genocide caused by government efforts and their subsequent relationship with government today contributes to the issues that plague the Anishinaabe people, including drug and alcohol dependency. These dark histories take both time to heal and continued reconciliation action by the government to start to instil the trust required for Indigenous peoples to have faith in the policies and decision-making of government that influence the future opportunities for their people. Thus, many individuals from the OFN community only participate in formal education, which includes elementary levels kindergarten to grade eight and grades nine through twelve for high school. Chief Bull indicated many individuals drop out before graduating grade eight or grade twelve.

...we tried to send three to four people down to Fort Frances. Young men. These young men that quit school. And we said, you guys are really good in terms of fighting fires...not one of them passed. They couldn't comprehend the reading, the writing, the...because they didn't go beyond a certain grade. It was above their [level]...even though they were excellent firefighters, excellent speakers, excellent tacticians, whatever, they couldn't do the written portion, because they're grade eight level, grade nine...

~Chief Clifford Bull, Obishikokaang First Nation, Sioux Lookout and Red Lake, Ontario

Another barrier between Indigenous peoples and government is the lack of acknowledgment by the province to utilize their Indigenous partners as a viable host for other First Nation community evacuees. From the perspective of Indigenous leaders this is a missed opportunity for Indigenous peoples to be engaged and partnered with by the province or federal

government. An evacuation host community receives financial revenue that can be used for community development needs and be an opportunity to build connections between First Nations communities.

They flew evacuees to Red Lake and then bussed them to Winnipeg. And here we have Lac Seul just over here. Beautiful buildings, infrastructure, capability to look after 300, 400 people. We have a big arena, we have catering facilities, we have mattresses, beds. It's all there, and they say, no you are not on the list or something...but I always wonder why they don't pick First Nations to look after First Nations.

~Chief Clifford Bull, Obishikokaang, First Nation, Sioux Lookout and Red Lake, Ontario

Additionally, the turnover in provincial and federal governments can pose challenges in terms of the continuation of existing work and relationships that have been established.

Relationship building takes time and education by both parties; a rapid turnover in government employees to support First Nations portfolios typically require significant education on the context and varying dynamics of each First Nation community.

...whether it be federal or provincial, these are people that really don't have a true understanding of the...Of what happened to our people. Such as residential school. I know it's supposed to be part of the curriculum, but everyday Canadians don't understand that, or don't even know that history.

~Chief Chris Skead, Wauzhushk Onigum First Nation, Ontario

Finally, some leaders extended the invitation to fire management staff to visit First Nation communities during community events to create awareness, generate trust and engagement, as well as transfer traditional knowledge from the community to government staff:

If you would just go and just visit a community. Don't have to be announced, or anything, just go in and participate in some of the activities, and Pow Wows...like there's no need to be afraid, or not feel welcome. Anishinaabe people, we like to share our experience,

like to share our knowledge. And then that's the whole relationship between treaty, because we are all treaty people, and that is how I see things.

~Chief Chris Skead, Wauzhushk Onigum
First Nation, Ontario

5.5.2. Government Leaders

Government perspectives: How and why Indigenous people are engaged in wildland fire management

Interview participants from the Ontario's Aviation, Forest Fire and Emergency Services (AFFES) perception of the current relationship between government and Indigenous peoples is positive. They recognize that the relationship has improved significantly over the years from one that was strained, mainly due to past government assimilation practices and related trauma.

There have been several strategic initiatives developed by the northwest regional response and operations manager, Dave Cleaveley with AFFES within the MNRF in the quest for collaboration. Firefighter training, competency and capacity building, the hiring of community fire officers (CFO) in every northern community who act as liaisons between the First Nation community and local fire management headquarters, hazard reduction burning programs, community prevention and mitigation planning, and waste disposal burn programs are just a few of the initiatives that have been implemented. These programs have encouraged stronger relations, education in cultural competency for government staff.

The training of Indigenous crews in Ontario, for example, has advanced over the years.

They got a lot of training. They would come down in the spring, they'd do tree-planting, a lot of these folks. And then they would go right from tree planting into forest fire fighting. They were good firefighters; they are good bush people. They are a real asset.

~David Cleaveley, Northwest Regional Response
and Operations Manager, AFFES, ON

However, times have changed; now Indigenous Type 2 crews are organized and hired through contractors for sustained action. Unfortunately, contractors are selective and only want to hire crews from the southern districts because it is more cost-effective than flying people in from the Far North. The lack of use of Type 2 firefighters from far north communities has diminished the firefighting skill set from the perspective of the AFFES.

Many of the youth from northern First Nations communities are eager to work initially, but the AFFES interview participant explained that over half of the people hired through contracts come with addiction issues (D. Cleaveley, personal communication, June 2018) and are on varying types of treatment programs. These drug addictions are also experienced in the Government Fire ranger crew systems as well, so it is an issue that the fire program in Ontario has come to deal with on the human resources front.

So, it's a sad thing but it's just a fact of life. And it's not that we don't have it in our own [government] crew system, we also have it in our own crew system. And you can work while you're on a treatment program depending on which stage of the treatment program, you're in.

~David Cleaveley, Northwest Regional Response
and Operations Manager, AFFES

The province of Ontario engages the Indigenous peoples in many unique ways. More recent efforts have seeded stronger and more sustainable partnerships. The northwest region, which predominantly experiences more wildfire activity, has 26 fly-in remote First Nations communities. With these communities, face-to-face communications outside of fire activity are difficult to coordinate due to the cost of travel, and it is impossible to find the time for provincial

government staff to visit all of them. Each fire management supervisor has a target to meet with two different communities annually, and these trips are organized within their regular workloads.

The first engagement initiative is the community-based crews where two crews are hired per location as Type 2 firefighters (sustained action on a fire) but, over time, are built up to Type 1 firefighter capacity where they can do initial attack (first responders to a wildfire) on a fire for a 12-week period annually. As of 2018, Pikangikum, Mishkeegogamang, Wabaseemoong, Fort William, and White Sands First Nations were participating in the initiative, which is fully funded by Indigenous Services Canada and orchestrated by AFFES with the support of each First Nations community. However, as explained by Dave Cleaveley from AFFES, through the AFFES collaboration initiatives many challenges have surfaced in all northern communities, including social issues, suicide, health, education, leadership, and infrastructure needs, which can make it difficult to obtain and keep people to support the community fire management initiatives.

The second initiative is the hazard-reduction program, which consists of a two-week period in the spring where AFFES works with the chief and council in selected and willing participant First Nations communities and employs local Type 2 crews to assist their staff to complete low-complexity prescribed burns in and around their First Nation communities that have historically experienced high numbers of forest fires. Indigenous Services Canada funds the program directly through AFFES.

The third initiative is the Community Wildfire Protection Planning project. The provincial government Office of the Fire Marshal and Emergency Management (OFMEM) requires all First Nations communities to have an emergency response plan that OFMEM leads and supports the development of for the communities. However, AFFES indicated that these

plans are not fulsome, which led to their initiative in 2017 that assists First Nations communities in the development of their individual Community Wildfire Protection Plans (CWPP). ISC provided AFFES with \$50,000 for a total of nine plans for nine different communities. Engagement between AFFES and the hired contractor to write the protection plan with the First Nations communities resulted in an outline of the specific needs of each community, including mitigation and prevention measures, FireSmart planning, and ensuring the overall safety of the community.

The fourth initiative ties directly into the previous initiative where AFFES is pursuing funding for planned engagement activities between the fire management agency and willing First Nations communities to hire FireSmart crews directly from their communities to help with prevention and mitigation work. This work includes brush burning or fuel treatment for four weeks or utilizing the community-based crews from the previously mentioned initiatives to fulfill the needs of the wildfire protection plan.

For the fifth initiative and engagement opportunity, AFFES worked with White Sands First Nation and ISC to acquire \$50,000 to place a fuel break around the community as a pilot project to measure the fuel break guard's effectiveness in the future if ever tested by an encroaching wildfire. AFFES indicated that they hoped to extend this fuel mitigation pilot project province-wide to also reach First Nations communities situated in urban interfaces adjacent to forested areas and remote locations.

Government perspectives: Barriers to engagement of Indigenous people in wildland fire management

Although AFFES has been successful in achieving participation by First Nations communities in the varying engagement initiatives occurring in their province between

government fire management headquarters and First Nations communities, there have also been barriers that limit engagement. Some of these barriers include the limited financial resources from the federal government to First Nations communities to support wildfire prevention, preparedness, and response. Also, as with other jurisdictions, AFFES interview participant, Dave Cleaveley indicated First Nations communities in the province have limited human resource capacity to support the broader collaborative wildfire community initiatives which impacts engagement between AFFES and First Nations. AFFES has not developed internal guidelines to support engagement with Indigenous peoples as identified by the response and operations manager for the northwest, Dave Cleaveley; there are many open discussions and a significant amount of communications happening, but there is nothing formal as a guiding directive. The lack of internal policy within the fire program places a barrier between government staff and First Nations communities on the appropriate way to engage and interact with communities. AFFES does not have a staff person(s) responsible for the development of a robust Indigenous relations policy and procedural framework to support AFFES's interactions, education, decisionmaking, or planning. At the time of interviews in 2018, the Ontario Ministry of Natural Resources and Forestry is planning to implement a new Indigenous relations unit that will have dedicated staff to help programs such as AFFES develop local, regional, and provincial strategies and guidelines for First Nations engagement specific to fire management.

There currently exist varying levels of educational understanding on Indigenous culture within government fire management agencies in Canada and New Zealand, which can create inconsistencies in terms of government approach operationally and within policy. For example, Tracey Mill, Assistant Deputy Minister for the Provincial Services Division, MNRF explains:

... for many people like me, I'm a southerner, I have learned about Indigenous communities by a book and you can't learn about people and really understand people and understand their culture from a book. You have to interact with them, you have to be involved with them and you have to see them as people but people with differences from your experiences. Like cultural difference, you have to understand that... It's not enough to do your online courses and to read the documentation about Indigenous history and that kind of book learned or paper learned training...

Another barrier identified by AFFES interview participants is the large number of agencies involved during times of emergency. Large collaborative daily calls occur with provincial and federal partners, including Health Canada, the Ministry of Transportation, the impacted First Nation(s), AFFES, the Office of the Fire Marshal Emergency Management (OFMEM), and other agencies. The large number of agencies involved makes for a more convoluted engagement process to understand the individual roles and responsibilities of each agency. The efficiency of agency and First Nations time in addressing wildfire situations requires further examination and a new engagement plan to address the gaps in roles and responsibilities.

Lastly, Dave Cleaveley identified from his observations of years in the fire program that First Nations communities experience several ongoing issues that sometimes plague communities. This includes broad social issues, suicide, health care emergencies, access to safe drinking water, availability of proper infrastructure, inadequate education systems, and so on. These barriers were also shared by some Indigenous leaders in this study. The presence of these challenges creates a barrier for AFFES by reducing a First Nation's ability to make wildfire preparedness and response a priority when they are bombarded with so many other competing priorities.

5.6. Case Study 5: Nova Scotia, Canada

5.6.1. Indigenous Leaders

Indigenous perspectives: How and why Indigenous people are engaged in wildland fire management

Emergency Management Nova Scotia is a large comprehensive command centre in Halifax that is the conduit to all of the federal, provincial, and municipal agencies and manages communications in the event of any emergency. As the Indigenous interview participant, John Paul explained, the Emergency Management Office has mutual aid agreements with municipalities or adjacent communities and works closely with the Department of Lands and Forestry, NS (DLFNS) to mitigate emergency hardships, and this relationship extends to First Nations communities. Furthermore, the director of APC, John Paul explained that interactions between the DLFNS and First Nations communities are typically related to wildlife management and certain land issues; however, if wildland fire was an issue, then it would be addressed. The Indigenous leader, John Paul explained how the DLFNS wildfire branch contacts a First Nations community when there is a wildland fire adjacent to or in their community:

...they [DLFNS] would either contact the chief or their known key contact, whether it be the band manager, or the emergency management liaison contact in the community, or the fire chief in the community...EMO has a listing of all the key officials in every community. So, they [DLFNS] know who to contact. So DLFNS just has to ask EMO and then DLFNS does know who to talk to in communities...

Changes to existing legislation or policy or the development of new legislation requires the provincial government to follow an explicit protocol outlining the rules of engagement with the

13 First Nations communities within Nova Scotia. An Indigenous leader, John Paul indicated the government's practices are more about avoidance than engagement:

...you know, some things they don't believe impact us and this could be one of them that they don't think impacts us directly, but it does because we believe we own all the land in Nova Scotia so you should tell us about what's going on with our lands across Nova Scotia.

~John Paul, Executive Director, Atlantic Policy
Congress of First Nation Chiefs Secretariat, NS

Indigenous perspectives: Barriers to engagement of Indigenous people in wildland fire management

The following is thought to be a hindrance on the relationship between government and First Nations people in Nova Scotia. The main barrier identified by Indigenous leader; John Paul is the colonial history in the province, which is a shared view amongst all jurisdictions by Indigenous leaders interviewed for this research. The fallout of colonialism, John Paul indicated has led to government employees being afraid or having hesitation to engage with First Nations communities or the leaders of those communities. There is a perception that those who are working on fires have never been to a First Nations community before. First Nations communities are aware that engagement occurs around the province with other stakeholders, including municipalities, so First Nations communities would like the same opportunity in return.

