

LEARNING FROM WILDFIRE:  
UNDERSTANDING THE SOCIAL DIMENSIONS OF COMMUNITY RESPONSE

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Canada  
By Tina Elliott

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## **ABSTRACT**

Wildfires are becoming more frequent and intense in Canada's boreal forest region. Research shows that the social dimensions of communities' experiences of wildfires and other disasters are influenced by identity factors such as gender, culture, age, and others. However, few studies have examined how these identity factors intersect to create layered, context-specific experiences of disaster. Rather, most research on the wildfire threat in Canada's boreal forest focuses on physical and technical infrastructure, largely ignoring the social dimensions that affect communities' capacity to prepare for and respond to disaster. Additionally, within the four-stage disaster management cycle (mitigation, preparedness, response, recovery), there is a missed opportunity for post-disaster learning (PDL): the direct, experiential learning from a wildfire event that can be translated into enhanced, socially sensitive, wildfire disaster management plans. A focus on identity factors, especially how they intersect to shape experiences of wildfire, and social strategies tailored to local context, can inform the development of a community-based framework for PDL. Focusing on two rural municipalities in Northern Saskatchewan who experienced wildfires in 2015, this research has identified key social factors and social strategies that shaped communities' experiences of a wildfire disaster. Data from interviews and workshops with local residents, together with results from analysis of community-based wildfire and disaster management guides, provided the basis for the co-development of a socially-focused framework for community-based PDL. This framework can be used by rural Canadian communities to learn from their lived experiences with wildfire and other disasters to enhance the ability both to mitigate social impacts of wildfires and to guide future community wildfire management plans. This research also contributes to scholarly methodological knowledge on the use of feminist standpoint theory and intersectionality as means to better understand and address diverse disaster experiences.

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## **ABBREVIATIONS**

CBPR	Community-based participatory research
FST	Feminist standpoint theory
NGO	Non-governmental organization
PDL	Post-disaster learning
SES	Socio-economic status
SIF	Social identity factor

# CHAPTER ONE: INTRODUCING THE RESEARCH

## 1.1 Introduction

It is widely accepted that climate change is occurring (Masson-Delmotte et al., 2021). In this changing climate, wildfire is increasingly threatening Canada's boreal forest ecosystems and people living within the wildland urban interface (Gaur et al., 2021). While wildfires are a natural, normal, and necessary component of healthy ecosystem functioning (Natural Resources Canada, 2017), wildfires in Canada are starting earlier and lasting longer (Wotton et al., 2017) and are expected to occur more frequently and intensely (Bush et al., 2019; Wang et al., 2017). The impacts of wildfires in the wildland urban interface are numerous and costly (Porter et al., 2021), and include evacuations; property damage; diversion of resources to fire-suppression; and threats to personal safety, health, and well-being. Along with ecological and economic consequences, the social impacts of wildfire are extensive and complex, requiring ongoing investigation and adaptive strategies (Dodd et al., 2018; Enarson, 2001). Such adaptation strategies have become increasingly prioritized as we collectively shift from the possibility of mitigating future climate change to experiencing life in a climate undergoing change (Wise et al., 2014).

Wildfires and other hazards are labelled disasters when they become "a social phenomenon that results when a hazard intersects with a vulnerable community in a way that exceeds or overwhelms the community's ability to cope and may cause serious harm to the safety, health, welfare, property or environment of people" (Public Safety Canada, 2018, p.1). Disasters, distinct from emergencies, overwhelm local capacity to respond (United Nations O.O.S.A., 2017). Relatedly, climate change impacts can include disasters, but refer more broadly to all consequences of climate change for people and the environment (Cruz et al., 2014). For example, Bunce et al. (2016) investigated the effects of a changing climate on the berry-picking season and availability of seal skins for Inuit women's cultural practices in Iqaluit. This climate change impact is not a disaster; however, it is an example of how climate change discourse relates to that of wildfire, disaster, and (most broadly) sustainability discourses: these discourses are often intertwined and nested as researchers simultaneously explore concepts of risk, resilience, vulnerability, and adaptive capacity.

This research focuses on the social dimensions of wildfire and other disasters. One way to understand the term *social dimensions* is that it encompasses institutions (such as governance bodies, large-scale belief or economic systems), processes (such as community-building, learning, and decision-making processes), and individual dimensions (social identity factors, material circumstances, and personal lifestyle, political or aspirational choices) (Reed et al., 2020; Sidloski et al., 2021). Using this frame, the social dimensions focused on in this research are process and individual dimensions. In other words, the focus is primarily at the micro level (individual, body, personal experience) and meso level (community, organization or household) (Fletcher, 2018). This research also focuses on resilience to wildfire, particularly at the community level.