5.6.2. Government Leaders

Government perspectives: How and why Indigenous people are engaged in wildland fire management

The Wildfire Management team within the Department of Lands and Forestry Nova

Scotia (DLFNS) indicated that their relations with First Nations communities could be stronger. Engagement does occur in a limited capacity isolated to training and wildfire response on rare occasions. Annually, the Fire Service Association of Nova Scotia meets with stakeholders to discuss issues and opportunities and invites the DLFNS to join in the conversation. The DLFNS does not get the same request from First Nations groups to participate in annual engagement sessions to discuss wildfire management issues but acknowledged they would be open to the opportunity if they were aware of the appropriate contacts to initiate the linkage.

The DLFNS meets with municipalities, forestry companies, structural fire services, and other stakeholders regularly, but not with First Nations groups. When asked about the reason behind this lack of engagement from an operational standpoint, John Rudderham, operations fire manager with DLFNS indicated that they perceive that wildfire is not a large concern in First Nations communities, and that DLFNS do not get called to respond to fire incidents on First Nation reserves often. The lack of wildfire emergencies has created the perception that limited engagement is required between First Nations and the DLFNS.

However, when examining the perceived relationship from a higher-level political context, Deputy Minister of Lands and Forestry Julie Towers explains:

...so it wouldn't be different from most jurisdictions in that it's been a steadily increasing level of trust and interaction with the communities. We have a formal assembly of Nova Scotia Mi'kmaq Chiefs; it enables a lot more interaction. Both in a very formal negotiations process, a consultation process, but also in a day-to-day engagement process. We have an annual meeting of the chiefs with our cabinet ministers... Each of the Mi'kmaq chiefs has a portfolio. So, for example, one of the chiefs has lands and forestry, and wildlife as his portfolio. So, he would interact regularly with our minister... As I say, fires never come up as a concern. Usually it's crown land management and wildlife would tend to be the issues.

If a wildfire emergency occurs on First Nations land, the DLFNS will provide support to the community and work with the chief and council in response efforts. Evacuations in Nova Scotia are rare in comparison to many other provinces.

In 2018, DLFNS interview participants, Jim Rudderham and director, John Ross indicated the agency conducted basic fire suppression training with seven First Nation bands in addition to community FireSmart planning with the provincial fire prevention officer and the Aboriginal liaison for the seven bands. First Nations are under the responsibility of the federal government, so the DLFNS does not provide additional engagement in this area unless requested by the federal government or unless they are personally contacted by a local First Nations community. In the past, DLFNS, John Rudderham indicated that training opportunities with First Nations groups have been initiated, but there appeared to be little interest about participating in the training.

Government perspectives: Barriers to engagement of Indigenous people in wildland fire management

DLFNS interview participant, Jim Rudderham suggested that they have made several attempts to engage First Nations communities and groups. There are seven bands in the Mainland Confederacy in Nova Scotia, which does not include all provincial bands, but the DLFNS implied that Indigenous leaders from the Confederacy are not all at the table simultaneously, which makes it difficult for them to know the appropriate First Nations to engage with on wildfire management issues. Additionally, with the lack of wildland fire emergencies annually, there is the perception of a reduced need for continual linkage and communication.

When a wildfire does occur, the First Nations will engage with their volunteer fire services with whom they have fire agreements in place to support fire suppression. The DLFNS is rarely called when a wildfire occurs.

The DLFNS indicated that they only have one full-time government position dedicated to engagement and outreach, which is the role of the manager for forest protection. Because there is only one person for the entire province who works in this capacity, it can be challenging to find enough time to engage stakeholders and partners. First Nations priorities also vary across the province.

I would say it's really a matter of priorities. A lot of communities, their focus, and through their various training organizations with any individual bands, or provincially, or in the Atlantic region, a lot of their focus on training tends to be more on things related to education and employment, more generally and not specifically about fire,

~Deputy Minister Julie Towers,
Department of Lands and Forestry,
NS

5.7. Case Study 6: New Zealand

5.7.1. Indigenous Leaders

Government perspectives: How and why Indigenous people are engaged in wildland fire management

Engagement with Māori people by the New Zealand government is variable depending on the topic. To understand the relationship and engagement between Māori and the Fire and Emergency Services(FES), New Zealand government more thoroughly, one must first understand land ownership in New Zealand, which links into the fire and emergency services

relationships with Māori people. Similar to other case studies included in this research, there are historical contexts that shape present day collaborative efforts between Indigenous peoples and governments, or in this case, between Māori people and the New Zealand government. The majority of land is owned by the government of New Zealand and is classified as conservation land. These lands are considered the most fertile and productive (pers. communication, Melanie Mark-Shadbolt, December 2018). There is also a large part of the land that is owned by Māori people and their organizations, for example by the Māori Trustee, which is a government agency that manages over a thousand different parcels of agricultural land around New Zealand (pers. communication, Melanie Mark-Shadbolt, December 2018). Additionally, the Federation of Māori Authorities own productive land that is typically in the primary sector-type agricultural businesses that perform better due to the smaller number of shareholders at 4-500 versus thousands similar to the Māori Trustee (pers. communication, Melanie Mark-Shadbolt, December 2018). This is important context when examining present-day relationships and the desire of Māori people to engage or not with the government, or more specifically, with Fire and Emergency Services New Zealand.

From the perspective of Māori leader, Melanie Mark-Shadbolt engagement varies between Māori communities; some prefer Māori ownership of preparedness planning and mitigation, while others indicate that it is a responsibility of FES.

They [Māori] are definitely open for the conversation [regarding prevention and preparedness planning]. Ready for it. Different levels, you know? Some of them want to talk about. How do we get our people [Māori], you know? We need to train people. And then others want to talk about, oh, that is FESNZ [Fire and Emergency Services] job. It's their job to do that.

~Melanie Mark-Shadbolt, Māori Leader, NZ

For example, on the North Island, at the most northern point in Spirits Bay, there is an isolated community called Te Hapua, which is surrounded by tobacco and manuka trees and scrub brush. If a wildfire occurs on their land, it takes 30 minutes to reach the major road corridor to evacuate; they cannot rely on FES, as they would take too long to arrive. The residents of Te Hapua are vulnerable to tourists throwing incendiary devices or cigarettes out of their windows and starting fires, and the community could potentially be surrounded by wildland fire. Melanie Mark-Shadbolt, Māori leader indicated that their team asks the people of the community's Marae (meeting grounds or house in Māori settlement areas) to help them map which areas are the most important to put resources into.

The earthquake in Christchurch, NZ in 2011 that killed over 150 people increased awareness and preparedness about the importance of planning ahead for emergency-related disasters. The government agency responsible for supporting Māori development, Te Puni Kokiri, kickstarted emergency response management planning with each Māori community around the country. Through the emergency response planning initiative, Māori communities could register for the program to receive support in the design of a customized civil defence plan.

As explained by the Māori interview participant, Māori people do not feel as though they are engaged as equal partners with the government, including with FES and that there are struggles to have recognition of the Treaty of Waitangi and the responsibilities within it fulfilled. While Māori people understand that they are included in the definition of the general public, they are also an equal partner to the government. Further, as identified by Melanie Mark-Shadbolt, Māori people feel that the New Zealand government is particular about which stakeholders and

partners they will engage with. The Māori community of Ngai Tahu in the South Island maintains a billion-dollar organization, whereas the North Island Māori may not have the same resources or be able to assist the government with their objectives due to limitations with human resource and knowledge capacity. Historical and present-day issues between Māori people and the government manifests itself into all relationships and contexts within the country, including the engagement practices by Fire and Emergency Services New Zealand with Māori people and their communities.

Indigenous perspectives: Barriers to engagement of Indigenous people in wildland fire management

A significant barrier identified by the Māori interview participant, Melanie MarkShadbolt that is impacting engagement is the limited number of skilled people available to support initiatives in Māori communities.

...there is the capacity and capability that is a really big one for us, at the Hapu (Clan) level. When you are working in a Hapu level, quite often, a Hapu is based around a particular piece of land, or a particular Marae. And that Marae will operate on love. So, you know there is no resourcing there. Other than the land and the building, they don't own anything. There is no money coming in. So, everyone gives their time for free...there are only two or three people who professionally have the ability to do it.

~Melanie Mark-Shadbolt, Māori Leader,
New Zealand

Secondly, the community council regulations imposed on Māori members also present a barrier and can influence negative behaviour choices related to fire use and prevention. Many people, specifically in the North Island, are of lower socio-economic status and unable to afford to go to a waste disposal or recycle station, so many of them burn their garbage in their yards.

“FESNZ is just kind of this agency miles away. No one really knows who they are. You know? They might be rural fire truck. And they might be in the rural fire service. But that’s just kind of on the side, volunteer. So, they do not embed themselves into the communities and really understand the frailties of the system, relationship, understanding...”

~Melanie Mark-Shadbolt, Māori Leader,
New Zealand

Lastly, there seems to be a lack of engagement from the perspective of Melanie MarkShadbolt between FES and Maori people regarding how money is spent within their communities related to fire prevention and mitigation activities. Currently Fire and Emergency services uses a blanket approach for all communities and provides them with what they think they need versus what they may actually find useful:

“Te Hapua, Spirits Bay have lobbied Fire and Emergency Services and said, well you have got your little discretionary funding pot that we know you gave to this community down the road to buy a new fire truck, why can’t you give it to us here, in this Maori community to buy a trailer...As communities say to them, well if we recycle here in the community. If we had an incinerator at the Marae, then I could take my rubbish there and burn it. Or if there was a recycling station at the Marae, I could take it there. Or if the Marae had a trailer, I could use to put all the rubbish in, then I would go around and collect everyone’s rubbish and take once a week. But FESNZ pushed back and went, oh, you may use the trailer for other things.”

~Melanie Mark-Shadbolt, Māori Leader

5.7.2. Government Leaders, New Zealand

Government perspectives: How and why Indigenous people are engaged in wildland fire management

Engagement between Fire and Emergency Services (FES) and Māori people is a legislative requirement. The Treaty of Waitangi states that the Crown of New Zealand must

engage with Māori communities; however, FES indicated that they also want to engage and maintain open lines of communication.

FES identified their key partners to be land managers, including forestry managers, farmers, and Iwi (Māori people or nation). Additionally, FES has strong relationships with government agencies, including emergency response agencies, and local governments. The relationship between Māori communities and FES is variable across the country and dependant on the engagement at the local level between FES personnel and local Māori people, as shared by government interview participants. FES expressed their strong support of the need for Māori contributions to their overall modernization of the organization, and their policies and procedures moving forward. More specifically, Piki Thomas, national Māori advisor with FES and a 30-year veteran, explained:

I pride myself on making sure there are strong relationships so that at the end of the day every Māori walk away with their integrity and intent and that both sides of Māori and the organization (FES) have their side of the story delivered and considered. If we can come out in a collective agreement from middle ground, then that's my role that I play with the organization so that we have our informed decision-making process that included Maori ideology decision-making.

FES indicated that they do not have a large representation of Māori people in their overall workforce, however, expressed they are trying to increase the number of Māori employees. One way that Māori are engaged in wildfire management is through FES employment of Māori liaison officers, which is an appointment by FES to support the communication between FES and Māori communities.

FES expressed a desire to better understand how Māori use fire and how Māori peoples perceive their risk of wildland fire. In 2018, FES developed an outcomes framework to support Māori relations and to honour the Treaty of Waitangi. Components of this framework include

expansion in FES of diversity and the inclusion of Māori culture through initiatives such as relabelling fire trucks to include the word *Ahi*, which means fire in Te reo, the official Māori language in New Zealand, and both singing a traditional Māori song, called a *waiata*, and saying a *karakia* (a prayer) before meetings.

...we're developing an organizational waiata which is a traditional song that we will use as our waiata, as Fire and Emergency New Zealand's waiata. And, we'll sing it at various events. And, another dimension to it is, you know, for instance at the start of a meeting or a he hui, whether it's internal or external we try to have somebody offer a karakia which is a prayer. And, it's not necessarily a denominational prayer. It's just a spiritual prayer. It's like, you know, we hope the meeting goes well.

~Kevin O'Connor
National Manager of Rural, Fire and
Emergency Services, NZ

Additionally, this proposed framework will align policies and procedures with Māori traditions and culture. Prior to the development of this framework, engagement was informal, unplanned, and variable. FES staff were not provided with appropriate cultural training or standards to use when engaging Māori communities or individuals.

FES is currently developing cultural acuity in their employees by providing them with resources and protocols to assist with their engagement with *Iwi* (Māori people or nation) and to approach the *Iwi Marae* in an appropriate and culturally sensitive manner. In addition, one of the formalities in Māori culture is to have a *powhiri*, or a traditional welcome, where both parties speak. FES want to embrace their partners' cultures and traditions by inclusively incorporating their needs into meetings and other events. FES is hopeful that, with time and education, their employees can learn an elementary level of Te reo, which is important to achieving *mana* (to be legal, binding, or authoritative) standing of FES people with Māori people. This fundamental

knowledge will aid in conversations together about issues related to wildland fire in their communities and lead discussions regarding preventative measures.

Additionally, FES understands that there is no one-size-fits-all solution, and some communities are more interested in risk-reduction planning than others. FES indicated their agency is creating sixteen local advisory groups around the country to support fire and emergency risk and the needs of communities.

...one of the things that we have in our Acts going forward is local advisory committees. So, these are groups and there'll be 16 local Fire Committees and it will be groups that are made up of community members. And, their job is to provide advice to Fire and Emergency around the risks and needs of their particular communities. We started piloting them...what kinds of people we want to be involved in them and what their terms of reference and ways of working will be. I would imagine that in that there would be a commitment to keep to working with Iwi. And, explicitly including them on those groups. But I haven't got anything definite.

~Zoe Maunsey, Senior Research Program
Advisor, Fire and Emergency Services, NZ

Furthermore, FES is engaging rural Māori communities through a project that introduces compliant incinerators to encourage locals within those communities to use them instead of burning their waste in their backyard, which was a purpose-built and safe way to burn it. This initiative will help address the limitations some Māori face with local council regulations, prevent the spread of burning debris from causing larger wildfires, as well as foster engagement between Māori communities and FES related to wildfire prevention. Some additional cultural understanding around the usage of fire in Māori traditions provides context:

In history, the use of fire is hugely traditional, and it's got quite a lot of significance in the culture. There was also quite a lot of significance in the people who controlled fire in the culture. People that could light fires or start fires I guess they had a lot of mana [...] Mana means presence. So, they were quite an important person. So, what we're trying to do now is look at how do we have somebody in the community who has that mana, who has that voice for us around fire and helps educate that community.

~Myles Taylor, Principal Fire
Officer, Region 1 and 2, Fire and
Emergency Services, NZ

*Government perspectives: Barriers to engagement of Indigenous people in wildland fire
management*

FES identified a few barriers that their organization faces about their relationship with Māori communities. One example identified by a FES interview participant, John Sutton explained, in a town with a population that is 88% Māori in NZ, the fire chief was explaining the difficulties in recruitment for the department to the rural area manager who noticed, when attending the fire station, that there were 28 men, all over the age of 40 and White. There was an obvious missed opportunity to employ local Māori. FES reached out to local Māori in the area to ask about why they had not applied to volunteer at the first station and found that there was a misconception that the roles were paid and not volunteer and that they did not possess the qualifications to apply.

FES, John Sutton indicated that there is general lack of understanding about the realities that Māori people face day to day. In relation to wildland fire engagement needs a broader education to non-Māori is required to generate support.

It's just a pity that the people don't know, that general New Zealanders don't understand the situation that Maori are in. It's not fair and it needs to be addressed. And I have a firm belief that most humans are fair-minded providing they know the facts, if they get the facts. So, having lived in those areas, I think I'm a little bit enlightened and probably more sympathetic than a lot of people.

~John Sutton, Regional Manager of
Region 2, Fire and Emergency
Services, NZ

5.8 Chapter Summary

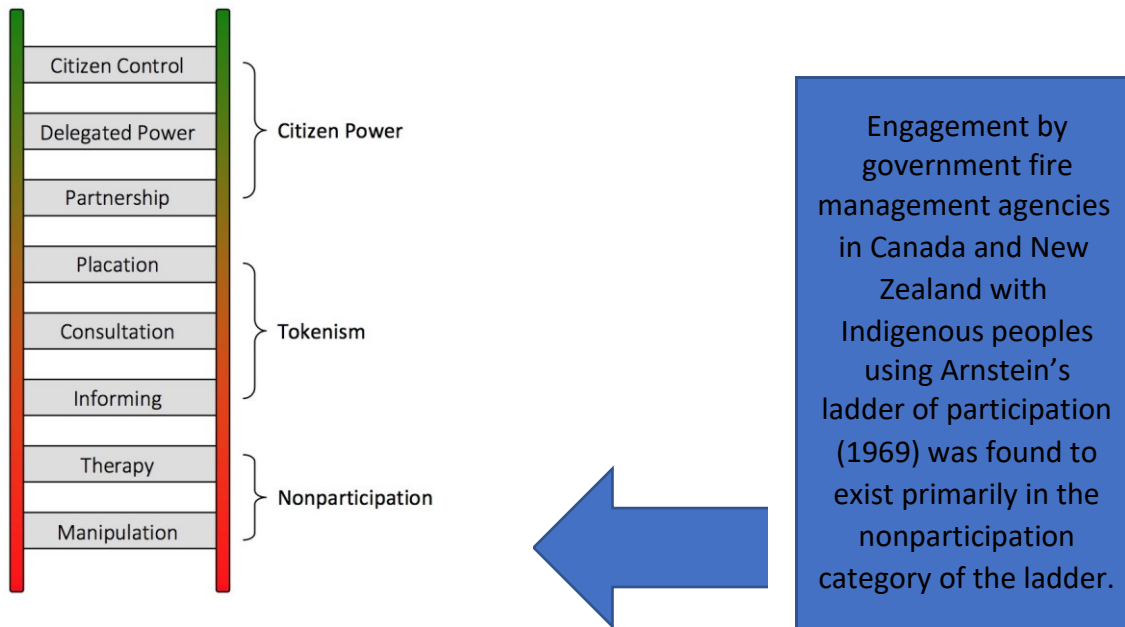
Chapter five presents the results of qualitative interviews with 12 Indigenous leaders and 17 government leaders from six locations, including the provinces and territory of British Columbia, the Northwest Territories, Saskatchewan, Ontario, and Nova Scotia within Canada and from within the country of New Zealand. The data revealed how Indigenous people are engaged in wildfire management and what the perceived barriers are to engagement from the perspectives of Indigenous and government leader interview participants. Chapter 6 discusses these findings in relation to relevant theory and literature.

Chapter 6. Discussion

6.1. Engagement of Indigenous Peoples in Wildfire Management

This study provides insight into how and why Indigenous peoples are engaged in wildland fire management in Canada and New Zealand. It was surprising to learn from both Indigenous and government leaders that there has been relatively little engagement before, during and after wildfire events in all jurisdictions.

Very recently within the last two to three years, Indigenous leaders in British Columbia, Saskatchewan and Ontario indicated that engagement between First Nations and fire management staff has increased. Comparatively, government leaders from British Columbia, Ontario, and New Zealand revealed their fire programs continue to improve engagement practices with the local First Nations. This places all jurisdictions on Arnstein's (1969) ladder of citizen participation on the manipulation and therapy rungs of non-participation, which did not facilitate Indigenous peoples to participate in planning or steer programming, but rather enables powerholders(government) to 'educate' the participants on their decisions and actions.



When a wildfire occurs in a First Nations community or on their traditional territory government leaders from British Columbia, Northwest Territories, Saskatchewan, and Ontario all highlighted their recent mandated inclusion of the chief and council to support decisionmaking and fire suppression. Indigenous leaders from British Columbia, Saskatchewan and Ontario identified that they are kept informed during different intervals of the fire's life cycle through operational meetings with multiple partners and aerial reconnaissance flights when necessary. Interestingly, engagement between fire agencies and First Nations was found to be a higher priority when wildfires were impacting First Nations communities. For example, Nova Scotia does not experience many wildfires annually that impact First Nations, thus reducing the perceived need for engagement as indicated by both the government and Indigenous leader participants. Engagement in Nova Scotia related to wildfire primarily resides in the nonparticipation between therapy (powerholders 'educate' participants) and informing (the participants are heard and can have a voice in the discussion) of Arnstein's (1969) model, which

is at the lower end of engagement, but during wildfire response, it will increase when needed to placation (allowing participants to advise, but powerholders to make ultimate decision) and partnership engagement in Arnstein's (1969) participation model requesting feedback from communities (Arnstein, 1969). This finding was not isolated to Nova Scotia, but for British Columbia, Northwest Territories, Saskatchewan, and Ontario who experience larger fire events more frequently on an annual basis than Nova Scotia they are required to engage First Nations more often. In New Zealand, government fire managers indicated they engage Māori settlement areas particularly the *Iwi Marae* within the same engagement spectrum as the Canadian provinces and Territory.

Engagement in Canada between the fire management programs and the First Nations communities is complex and involves additional government agencies within the province, territory or country, as well as not-for-profit organizations and or tribal councils. For example, the not-for-profit organization First Nations Emergency Services Society acts as a conduit between First Nations communities, the federal government and the BC Wildfire Service for fuel management programs. In Saskatchewan, the Prince Albert Grand Council provides support to their 12 First Nations communities and works directly with the Wildfire Management branch SK and the federal government to administer funds and training for Type 2 firefighting employment. In Nova Scotia, the First Nations communities work directly with their provincial emergency management office, and, if required, will link in the department of lands and forestry to provide wildland fire support.

Intriguingly, both Indigenous and government leaders in Northwest Territories identified social media and the government fire management website to be an effective form of

engagement. While other government fire management agencies in this study described their website to deliver information to stakeholders no other jurisdictions highlighted this type of indirect engagement communication as being a form of engagement. Engagement by government agencies via their website in relation to Arnstein's (1969) ladder of participation resides within the non-participation through to the informative rung. This type of engagement is used to by government agencies to accommodate for people who prefer to receive their information and updates online.

The last main finding discovered through this research regarding engagement is employment of First Nations peoples to support wildfire management. Indigenous leaders from Northwest territories and Saskatchewan indicated that employment of their people is critical to the development and sustainability of the relationship between their communities and wildfire management programs. As expressed by Indigenous interview participants, employment is a symbol of inclusion, partnership and integrity, it shows the First Nations communities that governments recognize the First Nations' desire to help their own community and other First Nations communities with their people in times of crisis. The government interview participants from these same two jurisdictions agreed that employment of Indigenous peoples is an important way to strengthen this relationship. Additionally, the Ontario government indicated they hire local Community Fire Officers within their northern First Nations communities to act as a liaison between their First Nations and the local fire management headquarters. Other jurisdictions, including British Columbia, Northwest Territories have Indigenous or stakeholder liaisons employed to support the relationship between the First Nations communities and the fire agency,

however the specifics of those roles were not explained in the data. In New Zealand, there are rural Māori community liaison officers that act as conduits between Fire and Emergency Services and the Māori residents. No further details were provided regarding the details and nature of the liaison officer roles.

Engagement has improved between Indigenous groups and government fire agencies within the last two to three years. Indigenous leaders in British Columbia, Northwest Territories, Saskatchewan, and Ontario all identified positive strides forward through the development of joint ventures including fuel management programs, engagement of the chief and council when a wildfire is threatening their land or the addition of Indigenous relations staff to support engagement between the First Nations and fire management program. Government leaders from BC Wildfire Service also echoed the improvements mentioned by Indigenous leaders, as well they now include members from the impacted First Nations to join their assigned Incident Management Team (IMT) responding to the wildfire as a way to keep them informed and part of the operational planning to fight the fire. In 2017-2018, New Zealand began to address the need for inclusion and cultural diversity of Māori peoples within the Fire and Emergency Services organization. They are achieving this important step by developing an outcomes framework to support Māori relations and to honour the Treaty of Waitangi. Initiatives include relabelling fire trucks to include the word *Ahi*, which means fire in Te reo, the official Māori language in New Zealand, and both singing a traditional Māori song, called a *waiata*, and saying a *karakia* (a prayer) before meetings. Additionally, Saskatchewan wildfire management highlighted the instatement of a provincial First Nations Task Group in 2017, which was formed in the wake of the 2015 ravaging wildfires that placed many First Nations communities at risk.

The identified improvements that governments have made and are continuing to work towards increases their level of participatory engagement between First Nations and fire programs on Arnstein's ladder of participation (1969). The results indicate that all fire management agencies range between the informing (allow participants to voice themselves and be heard) rung to the partnership (allow participants to negotiate and engage in trade-offs) depending on the circumstance, available resources financially and human resource capacity wise. These improvements could be associated with the broader global movement for governments to recognize and honour human rights and equality for all, including the integration of the principles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). An example of this in Canada is the 2008 Canadian Prime Minister's national apology to Indigenous peoples who suffered through government assimilation practices and residential schooling, as well in 2015 the 94 calls to action presented by the Government of Canada's Truth and Reconciliation Commission. Additionally, in 2016 Prime Minister Justin Trudeau removed Canada's objector status from the UNDRIP and Canada along with the original objector countries Australia, New Zealand and the United States now supports the principles outlined in UNDRIP. As indicated by all government fire management agencies interviewed in this study, their broader governments mandate is changing to be more inclusive of Indigenous people's rights. These changes breath new meaning and encouragement into provincial, territory and country fire programs to adapt their policies and historical cultures to meet the needs of the Indigenous peoples.