‘Community’ itself is an ambiguous term. A community is not always defined by geographic boundaries; community can be built around shared identities, attachments, values, hobbies, etc. (Hergenrather et al., 2010). For the purposes of this research, community is defined largely as those living together in a shared geographic area as it is proximity to the threat of wildfire that is of interest. As such, this research takes some elements of social-ecological system’s approach to ‘community resilience’ such as an emphasis on a community of place and connection to the natural environment (Berkes & Ross, 2013). However, this research also applies definitions from mental health, psychology and community development which focus on the process of building on strengths at the individual, household and community level as identified by the community, prompting action and self-organization which, in turn, encourages adaptation (Berkes & Ross, 2013).

Community resilience has been widely researched, yet definitions of community resilience (and ‘resilience’ generally) are varied over time, by discipline, and in relation to other key concepts such as adaptive capacity and vulnerability (Berkes & Ross, 2013; Cutter et al., 2008). While this research explores the concept of resilience, much research in this area focuses on vulnerabilities. Vulnerability approaches have been critiqued for universalizing and being deficit-oriented (Arora-Jonsson, 2011; Gibb, 2018; T. O’Sullivan et al., 2014). Alternatively, it has been argued that vulnerability approaches are not necessarily deficit-oriented when paired with a focus on adaptive capacity, nor it is universalizing when appropriately contextualized (Bunce et al., 2016).

The body of literature on gender-based vulnerability in disasters has been growing slowly; however, there is a noted lack of gender-based resilience research (Bunce & Ford, 2015). To conceive of resilience as diametric to vulnerability obscures the complexities of both; it also obstructs researchers (and others) from seeing vulnerability as a catalyst for knowledge, learning and change (Rolin, 2010).

A key insight from feminist and other critical scholars is that climate-related disasters affect people differentially based on various identity factors such as gender, culture, class, and age (Adger et al., 2013; Alston, 2014; Enarson, 2001). These characteristics do not operate discretely, but rather *intersect*, creating layered, context-specific experiences for people. For example, in the 2015 wildfire evacuations in Northern Saskatchewan (SK), age and culture intersected to create specific kinds of hardships for Indigenous people (Scharbach & Waldram, 2016). These hardships occurred when Dene and Métis people of Wollaston Lake, SK were evacuated in ways that did not consider cultural norms related to family structure. Individuals were identified for evacuation based on age and therefore separated from the family unit, contributing to a sense of culture shock when staying in larger urban centres (Scharbach & Waldram, 2016). These findings suggest that being vulnerable to wildfire threat can be compounded and complicated by the intersection of multiple identity factors that may not be shared homogenously among community members. Likewise, resilience and adaptive capacity also may not be uniform and so vulnerability, resilience and adaptive capacity are all worthy of further investigation. However, understanding of intersecting identity factors within the context of wildfire disasters is limited (Walker et al., 2019) in large part because most research on the wildfire threat in Canada's boreal region focuses on physical and technical solutions (Reed et al., 2014).

The Canadian boreal region includes many Indigenous communities and, in Canada, climate hazards disproportionally affect Indigenous communities (Council of Canadian Academies, 2022). In Canada and beyond, there have been shifts to recognize the importance of Indigenous perspectives and knowledge on wildfire, disaster, and climate change in academia (McGregor, 2021; Wong et al., 2020), policy (Environment and Climate Change Canada, 2021; Government of Canada, 2016), and practice (Aboriginal Disaster Resilience Planning, 2015a; Partners in

Protection, 2020). However, the Council of Canadian Academies (2022) released a report stating that to date, the value of Indigenous Knowledge has been overlooked and under-utilized which has served to impede disaster resilience in Canada. While the research described in this thesis was not directly guided by Indigenous methodology or theory as they relate to wildfire and other disasters, it is clear that this is an understudied and underappreciated area of study. Instead, this research primarily used feminist theory and methodology to guide the research design, recognizing the limitations of this approach.