Over the last few decades engagement by governments with Indigenous peoples has become a legislative requirement. More specifically, there is a focus by governments to include

Indigenous people's engagement pertaining to natural hazards and emergency management prevention, mitigation, preparedness, response, and recovery with regard to such hazards, including floods, wildfires, hurricanes, tornados, and cyclones (Thomassin et al., 2018). Furthermore, Sanghia et al. (2019) emphasize that government investment in Indigenous peoples in emergency preparation and management of natural hazards can support sustainable pathways to improve emergency management capacity. However, despite growing engagement efforts by government agencies, internationally there appears to be marginal inclusion of Indigenous cultural knowledge or practices in formal disaster response and emergency management structures, which permeates into a lack of Indigenous people's knowledge being integrated into operational contexts (Thomassin et al., 2018).

6.2. Barriers to Engagement of Indigenous Peoples in Wildfire Management

There were several barriers presented by both Indigenous and government leaders that are affecting the relationship between fire management programs and First Nations communities. The primary barrier brought forward by Indigenous leaders from British Columbia, Northwest Territories, Saskatchewan, and New Zealand is the limited funding to First Nations communities and human resources available to support wildfire management engagement needs. This finding is in line with the findings of a study by Fortier et al. (2013) who found that pressure on community capacity and insufficient resources posed a barrier to engagement abilities by First Nations communities. Fortier et al. (2013) completed an extensive review of 494 First Nations communities in Canada to understand the preferred agreements chosen by First Nations communities to support partnership, engagement, and collaboration related to the forestry sector. Fortier found that the pressure on the community's capacity and resources to further support

engagement opportunities to be the main issue. Engagement discussions rest with a limited number of people within First Nations communities, typically, the chief and council. This causes a strain on engagement and agreement arrangements (Fortier et al., 2013) because First Nations communities do not have multiple people to rely on or ask for assistance to support engagement needs.

In Nova Scotia government leaders indicated there is a lack of fire management staff available to support partnership development with Indigenous peoples in the province posed a barrier. Additionally, during the time of the interviews in 2018, only British Columbia and Saskatchewan had identified dedicated Indigenous liaisons within their fire programs. More recently in 2018, British Columbia added a director of partnerships, and Fire and Emergency Services New Zealand has one national Māori advisor.

The second barrier identified by Indigenous leaders from all six jurisdictions was the lack of inclusion in regional, provincial or federal meetings regarding fire management planning, response and recovery. Some Indigenous leaders expressed they were aware of meetings taking place around them but were not invited or in terms of relationship building they were not sure who to contact within the fire management program to start the conversation. There were only two jurisdictions, British Columbia and Ontario who brought forward inclusion discrepancies needing action. More specifically, British Columbia's director indicated that a stronger emphasis on Indigenous history and culture was needed to support BC wildfire staff more broadly.

The third largest barrier for Indigenous leaders from Saskatchewan, Ontario and Nova Scotia was the mistrust of the provincial government and their intentions, which ultimately influenced their willingness to engage with the provincial government. Participants spoke about

colonial assimilation policies and practices carried out by governments to Indigenous peoples and their cultures. As indicated by Nikolakis & Nelson (2019), trust is the “social glue” in societies, when people trust one another they are more cooperative, which leads to positive social and economic growth. Colonial assimilation practices have created deep seeded trust concerns by Indigenous peoples towards federal and provincial governments. Some examples that have influenced this mistrust include residential schooling and government policies. In Canada in 1948 60% of Indigenous children attended residential schools and by 1969 that same Indigenous population had been integrated into provincial school systems where assimilation practices continued (Griffith, 2015). While attending residential schools’ Indigenous children suffered malnutrition, neglect, as well as physical, sexual and psychological abuse (Bombay et al. 2013). Additionally, the Canadian federal government in 1969 developed the White Paper which sought to exterminate the rights of Indigenous peoples by abolishing the Indian Act, Indian Affairs and Indian status as way to create equality this created significant resistance amongst Indigenous groups. Furthermore, in New Zealand, the British colonization process relied on the Doctrine of Discovery in breach of the Waitangi Treaty of 1840. The Doctrine of Discovery were ‘rules’ imposed by British immigrants that included asserting the British power and authority, establishing a parliament that was the centre of power for the entire country, Maori resources and territories belonged to the British Crown providing British immigrants with control over Maori (Mutu, 2019).

Colonization dispossessed Māori of 95% of their lands and resources, usurped Māori power and authority and left them in a state of poverty, deprivation and marginalisation while procuring considerable wealth, prosperity and privilege for British settlers (Mutu, 2019).

However, in 1987 Māori won the infamous *Lands case*, *New Zealand Māori Council v AttorneyGeneral*. This ordered that state-owned enterprise, Crown forest and certain other lands be returned to Māori, along with compensation for forests. For the first time, Māori had legal rights to recover their lands (Mutu, 2019).

Government leaders in the Northwest Territories indicated Indigenous peoples have told their agency they have concerns that decision-making by the department of environment and natural resources could infringe on their treaty rights. Relationships between the federal and provincial governments in Canada and with the Crown of New Zealand are sanctioned by legislations, treaties, case law, and engrained social constructionism government policies and practices (Burr, 2015; Gergen, 2015; Block & Laing, 2007). Many countries have constitutions which are the governing legislative instruments and doctrines that are a product of a country's unique history. The different constitutional backgrounds make judicial review different in each jurisdiction, no matter how closely related, for example between Canada and New Zealand. In Canada, the fundamental law is the Canadian Constitution Act 1982, schedule B to the Canada Act 1982 (UK), s. 35 outlines the rights of the Indigenous peoples of Canada. In New Zealand the country does not have an overarching constitution per se but rather possess different tools of power, including Acts of Parliament, legal documents, decisions of the courts, and generally accepted practices or conventions (New Zealand Government 2020). In addition to the Treaty of Waitangi in New Zealand, for example they have the Treaty of Waitangi Act 1975, amendments 1985, the Official Information Act 1982, the New Zealand Bill of Rights Act 1990, and the *te Tura Whenua Māori Act 1993* (Warbrick, 2016).

Although steps have been taken by government fire management agencies to increase engagement with Indigenous peoples, colonial and post-colonial practices sustain hesitations by both Indigenous peoples and government on how the other will be received if informal conversations are initiated to discuss fire management practices. The effects of colonialism on the relationship between Indigenous peoples and government employees have created trepidation that can hinder engagement opportunities. Naturally, as Indigenous peoples work to “decolonize” for the survival of their people and traditions, governments aim to break down culturally engrained habits internally that have been carried over for decades and found in discourse, such as legislations and policies. This was evident during the government leader interviews, as participants explained how their jurisdiction was working to be more inclusive of stakeholders needs, including Indigenous peoples. Some examples of inclusivity best practices added to fire agencies’ repertoire was the additional fire management response approach taken to include Indigenous peoples in the fire suppression planning, prevention and mitigation initiatives co-led by fire agencies and First Nations communities, as well as the employment opportunities provided to First Nations communities, particularly in Canada. Trust is a vital component of collaboration and power-sharing between governments and with local resource users. A lack of trust and processes to build trust are barriers to collaboration and natural resource governance outcomes (Hotte et al., 2019).

Government and Indigenous leaders identified turnover in government agencies and First Nations communities as a barrier impeding the relationship between fire agencies and the broader government with Indigenous peoples. Leaders in Ontario explained that as with new governments changeover in staff can occur locally, provincially and federally. Chief Skead

echoed these concerns, saying relationships take years to build between government and First Nations communities and cannot be replaced overnight. Government leaders from Northwest Territories and Nova Scotia also expressed the difficulty with the turnover in First Nations communities potentially every two years with First Nations communities' elections, which means that if there is a change in leadership, government agencies need to find out who to contact and rebuild relationships. For federal and provincial elections leadership can change every four years

A significant barrier identified by government leaders in British Columbia, Saskatchewan and Ontario was the large number of federal, provincial and local agencies involved during a wildfire emergency with First Nations communities. In British Columbia, for example, government and Indigenous interview participants identified the following provincial response aid organizations, the British Columbia Wildfire Service and Emergency Management BC, as well as any local authority where the fire is located, including municipalities, townships, police, fire department, non-government organizations, and the federal government, First Nations' Emergency Services Society, the Canadian Red Cross are or can all be engaged during wildfire response or threat (McGee, 2020). The multi-agency approach to fire response has created barriers between First Nations and wildfire management agencies in Canada, as the specific roles and responsibilities of all the different agencies and actors can be difficult to understand throughout the life cycle of a wildfire emergency event. This was brought forward by the Saskatchewan, Ontario and British Columbia fire management agencies who had experienced this complication. First Nations communities' interact with multiple agencies on a daily basis during wildfire emergency to obtain the most accurate information to help them make decisions

for their community's well-being, inaccurate information by the wrong agency can lead to unnecessary actions by the First Nations community resulting in additional problems or set-backs to relationships between the First Nation community and fire management agency.

Both Saskatchewan government and Indigenous leaders brought forth the engagement barrier borne from the international import of firefighters to support national wildfire escalation suppression efforts. There is a desire to develop and train First Nations Type 2 firefighters to the national standard so they may be deployed during national escalation. Currently, international firefighters are brought in from other countries to support fire suppression efforts, which causes First Nations communities to question why their own province is not investing and advocating for their people. This lack of investment and opportunity for First Nations people contributes to the broader issues of engagement and why there may be hesitation from First Nations communities.

6.3. Chapter Summary

In this chapter, I examined the results of how and why Indigenous peoples are engaged in wildfire management and to what extent Indigenous peoples are engaged in wildfire management by applying Arnstein's (1969) ladder of participation conceptual engagement model to assist in understanding the meaning and depth of the results. As indicated above, engagement by government wildland fire management agencies in Canada and in New Zealand spans Arnstein's (1969) ladder, from non-participatory to the partnership rung of engagement, depending on the reason for engagement and circumstance requiring engagement. This leaves the delegated power and citizen control rungs to be further explored by fire management agencies and Indigenous

peoples. The following finding suggests the need for further planning and development of engagement frameworks within government fire management agencies. The recommendations from the suggested findings are discussed at greater length in the following, and concluding, chapter.

Chapter 7. Conclusion

7.1. Introduction

This study set out to understand how and why Indigenous peoples are engaged in wildland fire management within Canada and New Zealand, identify the barriers that are impeding the relationship between government fire management agencies with Indigenous people, and discuss recommendations to improve the relationship. This chapter describes the academic contributions of this study and recommendations for government policy and practices.

7.2. Summary of Findings

The results of this study are based on interviews with 29 participants including six First Nations chiefs and two councillors, three Indigenous organization leaders, and 12 fire managers from five provinces and territory in Canada; and one Māori leader and five fire managers in New Zealand.

Key findings about how and why Indigenous peoples are engaged in wildfire management by government fire management agencies predominantly exists during governments response to a wildfire in First Nations communities or within Māori settlement areas, as well as for employment purposes of Type 2 Firefighters in Canada. All government fire management agencies in Canada and New Zealand engage the impacted First Nations or Māori community to some degree when there is a wildfire threatening Indigenous peoples. This is achieved by engaging Indigenous leaders during fire suppression planning to obtain their fire management goals for their community and territory and discuss the government fire agency's proposed approach. As indicated by government participants in all jurisdictions, the level of community

engagement by the fire management agencies is continually evolving to meet the needs of Indigenous peoples. In relation to Type 2 firefighting employment in Canada, many jurisdictions including Northwest Territories, Saskatchewan, and Ontario have bilateral agreements in place between First Nations, tribal councils or non-governmental organizations. This includes private contractors that hire, train and facilitate employment between Indigenous peoples and the province, territory or federal government. In Canada some government leaders identified that engagement occurs through annual meetings that discuss hazard fuel management needs or emergency management planning. In New Zealand, wildland fire engagement is beginning to occur with the regional committees that have Māori representation to bring forward Māori needs in relation to community wildfire protection and mitigation. The data also suggests engagement between Indigenous peoples and government fire management agencies pertaining to wildland fire management is higher in Saskatchewan and Northwest Territories, moderate in British Columbia and Ontario and lower in Nova Scotia and New Zealand. There appeared to be limited engagement from the perspectives of Indigenous leaders in relation to fire management planning, including mitigation and FireSmart fuel treatment programs in First Nations or Māori communities' facilitation of after-action reviews with the multiple agencies involved in coordinating the wildfire response and recovery following a wildfire or emergency preparedness planning with the multiple agencies involved during wildfire emergencies, as examples.

In addition to understanding engagement occurrences between government fire management agencies and Indigenous peoples, this research examined the barriers impacting the relationship. From the perspective of Indigenous leaders, distrust from past assimilation practices and present-day intergenerational traumas resulting from government actions is a factor

impacting the desire by First Nations communities to engage with government fire management agencies and to what degree they were open to engagement. The level of engagement by government fire managers with Indigenous communities was said to be impacted by the available government human resources in the province, territory or country to support engagement. Likewise, all Indigenous leaders interviewed identified a lack of funding to hire staff, as well as a lack of human resource capacity within community leadership to support engagement as a critical barrier influencing engagement opportunities. Additional barriers identified by government agencies include a lack of employee cultural awareness and education on Indigenous history within Canada and New Zealand, as well as the number of agencies involved during wildfire response operations, which causes confusion and disruption to the First Nations and fire agency relationship. While during interviews, participating government staff recognized their growing responsibility to engage their Indigenous partners more regularly, they felt that the shift in engagement practices will take time, financial support and added human resource capacity. Additionally, one jurisdiction British Columbia spoke about the fear that fire management staff have due to existing land claim negotiations occurring between the province and some First Nations. This fear impacts engagement by BC Wildfire Services, as they do not want to say the wrong thing or interfere with ongoing negotiations.