Critical scholarship, including feminist scholarship, prioritizes particular methods and outcomes in research. Some of the methodological priorities include attention to power, praxis, and position, including that of the researcher (addressed in section 3.1.4 on researcher positionality). Some priority outcomes may include the development of change-making strategies, empowerment, and capacity building. As such, this research focuses not only on the social dimensions of wildfire, but on a specific point in the disaster management cycle – a point that may serve to address some of these outcomes. In Canada, disasters are managed in a four-phase cycle: mitigation, preparedness, response, and recovery (Public Safety Canada, 2015). This research focused on the last stage (recovery), specifically on the opportunity to learn from experience, post-disaster.<sup>1</sup> Many researchers have called for greater attention to post-disaster learning (PDL) (Christianson, 2015; Dodd et al., 2018; Enarson, 2001); we still do not know how intersecting identity factors affect community-based PDL. To address this gap, this research used intersectional feminist standpoint theory (FST) to highlight diverse lived experiences of wildfire. Intersectional FST was chosen for several reasons including its ability to engage with structural

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<sup>1</sup> This thesis uses ‘post-disaster’ and ‘post-wildfire’ dependent on the source material when referring to literature. Referring to this research, I primarily use ‘post-disaster’ although the study communities experienced only one type of disaster because ‘post-wildfire’ implies ‘post-wildfire *disaster*’. Further, constructionist and pragmatist approaches allow for generalization of knowledge in such a way that results can be applied to other post-disaster communities to the degree that their experiences align. Pragmatic research focuses on extrapolations: “Modest, practical speculations on the likely applicability of findings to future times and other situations under similar, but not identical conditions” (Patton, 2015, p. 720). Constructionism approaches generalizability as what ordinary people would learn from specific cases or examples (Patton, 2015).

causes of inequality and recognition of multiple forms of knowledge; this is discussed further in Chapter Three. Data from a document analysis of Canadian, community-based wildfire management tools and data from interviews with residents in two communities in Northern SK, Canada with wildfire experience were combined to co-develop an intersectional social framework for PDL. Participants from these communities were engaged in a workshop that refined and organized the data into a framework that may be effective in preparing for future wildfires or other disasters. Both the framework and the exercise also facilitated PDL with the aim to support the empowerment of rural communities to prepare for and respond to future wildfire events.

## **1.2 Research Purpose and Objectives**

The purpose of this research is to support the empowerment of rural communities to engage in post-disaster learning that will inform future preparations and responses to wildfire. Focusing on two rural communities in Northern SK following wildfires in 2015, my research objectives are to:

- 1) identify the key social identity factors that shaped the study communities' experiences of wildfire disasters;
- 2) document the effects of different social strategies used by two small, rural SK communities during the 2015 wildfires; and
- 3) stimulate a process for post-disaster learning by co-developing a community-based framework focused on social dimensions of wildfire to guide future community wildfire management plans.

## **1.3 Organization of the Thesis**

This thesis is organized into seven chapters. Chapter Two provides background to contextualize this research, including a brief literature review of sustainability and disaster management, the social dimensions of wildfire and other disasters, and community-based learning. Chapter Three outlines why and how I applied feminist standpoint theory as the methodology for this research



and describes data collection and analysis processes for the three methods: document analysis, semi-structured interviews, and a virtual workshop. Chapter three also includes a positionality statement to situate the researcher within the research itself. Chapter Four provides the results related to objectives one and two, including representations of social identity factors (SIFs) in wildfire management guides, and the strategies and SIFs in participant experiences of wildfire. Results related to the third objective are presented in Chapter Five; these results pertain to the mechanisms for post-disaster learning (PDL) found in the wildfire management guides, the key themes related to PDL, and the outcomes of the virtual workshop. A discussion of the findings can be found in Chapter Six which includes the presentation of the final framework for PDL, a closer examination of its components, and some discussion of broader, conceptual issues such as social sustainability in disaster discourse. Chapter Seven concludes this thesis with a summary of contributions and limitations, several recommendations, and final thoughts.

## CHAPTER TWO: LITERATURE REVIEW

This literature review provides context for the research by first weaving together literature on social sustainability and feminist approaches to climate change and disaster research. I review the literature on how social identity factors—gender in particular—can impact experiences of disaster, presenting intersectionality as a means to better understand the diverse experiences of people. Then, I explore dimensions of community-based, post-disaster learning (PDL), including adaptation, risk perceptions, and the role of a ‘post-disaster learning window’. Lastly, I present an overview of social and transformative learning as a foundation for the learning framework presented at the end of this thesis.