A post-colonial theoretical lens was used throughout this research that examines the relationship between Indigenous peoples and government fire management agencies. Postcolonial theory observes the influence of European colonialism on current forms of political, social, historical, and economic structures, as well as current patterns of thought (Kerner, 2018). Furthermore, post-colonial research aims to break down power imbalances and accept the rights

and knowledge of Indigenous people through inclusive conversations and meaningful engagement. As suggested in the data, there appears to be low to moderate engagement and partnership occurring for a multiplicity of reasons, including limited staffing and funding to support engagement by governments and indigenous communities, as well as fire agency mandate expansions. The low to moderate engagement further suggests the continued presence of a power imbalance between Indigenous peoples and government fire management agencies, which may be the result of earlier colonial social constructs and patterns. However, during the onset of this research fire management agencies in Canada and New Zealand advocated for the need for this research and provided funding to support the research. This form of recognition by fire agencies proposes that strides from a post-colonial lens are being made coupled with an ongoing effort to increase Indigenous people's involvement in wildfire management.

7.3. Contributions

This thesis contributes to understanding how and why Indigenous peoples in Canada and New Zealand are and are not engaged in wildland fire management by government fire management agencies. Engagement of Indigenous peoples occurs primarily during wildfire response to capture specific land management needs of First Nations and Māori communities, this is accomplished through face to face discussions during wildfire events and by phone with other supporting agencies. Secondly, engagement by fire programs occurs through the hiring and or support roles of First Nations peoples in Canada.

I am not aware of any other research that examines how and why Indigenous peoples are engaged in wildfire management in Canada and New Zealand. However, in terms of literature

examining trust between governments and Indigenous peoples there is a plethora of academic contributions which describe how the mistrust began in Canada and New Zealand. In particular historical and present-day issues related to land and resource management under the context of ownership (Wilson et al., 2018), residential schools (Bombay et al. 2013; Nikolakis & Nelsaon, 2018), and questions of sovereignty all affect Indigenous peoples' trust in governments. More specifically, Nikolakis & Nelson (2018) examined if trust creates more robust institutions or if robust institutions create trust among constituents. Their results indicated that voice and citizen involvement in institution building coupled with cultural revitalization is an important driver to foster trust for the First Nations who participated in their study. The results of my study add to this literature by identifying the barriers hindering the relationship between fire management agencies and Indigenous peoples and providing recommendations by government and Indigenous leaders participating in this research to overcome barriers and build trust.

7.4. Future Research

There are several avenues for future research to build on this study. The first area for future research could investigate engagement activities by government fire management in the other jurisdictions in Canada that were not included in this research, including the Yukon, Nunavut, Alberta, Manitoba, Quebec, New Brunswick, Newfoundland and Labrador, and Prince Edward Island. This could provide additional insights into their local engagement practices, barriers and recommendations that may either verify these research findings or present new findings. Secondly, further research could explore how the recommendations provided from this

study, if implemented by fire management agencies in Canada and New Zealand have strengthened the relationship overall and study specifically what has changed and why.

7.5. Limitations

Any research project has limitations; this one is no exception. Within each case study I had hoped to interview three Indigenous leaders and three government leaders for a total of 36 interviews and instead achieved 29 interviews. My hope was to achieve an equal voice across all jurisdictions, meaning an equal amount of Indigenous interview participants to government participants. This could impact the quality of my research as it does not have an equal representation of Indigenous leaders to government leaders. Secondly, the large number of case studies presented time management challenges as a researcher, as six case studies required significant time understanding the individual jurisdictions, governments and their contexts, as well as the Indigenous backgrounds and territory histories. The wildland fire management community is worldwide, the policies and practices developed and adopted by each fire agency are done in a way that streamlines wildfire service delivery, this allows for easy transferability from one agency to another and provides relief during times of wildfire suppression and response, as everyone is trained to a certain standard, abides by the same rules and follows the same incident management system. By including all six jurisdictions in this research it provides them with the fundamental building blocks on how they can improve engagement with Indigenous peoples utilizing the recommendations put forward by the jurisdictions, which can be applied in other jurisdictions to streamline engagement practices on a grander scale in the wildfire community.

7.6. Recommendations

Recommendations for improving the relationship between Indigenous communities and fire management agencies were made by both Indigenous and government leader interview participants in each case study. Below I have highlighted the main themes of recommendations brought forward. For a complete listing of recommendations by government and Indigenous leaders see Appendix I. The section below is separated by Indigenous leader recommendations followed by government leader recommendations.

Indigenous Leaders

Indigenous leaders recommended that their peoples continue to be included in employment opportunities to support fire management efforts. This inclusion effort by governments aids to build trust between government and Indigenous peoples. An example is to deploy Type 2 First Nations sustained action firefighter crews nationally. There currently is no national agreement to share Type 2 firefighters, which are positions predominantly filled by Indigenous peoples between jurisdictions. In addition to frontline firefighter support, Indigenous leaders also want to see their people employed in fire suppression roles within their own communities, occupying positions in logistics, community planning, food and meal preparation, and other support functions. This will positively affect engagement desires by Indigenous peoples if government fire management agencies begin to invest in Indigenous peoples' employment.

As indicated throughout the results and discussion chapter a large recommendation was for Indigenous communities to receive adequate funds from the federal government and or

provincial government to build the necessary human resource capacity to support engagement opportunities. Human resource capacity needs would vary by location and require engagement between the Indigenous community or organization with the federal and provincial government to discuss these needs in more detail. These funds could extend to help purchase the necessary fire suppression equipment to help with wildland fire response around their communities. The Indigenous leader in New Zealand recommended that Māori people need to be engaged regarding how money is spent within their communities regarding fire prevention and mitigation activities. Currently Fire and Emergency services uses a blanket approach for all communities and provides them with what they think they need versus what they may actually find useful.

Additionally, Indigenous leaders in most jurisdictions identified the need for a community emergency response plan to be developed between government fire managers and First Nation communities to help support the collaborative approach in wildfire response. Large scale emergency management planning done in advance of fire emergencies would be beneficial in strengthening the multi-stakeholder relationship and provide stakeholders with the opportunity to exercise their individual roles and responsibilities through practice simulations.

Another opportunity to increase engagement between Indigenous peoples and government is for governments to acknowledge their Indigenous partner as a viable host for other First Nation community evacuees. From the perspective of Indigenous leaders this is a missed opportunity for Indigenous peoples to be engaged and partnered with by the province or federal government. An evacuation host community receives financial revenue that can be used for community development needs and be an opportunity to build connections between First Nations communities.

Government Leaders

A main recommendation brought forward by government leaders to improve the relationship between Indigenous peoples and government fire management agencies was for government and non-governmental agencies to clarify their roles and responsibilities during wildfire emergencies. In the past, varying partners have offered advice to First Nations outside of their agencies' subject matter expertise which caused confusion to the First Nation. Likewise, this recommendation was echoed by Indigenous leaders above.

Further recommendations put forward by government leaders suggest that fire agencies enact the principles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). This enactment would assist to align fire agencies engagement and planning activities with Indigenous peoples across Canada and New Zealand, providing governments with a more streamlined approach approved by Indigenous peoples from around the world. Fire agencies would be required to review the UNDRIP principles and compare their current approach with Indigenous peoples and address the gaps accordingly. A facilitated session between government fire agencies with Indigenous communities on how to integrate the UNDRIP principles that would support all layers of both Indigenous and fire management government would be a helpful starting point.

Government leaders recommended that First Nations communities be equipped with their own firefighting equipment and training resources so that they can locally respond when a wildfire occurs. This can be achieved through partnership between governments or independently by the First Nations with the federal government. Government leaders also felt this level of support to First Nations communities could extend to the development of their

individual emergency response plans. Indigenous leaders also expressed the same deficiency within some of their First Nations communities. Emergency response plans can provide clarity and organization during times of intense threat, including tornado, ice storm, wildfire, flood, and other emergencies.

Fire management leaders also suggested adjustments need to be made to their employment recruitment strategies and hiring practices to be more inclusive of Indigenous peoples. This can be achieved by providing accessible information obtainable online or in-person at local fire management centres and fire brigades regarding employment opportunities, what skill sets are required and how Indigenous peoples can obtain the necessary certifications. To further support employment recruitment for today's needs and those of the future, fire programs indicated that more Indigenous peoples need to be the face of recruitment and outreach to share their stories about their experiences to the up and coming generations. Inclusive and equitable hiring practices showcase to Indigenous peoples the government's efforts to continue to partner with their people.

7.7. Way Forward

This research examined how and why Indigenous peoples are engaged in wildland fire management, barriers to engagement, and recommendations for increasing engagement. In addition to the specific recommendations from Indigenous and government leaders presented in section 7.6, the results of this research and relevant academic literature point to broader

recommendations to enhance engagement between Indigenous peoples and fire management agencies.

Through my research I recognized there was not a national platform for both government and Indigenous groups to come together for wildfire engagement purposes. As part of the interview questionnaire, I asked Indigenous and government leaders if they felt there was merit to inaugurating a national committee to discuss the ongoing challenges and future wildfire strategies in an effort to develop a more solution-based model between Indigenous peoples and government agencies. All Indigenous participants supported this concept as well as most government fire management programs and hoped it would soon come to fruition. In alignment with the broader national engagement needs, government leaders proposed local roundtable engagement sessions where fire managers could ask if Indigenous peoples and their communities would like to educate government staff on their Traditional Ecological Knowledge and how it may be incorporated into their wildfire response, as well as answer any questions communities may have regarding the fire management practices carried out by governments.

Arnstein's ladder of participation (1969) provided a useful model for gauging how Fire management agencies engage Indigenous peoples in wildfire management. However, it is also clear that fire management agency research participants recognized the need to improve engagement with Indigenous peoples and are in the early stages of making improvements in their engagement activities. To support these efforts, I recommend two models which could help government agencies as they work on improving their engagement efforts. The first model is the Five-Feature Framework by Talley et al. (2016) which includes the steps of 1) setting clear

objectives, 2) systemically representing stakeholders, 3) using relevant methodologies, 4) providing opportunities for co-ownership, and 5) reflecting on process and outcomes.

Second is Morton et al.'s (2012) Collaborative Planning (CP) model of engagement in land and resource management issues which recommends a two-tiered approach. CP has been used to help reach consensus amongst Indigenous and non-Indigenous peoples. The two-tiered engagement approach provides advice about how government agencies can engage all stakeholders during the first tier of engagement, including Indigenous peoples, and for the second tier of engagement, the plan developed out of engagement at tier one is provided to the second tier for engagement which includes Indigenous peoples and the provincial government. This collaborative planning approach developed by Morton et al. (2012) may expand existing engagement practices used by fire management agencies. This CP engagement approach encourages transparency and inclusivity in policy and procedural framework development that reverberates the needs of Indigenous and Māori communities, further allowing Indigenous peoples to have an influential voice in the decisions regarding fire management in their territory and area. A strong recommendation expressed by Indigenous leaders throughout this research is they want to be considered an equal partner. I recommend that fire management agencies use the Collaborative Planning model (Morton et al., 2012) to improve their engagement practices. Governments across the globe are taking large strides to be more inclusive and partnering with Indigenous peoples and their organizations where possible. Fire management agencies need to do the same. By including Indigenous peoples in the general group of stakeholders to be engaged this could be interpreted as a form of dilution to the overall purpose of true partnership.

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Appendix A

Table 1: Participant Overview

Country: Canada				
Location	Participant	Identify as Indigenous or Government Employee	Role	Community/Organization
Nova Scotia	1	Indigenous	Executive Director	Atlantic Policy Congress First Nation Chiefs
	2	Government	Deputy Minister	Department of Lands and Forests, Nova Scotia
	3	Government	Director	Department of Lands and Forests: Provincial Forest Protection
	4	Government	Manager	Department of Lands and Forests: Provincial Forest Protection
Ontario	5	Indigenous	Chief	Obishikokaang First Nation, Sioux Lookout and Red Lake

	6	Indigenous	Chief	Wauzhushk Onigum First Nation, Kenora
	7	Government	Assistant Deputy Minister	Ministry of Natural Resources and Forestry: Aviation, Forest Fire and Emergency Services
	8	Government	Director	Ministry of Natural Resources and Forestry: Aviation, Forest Fire and Emergency Services
	9	Government	Northwest Regional Response and Operations Manager	Ministry of Natural Resources and Forestry: Aviation, Forest Fire and Emergency Services
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Saskatchewan	10	Indigenous	Chief	Waterhen First Nation
	11	Indigenous	Band Councillor	Waterhen First Nation
	12	Indigenous	Forestry Director	Prince Albert Grand Council
	13	Government	Executive Director	Ministry of Environment: Wildfire Management Program, SK
	14	Government	Director of Wildfire Operations	Ministry of Environment: Wildfire Management Program, SK
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Northwest Territories	15	Indigenous	Chief	Déh Gah Got'ie First Nation
	16	Indigenous	Band Councillor	Liidlįj Kúé First Nation
	17	Government	Executive Director	Ministry of Environment and Natural Resources: Forest Management, NT
	18	Government	Manager of Fire Operations	Ministry of Environment and Natural Resources: Forest Management, NT

British Columbia	19	Indigenous	Chief	Secwepemc First Nation
	20	Indigenous	Chief	Williams Lake Indian Band First Nation
	21	Indigenous	Manager	First Nations' Emergency Services Society: Department of Forest Fuels
	22	Government	Regional Manager	BC Wildfire Service
	23	Government	Executive Director	BC Wildfire Service

Country: New Zealand

Location	Participant	Identify as Indigenous or Government Employee	Role	Community/Organization
Christchurch, South Island	24	Indigenous	Māori Leader	Tira Whakamtaki, the New Zealand's Biological Heritage National Science Challenge, and the Ministry of Environment
Wellington, North Island	25	Indigenous/Government	National Māori Advisor	Fire and Emergency Services New Zealand, Wellington
Auckland, North Island	26	Government	Rural Fire Officer	Fire and Emergency Services New Zealand, Auckland
Rotorua, North Island	27	Government	Regional Rural Fire Manager	Fire and Emergency Services New Zealand, Rotorua
Wellington, North Island	28	Government	National Manager of Rural Fire	Fire and Emergency Services New Zealand, Wellington

Appendix B

Table 1: Coding Framework, Government Interview Data

1. Jurisdictional responsibility (Parent code)
 - a) Fire Management scope
 - b) Interviewee experience, personal knowledge
2. Engagement with Indigenous peoples (Parent code)
 - a) Perception of government relationship with Indigenous peoples
 - b) Fire experience with Indigenous peoples
 - c) Their understanding of Indigenous peoples and community's perspective of wildland fire
 - d) Training of Indigenous peoples to respond to wildland fires
 - e) How does the province/territory/country(jurisdiction) engage with Indigenous peoples
3. Barriers (Parent code)
 - a) Wildland fire is a low priority of Indigenous peoples
 - b) No interest from Indigenous peoples
 - c) Government staff do not know who to engage in communities
 - d) Lack of Indigenous knowledge (Government)
4. Opportunities and recommendations to improve the relationship between government and Indigenous peoples (Parent code)
 - a) Communication
 - b) Planning
 - c) Traditional Ecological Knowledge (TEK), decision making
5. Initiatives that are working well (Parent code)
6. Climate change (Parent code)

Coding Framework, Indigenous Interview Data

1. Engagement between Indigenous peoples/community and the government specific to wildland fire (Parent code)

- a) Relationship with the province or federal government
- b) Indigenous or community experience with wildland fire
- 2. Barrier (Parent code)
 - a) Trust
 - b) Capacity or financial constraints
 - c) Jurisdictional issues
 - d) Low priority for Indigenous community
- 3. Opportunities or recommendations to improve the relationship between Indigenous peoples and government (Parent code)
 - a) National or provincial committee to support relationship
 - b) Traditional ecological knowledge (TEK) used for planning
 - c) Communication
- 4. Initiatives that are working well between Indigenous peoples and government (Parent code) 5. Responsibility (Parent code)

Appendix C: British Columbia, Canada Table

A: Indigenous Leaders

Indigenous Leaders	Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management	
	<u>Williams Lake Indian Band (WLIB), BC:</u> a) WLIB is engaged by the BCWS through fuel hazard treatment programs around the community. BCWS provides education, tools and resources to help ensure the burning is successful and mitigate any risk.	b) Prior to the busy fire season of 2017 engagement between BCWS and WLIB required improvement. However, after the busy fire season a more collaborative relationship ensued.
	<u>Neskonlith First Nation (NFN), BC:</u> a) The NFN has a tripartite emergency management Memorandum of Understanding (MOU) with the federal and provincial government under Emergency Management BC(EMBC).	b) Prior to the fall of 2018, engagement discussions during wildfire events between government and NFN was perceived to be minimal until MOU took into effect. c) Wildfire training support and emergency response plan development provided by the First Nations' Emergency Services Society (FNESS) has been proven to be successful within NFN.
	<u>First Nations' Emergency Services Society (FNESS), BC</u> a) FNESS is an agency that acts as conduit between government agencies and FN communities in BC. b) FNESS indicates BCWS engagement with FN communities is inconsistent and specific to prescribed burning within selected communities.	
	Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildfire management	
	<u>Williams Lake Indian Band, BC</u>	b) The lack of cultural understanding by the BCWS of the varying FN groups prevents progress.

a) There is a lack of available funding to employ FN people to manage wildfire emergency response.	
<u>Neskonlith First Nation (NFN), BC</u> a) The cost recovery process in place for FN communities with the federal government is too onerous and not helpful. b) NFN predominantly communicates with FNESS who assists them with their navigation of Emergency Management, BC.	c) The community is not engaged at the larger emergency planning tables. d) Many of the First Nation communities in BC are not resourced appropriately with equipment and trained and capable personnel to fight wildfire. e) Provincial and federal reports developed to review lessons learned have not been shared.
<u>First Nations' Emergency Services Society, BC</u> a) The use of technical scientific jargon by BCWS can be difficult for Indigenous peoples to understand. b) There is a lack of use of locally trained Indigenous firefighters	c) Lack of Indigenous cultural knowledge by BC government employees is a barrier.
Objective 3: To <i>recommend</i> ways to increase the involvement of Indigenous peoples in wildfire management.	
<u>Williams Lake Indian Band, BC</u> a) There is no agreement of commitment between the WLIB and BCWS to support collaboration. b) WLIB would like an after-action review with federal and provincial to discuss lessons learned.	c) Education sharing by BCWS and WLIB regarding fire management decisions. d) National committee, policy and procedural framework to support wildfire management.
<u>Neskonlith First Nation (NFN), BC</u> a) Action needed on previously recommended changes by other reports b) Collaborative and joint wildfire preparation planning required	c) Implement the global United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) into fire management planning.
<u>First Nations' Emergency Services Society, BC</u> a) Involve FN communities in prescribed burning	b) BCWS needs to build trust through gatherings and exposure, collaborative initiatives and providing opportunities to their people to support in fire management.

Table B: Government Leaders

Government Leaders	Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management	
	<u>British Columbia Wildfire Service, BC:</u> a) Engagement between First Nation communities and BCWS occurs during times of wildfire escalation b) BCWS is working towards pre-fire season discussions with FN communities to help with preparedness and response.	c) A Director for Partnerships and Indigenous Relations was hired as the linkage between FN communities and BCWS to help progress relationships.
	Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildfire management	

<p><u>British Columbia Wildfire Service, BC:</u></p> <p>a) There is a lack of cultural awareness and understanding of the varying Indigenous communities within the province by BCWS employees.</p> <p>b) Multiple agency involvement during recovery result in frustrations by FN communities</p> <p>c) The politics/relations between FN communities can pose a response challenge to BCWS.</p>	<p>d) The tripartite relationship between FN communities, Federal and Provincial government creates some challenges.</p> <p>e) There is a bit of fear that BC government people cannot go and speak to FN people because there are lawyers and treaty negotiations or fear of criticism.</p>
<p>Objective 3: To recommend ways to increase the involvement of Indigenous peoples in wildfire management.</p>	
<p><u>British Columbia Wildfire Service, BC</u> a) BCWS and Federal government developing process to bridge the communication issues between FN communities, federal and provincial governments.</p> <p>b) The adoption of all fire agencies in Canada of the fundamental principles of the United Nations Declaration for the Rights of Indigenous Peoples (UNDRIP).</p>	<p>c) A national wildfire committee for Indigenous and government leaders to bring the UNDRIP concept to life</p>

Appendix D: Northwest Territories, Canada

Table A: Indigenous Leaders

<p>Indigenous Leaders</p>	<p>Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management.</p>	
	<p><u>Ljidljij Kúé First Nation (LKFN), NT:</u></p> <p>a) Annual community education gatherings educating people on property protection from wildfire.</p> <p>b) LKFN has an emergency response plan that outlines roles and responsibilities of their community and other agencies.</p>	<p>c) During wildfire incidents, ENR engages the Chief to inform them of the existing situation</p> <p>d) The community completes mock exercises related to the emergency response plan. These exercises assist to prepare individuals for evacuation from wildfire or flooding and other issues that may impact the community.</p>
	<p><u>Déh Gah Got'ie First Nation (DGGFN), NT:</u></p> <p>a) Wildfire engagement occurs through their incorporated hamlet of Fort Providence in Yellowknife with the Municipal and Community Affairs Dept.</p> <p>b) DGGFN in partnership with ENR employ forest firefighter staff to support fire suppression.</p>	<p>c) DGGFN does not have annual or regular engagement with the local department of Environment and Natural Resources (ENR), NT specific to wildland fire acknowledged they would like more regular conversations.</p>

<p>Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management.</p>	
<p><u>Liidljj Kúé First Nation, NT:</u></p> <p>a) Lack of engagement in past by ENR to FN regarding wildfire suppression and decision-making has created distrust.</p> <p>b) Engagement often feels one sided and not inclusive.</p>	<p>c) Daily or weekly wildfire situation updates forwarded from ENR are not occurring. There are tainted relations between ENR and LKFN resulting from past timber disputes. These relations impact wildfire relations as well.</p>
<p><u>Déh Gah Got'ie First Nation, NT:</u></p> <p>a) The WFX fitness test enforced by ENR impedes FN community members pursuit of firefighting employment.</p> <p>b) Government removed the community's ability to conduct prescribed burning to mitigate hazardous fuels around community.</p>	<p>c) Lack of employment opportunities within the community require people to leave.</p>
<p>Objective 3: To <i>recommend</i> ways to increase the involvement of Indigenous peoples in wildfire management.</p>	
<p><u>Liidljj Kúé First Nation, NT:</u></p> <p>a) ENR to focus on strengthening their communication and education of wildland fire to community members.</p>	<p>b) LKFN requires adequate funds to build the necessary capacity to assist with the management of emergency response planning.</p>
<p><u>Déh Gah Got'ie First Nation, NT:</u></p> <p>a) Bi-annual or annual face to face meeting between ENR and DGGFN to support planning and fire response.</p>	<p>b) DGGFN requested fire management of their territory to be inclusive with their people to achieve common goals related to forest health and future needs.</p>

Table B: Government Leaders

<p>Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management</p>
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<p><u>Environment and Natural Resources, NT:</u></p> <p>a) Wildland fire engagement with Indigenous peoples is coordinated by one Aboriginal Liaison Coordinator for the five regions within NT.</p> <p>b) ENR acknowledges engagement is not consistent with Indigenous peoples and is determined by the individual needs of the FN communities.</p> <p>c) ENR engages Indigenous peoples through social media platforms and by keeping their ENR website up to date with relevant fire information.</p>	<p>d) Attempts are made to facilitate after action reviews with FN communities impacted by wildland fire.</p> <p>e) During wildland fire incidents ENR holds information meetings to share details of the fire situation, which Indigenous peoples are welcome to attend</p> <p>f) During wildland fire incidents, ENR will take the Chief for an aerial reconnaissance flight to brief them on the fire impacting their territory.</p>
<p>Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management</p>	
<p><u>Environment and Natural Resources, NT:</u></p> <p>a) In ENR’s experience, there appears to be a common fear by Indigenous People that the government will make a rule that infringes on their land claim.</p> <p>b) The turnover in ENR staff, as well as in First Nation Bands stresses existing and to be developed relationships.</p> <p>c) ENR observes FN communities have capacity issues and are divided in their responsibilities which impacts engagement together.</p>	<p>d) Once the wildland fire and smoke disappear from the landscape and sky the driving interest to engage with ENR dissipates.</p> <p>e) ENR observes a disconnect between the way younger generations receive their fire knowledge and understanding, their desire to be involved, and the way they expect to be involved versus older generations.</p> <p>f) Previously arranged meetings between ENR and FN communities have been avoided by the Chief, resulting in no engagement and incurred expenses to travel great distances.</p>
<p>Objective 3: To <i>recommend</i> ways to increase the involvement of Indigenous peoples in wildfire management.</p>	
<p><u>Environment and Natural Resources, NT :</u></p> <p>a) Discussions and engagement that happens informally with food and not time limit produce the most valuable relationships.</p> <p>b) ENR to provide fire suppression and decisionmaking education to help people understand wildfire planning and response.</p> <p>c) The implementation of a national working group to develop wildfire policy and procedural framework to support government and Indigenous groups in Canada</p>	<p>d) ENR would like FN communities to establish their own firefighting resources to respond to fires locally and have ENR reimburse them.</p> <p>e) ENR staff education by Indigenous peoples on traditional ecological knowledge and their use of fire.</p>

Appendix E: Saskatchewan, Canada
Table A: Indigenous Leaders

Indigenous Leaders	Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management.	
	<u>Waterhen Lake First Nation (WLFN), SK:</u> a) WLFN is a community that is part of the Meadow Lake Tribal Council (MLTC) who is the medium between WMSK and WLFN for fire suppression crews. b) WLFN engages regrading fire suppression response on their territory to develop a collaborative approach.	c) During 2018 fire escalation and threat to WLFN, WMSK assigned an Aboriginal Liaison Coordinator responsible for supporting the Chief with planning and multiple agency response.
	<u>Prince Albert Grand Council (PAGC), SK:</u> a) PAGC is engaged in wildfire management independently and with their partner WMSK. b) PAGC in support from WMSK educate Type 2 FN firefighter crews from all 12 FN communities that are members of PAGC.	c) The SK Wildfire Task Force Committee initiated by PAGC provided many recommendations to the province, including the involvement of FN people in the process and management of fires.
	Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management.	
	<u>Waterhen Lake First Nation, SK:</u> a) Trust is an overarching barrier for WLFN due to historical circumstances. b) WLFN is unaware of who to contact in WMSK to engage in conversations regarding planning, response or issues related to fire.	c) There is minimal capacity in the community's administration to dedicate staff solely to emergency response planning due to a lack of funding.
	<u>Prince Albert Grand Council, SK:</u> a) There are varying perceptions of wildfire on the landscape by Indigenous peoples that impacts collaboration and understanding of WMSK's decisions. Education and discussion required. b) There is a lack of confidence by FN communities in the provinces decision-making.	
	Objective 3: To <i>recommend</i> ways to increase the involvement of Indigenous peoples in wildfire management.	
	<u>Waterhen Lake First Nation, SK:</u> a) WMSK to continue engagement with WLFN regarding prevention and preparedness projects, cultural understanding and the use of Traditional Ecological Knowledge prior to large scale events. b) All agencies that support FN communities in response should take time to visit communities before emergencies to become acquainted with the people.	c) Providing adequate, fair and equal partnership through funding or resources to build emergency response capacity. d) There needs to be a national wildland fire committee dedicated to discussing issues that are impacting FN communities and initiatives that are working well in other jurisdictions. A collaboration table.
	<u>Prince Albert Grand Council, SK:</u> a) Develop trained and capable Type 2 crews to be deployed nationally to support fire suppression.	b) WMSK to discuss and implement the use of FN people from the community during wildfire emergencies to support response efforts.

Table B: Government Leaders

Government Leaders	Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management	
	<u>Wildfire Management, Ministry of Environment, SK:</u> a) WMSK is a main employer in northern FN communities for firefighting and other fire response support functions. b) The collaborative employment relationship has helped carve out reciprocal relations leading to daily engagement by Chief and council with WMSK if needed. c) In 2015 WMSK led a provincial-wide engagement with all FN communities to identify their values and issues related to wildfire.	d) WMSK has Protection Officers that meet with FN communities within their designated protection area to discuss employment and emergency planning. During emergencies, WMSK provide aerial reconnaissance flights to Chiefs to show them the impacts to their traditional territory. e) impacted FN communities with fire situation updates, resources and a list of agencies supporting response efforts
	Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management	
	<u>Wildfire Management, Ministry of Environment, SK:</u> a) There is a misinterpretation of the SK wildland fire management strategy. Further education by WMSK is required to remove claims that they enforce a ‘let it burn policy’. b) There is a lack of investment in our countries FN firefighters to be trained and deployed nationally.	c) Some FN communities in SK share a differing of opinion regarding how fire suppression operations are done and who can support response. d) There are a number of agencies involved during emergencies to support FN communities, which complicates the process. Information FN communities receive to make time critical decisions are not always accurate or from the right agency.
	Objective 3: To recommend ways to increase the involvement of Indigenous peoples in wildfire management.	
<u>Wildfire Management, Ministry of Environment, SK:</u> a) Multiple agency response requires clarity on roles and responsibilities so as not to distress FN communities during emergencies. b) Development of robust FN community Emergency Response Plans is required. c) Consideration of FN communities becoming host communities to evacuees to be further discussed.	d) Development of trained and capable FN people to be deployed nationally instead of always bringing in other countries. e) WMSK would like to support the federal government and FN communities on how financial allocation of resources is committed and used for response and preparedness projects.	

Appendix F: Ontario, Canada
Table A: Indigenous Leaders

Indigenous Leaders	Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management.	
	<u>Lac Seul First Nation (LSFN):</u> a) Engagement has evolved over time. The LSFN indicated engagement does not occur within the Sioux Lookout (SLK) district by the fire management headquarters, but does by the Red Lake Fire Management Headquarters(RLFMH). LSFN spans two separate districts in northern Ontario.	b) The RLFMH engages LSFN regarding forest fire management planning, firefighting and other issues. c) Ontario Parks provides LSFN with fire situational updates, maps and photographs specific to fire events impacting their traditional territory.
	<u>Wauzhushk Onigum First Nation (WOFN):</u> a) Engagement is limited outside of fire response with the local Kenora Fire Management Headquarters(KFMH).	b) The KFMH and WOFN collaborated on a community wildfire mitigation project that employed local FN people. Chief Skead was very grateful for the olive branch.
	Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management.	
	<u>Lac Seul First Nation (LSFN):</u> a) Some past collaborative experiences between LSFN and government have created tensions, naturally bringing into trust and loyalty by LSFN. b) Past assimilation government practices have produced intergenerational trauma thus leading to social issues and hardship, which impact Indigenous peoples capacity and desire to support fire management.	c) LSFN does not have an emergency response plan (ERP) that incorporates interagency involvement, including police, district offices and municipalities. In addition to a plan annual exercises of the ERP are required. d) Smaller scale wildfire emergency planning between the LSFN, RLFMH and SLKFMH are required.
	<u>Wauzhushk Onigum First Nation (WOFN):</u> a) Past assimilation government practices have produced intergenerational trauma thus leading to social issues and hardship, which impact Indigenous people’s capacity and desire to support fire management.	b) Changeover in provincial and federal staff can disrupt continuity and trust in relationships, as well as existing collaborative work.
	Objective 3: To <i>recommend</i> ways to increase the involvement of Indigenous peoples in wildfire management.	
	<u>Lac Seul First Nation (LSFN):</u> a) LSFN has membership that are keenly interested to support fire response directly or indirectly through support functions, including logistics, food and equipment management. b) There needs to be a consistent approach throughout Ontario on how Indigenous communities are engaged on wildland fire management.	c) During wildland fire incidents, engagement with FN communities should begin at the onset of an incident and throughout the fire event. Multi-partner emergency exercise simulations in preparation for fire season to ensure people understand their role and responsibilities. d)

<p><u>Wauzhushk Onigum First Nation (WOFN):</u> a) The development of a joint emergency response plan (ERP) with the local fire management headquarters(KFMH) to support fire response and planning would be an asset.</p>	p) Developing wildfire management knowledge capacity building within WOFN to support discussions as a medium between WOFN and KFMH.
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Table B: Government Leaders

<p>Government Leaders</p>	<p>Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management</p>	
	<p><u>Aviation, Forest Fire and Emergency Services, ON:</u> a) Engagement has improved significantly over the years with FN communities. b) Engagement includes: Employment, hazard reduction burning, community prevention and mitigation planning, and emergency response planning.</p>	p) Northern FN communities have a Community Fire Officer that is the liaison between their community and the local fire management headquarters.
	<p>Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management</p>	
	<p><u>Aviation, Forest Fire and Emergency Services, ON:</u> a) There are financial barriers that the provincial government encounters. Financial support is a tripartite effort with the community, federal and provincial government. b) FN communities have their own agendas which may or may not be include capacity for emergency planning depending on the community’s immediate needs and funding.</p>	p) The southeastern part of the province does not receive as much fire as the northwest, so the need for FN capacity and fire management initiatives is not as important. d) AFFES does not have a guideline, policy or strategy to support engagement with FN communities. e) There are larger issues in FN communities to manage instead of fires, including: suicide, social issues, infrastructure, drinking water, etc leading to burnout issues with Chief and Council.
	<p>Objective 3: To recommend ways to increase the involvement of Indigenous peoples in wildfire management.</p>	
	<p><u>Aviation, Forest Fire and Emergency Services, ON:</u> a) Additional education for government employees regarding cultural competency obtained through field level face to face engagement. b) Government is working to improve the distribution of accurate and real time information to FN communities.</p>	p) Additional emphasis and financial support on the FN community-based crews to alleviate the retainment issues contractors are experiencing.

Appendix G: Nova Scotia, Canada

Table A: Indigenous Leaders

Indigenous Leaders	Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management.	
	<u>Atlantic Policy Congress of First Nations Chiefs Secretariat (APC), NS:</u> a) Engagement is minimal between FN communities and DLFNS, Fire Protection. However, FN communities engage with the Emergency Management Office (EMO) who then works with EMO. b) Engagement during an incident occurs directly with the Chief and band manager or with the emergency management liaison by DLFNS.	c) EMO has a central command centre in NS that operates as the communication conduit to FN communities during emergencies.
	Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management.	
	<u>Atlantic Policy Congress of First Nations Chiefs Secretariat (APC), NS:</u> a) The provinces colonial history has led to government employees afraid to engage FN people in NS.	b) FN communities are aware of engagement happening with other partners, including municipalities related to wildfire management, FN communities would like the same opportunity.
	Objective 3: To <i>recommend</i> ways to increase the involvement of Indigenous peoples in wildfire management.	
<u>Atlantic Policy Congress of First Nations Chiefs Secretariat (APC), NS:</u> a) Bi-annual or annual meetings between FN communities and DLFNS, fire protection to discuss fire management planning and response.	b) Development of a provincial engagement plan to support government staff with their engagement efforts and collaboration.	

Table B: Government Leaders

Government Leaders	Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management	
	<u>Department of Lands and Forestry, NS(DLFNS):</u> a) There is minimal engagement with FN communities, which leaves room for improvement and dialogue. b) Specific to fire incidents, engagement is limited due to the lack of fire emergencies that occur on reserve lands. However, during events, DLFNS engages the Chief and Council in response efforts.	c) DLFNS with support from the Aboriginal Liaison from the FN confederacy delivers basic fire suppression training to communities upon request.
	Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management	
	<u>Department of Lands and Forestry, NS(DLFNS):</u> a) DLFNS, Forest Protection is unaware of who to engage in each community to begin conversations.	b) Lack of fire emergencies reduces the need for linkages and puts fire low on the FN community priority, as FN communities tend to focus on education and employment.
	Objective 3: To <i>recommend</i> ways to increase the involvement of Indigenous peoples in wildfire management.	
	<u>Department of Lands and Forestry, NS(DLFNS):</u> a) DLFNS would like to partner with FN communities to provide firefighting training to encourage national deployment opportunities. b) DLFNS needs to develop cultural competency and FN education protocols to support engagement.	c) Scheduled meetings between FN communities to discuss prevention strategies, FireSmart programs, employment and training opportunities.

Appendix H: New Zealand Table

A: Indigenous Leaders

Indigenous Leaders	Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management.	
	a) Engagement varies between Māori communities, as some prefer the ownership of fire preparedness and mitigation while other require support from FESNZ.	c) Engagement with Māori people by NZ government is layered depending on the topic.
	b) The Ministry of Māori Development, Te Puni Kokiri is available to support Maori communities with the development of civil defence plans through emergency response planning.	d) There is a perception that the government is selective on which Māori communities/Tribes they will engage with depending on the topic.
	Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management.	
	a) Capacity and capability at the Hapu(clan) level in Māori communities is a large barrier limiting support to initiatives.	d) Imposed community council regulations on Māori communities who predominantly live in rural areas on the north island under lower socio-economic conditions that do not have access to waste disposal and recycling locations, thus resort to burning their garbage.
b) Engagement at higher political and Iwi (Tribe) levels can take years to reach the community level.		
c) The Ministry of Māori Development is under resourced for programming initiatives and are a crown agency looking after Māori.		
Objective 3: To <i>recommend</i> ways to increase the involvement of Indigenous peoples in wildfire management.		

<ul style="list-style-type: none"> a) Honouring the power of grassroots engagement and communications, achieves greater results more sustainably long-term. b) The empowerment and upskill of Māori communities to foster selfresilience can alleviate single host gatekeepers of information, resources and capabilities. 	<ul style="list-style-type: none"> c) Maintain relationships at the political level between politicians and tribes to leverage Māori interests. d) Expansion of discretionary spending rules and ceilings for fire mitigation and preparedness to Māori communities to remove a ‘one size fits all’ model.
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Table B: Government Leaders

Government Leaders	Objective 1: Examine how and why Indigenous peoples are <i>engaged</i> in wildland fire management	
	<u>Fire and Emergency Services, NZ:</u> <ul style="list-style-type: none"> a) Engagement is a legislative requirement under the Treaty of Waitangi. b) The relationship and engagement between FESNZ and Māori vary across the country and is dependent on local level involvement. The goal is to move away from a ‘one size fits all’ historic model and focus on reduction and recovery through partnership. c) There are appointed Māori Liaison Officers in some Māori communities to support relationships and response. 	<ul style="list-style-type: none"> d) FESNZ recently developed an outcomes framework to honour the treaty of Waitangi. This framework supports more inclusion and diversity, and the use of Māori culture imbedded into procedures and meetings and gatherings. e) Prior to the 2018 outcomes framework implementation engagement was informal and variable. f) Sixteen Local Advisory Committees will be implemented around NZ to discuss local issues, fire planning and response.
	Objective 2: Identify <i>barriers</i> to engagement of Indigenous peoples in wildland fire management	
	<u>Fire and Emergency Services, NZ:</u> <ul style="list-style-type: none"> a) The historical perception of FES and misconception by Māori people is impacting Maori’s willingness to engage, volunteer or support. b) In some instances, there is an observed lack of self-esteem by Māori and skill competency to support firefighting positions. 	<ul style="list-style-type: none"> c) Old colonial culture that has been engrained in FES specific to Māori people and the lack of diversity is a barrier. d) Lack of wildfire presence removes the threat and therefore the need for immediate engagement.
Objective 3: To <i>recommend</i> ways to increase the involvement of Indigenous peoples in wildfire management.		

<ul style="list-style-type: none"> a) Revise the firefighter recruitment process to be more easily accessible for information. b) Ensure Māori people are educating and providing training to our youth about fire prevention, employment and volunteer opportunities. c) Empowering at the local level is critical to country success. Encouraging local FESNZ staff to be engaging through outreach events and relationship building. 	<ul style="list-style-type: none"> d) Risk and reduction catchment areas needs to be expanded to be more fulsome and inclusive of broader issues impacting behaviour and prevention of emergencies. e) FESNZ is aware of the senior Māori capacity issues and want to alleviate leadership gaps by offering training support.
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Appendix I: Indigenous and Government Leaders Recommendations

Indigenous Leaders’

1. Need and want commitment through agreements for collaboration by government.
2. Completion of After-Action Review with provincial, federal and nongovernment agencies involved in fire management.
3. Education sharing regarding fire management decisions.
4. National committee, policy and procedural framework to support wildfire management.
5. Sharing and action needed on previously recommended changes by other reports completed on fire management.
6. Collaborative and joint wildfire preparation planning.
7. Implement the global United Nations Declaration on the Rights of Indigenous People (UNDRIP) into fire management planning.
8. Involve FN communities in prescribed burning.
9. Build trust through gatherings and exposure to Indigenous culture, collaborative initiatives and

Government Leaders’

- providing opportunities to their people (First Nation) to support in fire management.
 - 10. Government to focus on strengthening their communication and education of wildland fire to community members.
 - 11. Adequate funds needed for First Nation communities to build the necessary human resource capacity to assist with the management of emergency response planning.
 - 12. Bi-annual or annual face to face meeting between to support planning and fire response.
1. Develop a process to bridge the communication issues between First Nation communities, federal and provincial governments.
 2. The adoption of the fundamental principles of the United Nations Declaration for the Rights of Indigenous Peoples(UNDRIP).
 3. A national wildfire committee for Indigenous and government leaders to bring the UNDRIP concept to life and discuss forward thinking strategies.

4. Discussions and engagement by government with First Nation Communities informally with food and no time limit or agenda. Build rapport.
5. Provide fire suppression and decision-making education to help people understand wildfire planning and response.
6. The implementation of a national working group to develop wildfire policy and procedural framework to support government and Indigenous groups.
7. Government suggested First Nation communities to establish their own firefighting resources to respond to fires locally and have province reimburse them.
8. Education by Indigenous peoples on traditional ecological knowledge and their use of fire given to government staff.
9. Multiple agency response requires clarity on roles and responsibilities so as not to distress First Nation communities during emergencies.
 13. Request for fire management of their (First Nation people) territory to be inclusive with their people to achieve common goals related to forest health and future needs.
 14. Continue to engage First Nations regarding prevention and preparedness projects, cultural understanding and the use of Traditional Ecological Knowledge prior to large scale events.
 15. All agencies that support First Nation communities in response should take time to visit communities before emergencies to become acquainted with the people and place.
16. Provide adequate, fair and equal partnership through funding or resources to build emergency response capacity.
17. There needs to be a national wildland fire committee dedicated to discussing issues that are impacting First Nation communities and develop strategies.
18. Develop trained and capable Type 2 crews to be deployed nationally to support fire suppression. Invest in your people. Provide opportunity.
19. Continue to discuss and implement the use of First Nation people from the community during wildfire emergencies to support response efforts outside of firefighting, including logistics, food and equipment management.
20. There needs to be a consistent approach on how Indigenous communities are engaged in wildland fire management.
21. During wildland fire incidents, engagement with First Nation communities should begin at the onset of an incident and throughout the fire event.
22. Multi-partner emergency exercise simulations in preparation for fire
10. Development of robust First Nation community Emergency Response Plans is required.
11. Consideration of First Nation communities becoming host communities to evacuees.
12. Development of trained and capable First Nation people to be deployed nationally instead of employing people from other countries.

13. Government to educate the federal government and First Nation communities on how financial allocation of resources is committed and used for response and preparedness projects.
 14. Additional education for government employees regarding cultural competency obtained through field level face to face engagement.
 15. Government is working to improve the distribution of accurate and real time information to FN communities
 16. Additional emphasis and financial support on the First Nation community-based crews to alleviate the retainment issues contractors are experiencing
 17. Scheduled meetings between First Nation communities to discuss prevention strategies, FireSmart programs, employment and training opportunities
 18. Revise the firefighter recruitment process to be more easily accessible for information.
 19. Ensure Indigenous people are educating and providing training to youth about fire prevention, employment and volunteer opportunities.
 20. Empowering at the local level is critical to country success. Encouraging local government fire season to ensure people understand their role and responsibilities.
 23. The development of a joint emergency response plan (ERP) with fire management agencies to support fire response and planning.
 24. Developing wildfire management knowledge capacity building within First Nation and Māori communities to support discussions when wildfire happens.
 25. Bi-annual or annual meetings between First Nation communities and government to discuss fire management planning and response.
 26. Development of a provincial/territory and country engagement plan to support government staff with their engagement efforts and collaboration.
 27. Honouring the power of grassroots engagement and communications achieves greater results more sustainably long-term.
 28. The empowerment and upskill of First Nation and Māori communities to foster self-resilience which can alleviate single host gatekeepers of information, resources and capabilities.
 29. Maintain relationships at the political level between politicians and Indigenous peoples to leverage interests.
 30. Expansion of discretionary spending rules and ceilings for fire mitigation and preparedness to First Nation and Māori communities to remove a 'one size fits all' model.
- staff to be engaging through outreach events and relationship building.
21. Address senior Indigenous capacity issues to alleviate leadership gaps by offering training support.

Appendix J: Information Letter and Consent Form

INFORMATION LETTER and CONSENT FORM

Study Title: Indigenous Engagement in Wildland Fire Management in Canada, and within New Zealand

Research Investigator

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Background

- You are being asked to be in this study because of your current role and knowledge capacity as it relates to wildland fire management, policy development and implementation, as well as the relationship between Indigenous Communities' and Government.
- This research will be used in support of the development of my thesis research and dissertation.

Purpose

- The intent of my research is to understand how Indigenous people and communities are engaged in wildland fire management in Canada, and within New Zealand.

Study Procedures

- For this study, I anticipate the time commitment by each participant to be 1 hour which will be used for the interview portion of the study.

The following data will be collected during the study:

- Interviews will be up to one hour in length and interviews will be done either on Skype, phone or in-person whichever is the easiest option for the participant
- I will be collecting data related to the existing relationship between government officials and Indigenous leaders specific to fire management
- I will ask for supporting materials identified by participants in interviews to be emailed to caskin@ualberta.ca.

Benefits

- Your participation in this study will not directly or immediately benefit you.
- This study will contribute to further investigation of current national and international frameworks that are developed for the purposes of fire management to support the relationship between Government and Indigenous Communities.

Risk

- There are very few risks associated with being involved and complete confidentiality will be maintained. The interviewee may reflect on the way that Indigenous Traditional Knowledge and practices are included/not included, which could create anxiety.
- Participants may feel vulnerable with respect to the answers they provide, as responses may disclose agency, group or individual weaknesses.

Voluntary Participation

- You are under no obligation to participate in this study. Your participation is completely voluntary and you are not obliged to answer any specific questions.
- Even if you agree to be in the study you can change your mind and withdraw at any time. In the event you decide to opt out, please contact me by email caskin@ulaberta.ca or by phone 705255-0756. You will have two weeks from the time following the interview to advise me of your participation change, as I will begin to synthesize and transcribe the data immediately following the interview. If you choose to withdraw from the project, your data will be deleted and all paper copies destroyed.

Confidentiality & Anonymity

- This researches intended use will be for my thesis/dissertation work, presentations and other educational forums.
- The Data will be kept confidential. My professor and I will be the only ones with access to the data.
- All electronic data will be password protected and when appropriate destroyed in a way that ensures privacy and confidentiality. Data will be kept in a secure place under lock and key and password protected for 15 years following completion of research project.

You agree to be identified for the purposes of this research, thesis development and for presentations specifically relating to this research. An example of how your identity(name or location) could be used would be in my thesis write-up using a direct quote. **Please check all the boxes that apply:**

YES, I agree to have the following used for the purposes of this research:

Please check all that apply

Name

- Location
- Community
- All of the above

NO, I do not want my name, location or community shared for any reason.

Further Information

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(705)255-0756

If you have any further questions regarding this study, please do not hesitate to contact myself at 705-255-0756.

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

Government Leaders

Objective (1): Examine how and why Indigenous peoples within provinces and territories in Canada, and New Zealand are engaged in wildfire management.

1. In management of wildfire, can you tell me who are your key stakeholders and partners? Please explain their involvement individually
2. What guiding directive does your program use for your provincial ‘duty to consult or engage’? or does such a document exist?
 - a. How old is the policy? How often is it used and when?
3. Does your program have a wildland fire management strategy?
 - a. What is outlined as objectives?
 - b. Who was engaged with the development of this strategy?
4. How does your WFM program conduct operations with Indigenous peoples?
 - a. Who is responsible for organizing? How does communication between fire agency and community occur? Who’s invited? How long are the meetings? What topics are discussed? Who sets the agenda?
 - b. What has been your experience participating in these meetings and/or what has been the communication back to you about how the meeting has gone?

Objective (2): Identify barriers to engagement of Indigenous peoples in wildfire management, from the perspectives of Indigenous leaders and fire managers.

1. How would you define a barrier as it relates to Indigenous involvement?
2. What is your perception of the existing relationship between government and Indigenous peoples specific to WFM?
3. How do you think bureaucratic structuring impacts the relationship between Indigenous and Government?
4. How knowledgeable are WFM or your staff on Indigenous history within your province or territory?

Objective (3): To recommend ways to increase the involvement of Indigenous peoples in wildfire management.

1. What can be done in general to overcome barriers?
2. What steps can you do to remove barriers?
3. What changes are required to strengthen the relationship between Indigenous peoples and government’?
4. What are the barriers internally to stakeholder or partner involvement past the extent it currently is?

Indigenous & Maori Leaders

Objective (1): Examine how and why Indigenous peoples within provinces and territories in Canada, and New Zealand are engaged in wildfire management.

1. To your knowledge, can you explain how Indigenous peoples are engaged in wildland fire management in your province, territory or state?
 - a. How are these engagement sessions/meetings received by Indigenous peoples?
2. How does your government wildland fire management program conduct operations with Indigenous peoples?
 - a. Do the provincial, territory or state fire management agency hold annual or biannual meetings with your community(ies)? Who is invited? How long are they? what topics are discussed? Who sets the agenda?
 - b. When do fire managers engage Indigenous peoples and communities as it relates to wildland fire response? i.e days in advance or hours?
 - c. Do your community(ies) have a process in place for when fire is threatening a community? If so, can you provide me a copy of the process

Objective (2): Identify barriers to engagement of Indigenous peoples in wildfire management, from the perspectives of Indigenous leaders and fire managers.

1. Can you explain to me the historical relationship between government fire management staff and Indigenous peoples in your province, territory or state?
2. How would you define a barrier as it relates to Indigenous engagement in wildfire management?
3. Can you tell me what barriers exist between government fire management agencies and Indigenous communities?
4. What is your perception of the existing relationship between government and Indigenous peoples specific to wildland fire management?
5. How knowledgeable do you feel government fire management agencies are on the historical relationship between government and Indigenous peoples specific to your province, territory or state?
 - a. Would you identify this knowledge or lack thereof as a barrier?

Objective (3): To recommend ways to increase the involvement of Indigenous peoples in wildfire management.

1. What can be done in general to overcome barriers?
2. What steps can you or your community do to assist in removing barriers?
3. What changes are required to strengthen the relationship between Indigenous people and government?
4. What aspects of wildland fire management would Indigenous peoples and communities like to participate in and be engaged with?