### 2.1 Social Sustainability and Disaster Management

In 1987, the Brundtland Commission stated that “sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987, p. 41). Since then, sustainability has been conceptualized as a Venn diagram depicting three overlapping circles representing social, economic, and environmental dimensions; where all overlap, true sustainability can be achieved (Vos, 2007). More recently, culture has been added as a fourth dimension of sustainability (Figure 2.1) (Throsby & Petetskaya, 2016) and discussion persists as to how to do so (Soini & Dessein, 2016). And yet, 35 years after the Brundtland commission and



Figure 2.1 Four dimensions of sustainability

after decades of discussion, the concept of sustainability has not yet adequately mobilized action to the degree necessary to mitigate climate change (Intergovernmental Panel on Climate Change, 2022b; Sconfienza, 2019). Some scholars' critiques of sustainability discourse stem from the apparent impossibility of achieving all goals simultaneously (Sconfienza, 2019). For example, scholars (Nilsson et al., 2016; Pradhan et al., 2017) have addressed the challenges and trade-offs of addressing the United Nations Sustainable Development Goals (United Nations, n.d.). Blühdorn (2016) identified numerous critiques of the sustainability agenda such as its commitment to development itself, its adherence to anthropocentrism, its focus on technological and economic solutions, and its emphasis on identifying solutions via objective scientific investigation. Despite these shortcomings in sustainability discourse and practice, numerous international frameworks and agreements serve as key tools for addressing climate change.

Within the arena of disaster management, the Sendai Framework for Disaster Risk Reduction (*Sendai Framework for Disaster Risk Reduction 2015-2030*, 2015) aims to address all aspects of sustainability. The Sendai framework is an international framework signed by Canada and other United Nations members states which focuses on local actions to address disaster risk (Government of Canada, 2018). It promotes an 'all-of-society approach,' striving to include and elevate traditionally marginalized voices in disaster planning. For example, it explicitly names target groups such as women, children and youth, persons with disabilities, older persons, Indigenous Peoples, and migrants in order to involve and prioritize such groups with specific knowledge, skills, and capacities (*Sendai Framework for Disaster Risk Reduction 2015-2030*, 2015). Despite criticisms related to its efficacy (e.g., Goniewicz & Burkle, 2019; Stough & Kang, 2015), Canada, as a member UN state, has adopted the Sendai Framework and additionally has laid out its own strategy via Canada's National Disaster Mitigation Strategy (Public Safety Canada, 2018). The goal of this federal strategy is "to protect lives and maintain resilient, sustainable communities by fostering disaster risk reduction as a way of life"; one principle is sustainability, to "balance long term economic, social and environmental considerations" (Public Safety Canada, 2018). By adopting these frameworks, along with commitments to the United Nations Sustainable Development Goals, nation states such as Canada have made commitments to adopting environmental, economic, and social dimensions of sustainability.

Notwithstanding these commitments, some have argued that ‘social sustainability’ is a still under-developed concept (Åhman, 2013; De Fine Licht & Folland, 2019; Eizenberg & Jabareen, 2017; Vallance et al., 2011). However, some have proposed that social sustainability must include key constitutive elements including food security, water, income, education, safety, energy, income, voice, social equity and gender equality, among others (Eizenberg & Jabareen, 2017; Raworth, 2017).

## **2.2 Examining Concepts of Resilience and Vulnerability**

Within the broader discussion of sustainability are the concepts of resilience, risk, vulnerability, and adaptive capacity. Definitions and conceptual linkages for resilience, risk, vulnerability, and adaptive capacity are highly variable (Cutter et al., 2008; Gibb, 2018; O’Sullivan et al., 2014). Notably, the concept of resilience has changed significantly over time, and there is still no consensus about its characteristics (Cutter et al., 2014). As this research focused largely on resilience, the following section traces a path of the various meanings of resilience over time, framed by Atallah et al.’s (2019) work outlining three ‘waves’ of resilience research.

According to Atallah et al. (2019), the first wave of resilience research defined resilience as the ability to ‘bounce back’ to an original state. This thinking stemmed from the physical sciences, where resilience was defined as the strength to absorb or resist an impact without lasting effect. However, this view did not do justice to dynamic social realities as it did not account for social adaptation and its focus tended to be large scale (Atallah et al., 2019). Meanwhile, vulnerability was seen as “risks with positive associations to systemic failure, reduction in functioning, or medical illness” (Atallah et al., 2019, p. 4-5). In simple terms, resilience was borne from strength, and vulnerability from weakness. Dichotomous definitions such as these can universalize and essentialize experiences of entire groups; for example, constructing women as vulnerable, passive victims erases agency, resilience, and adaptive capacities. Arora-Jonsson (2011) argues that at the global scale, those in the Global South (especially women) are often constructed as vulnerable victims while the Global North is seen as virtuous and active. Rigid application of ‘vulnerability’ as a label can obscure the ways that people are simultaneously vulnerable *and* resilient (Arora-Jonsson, 2011; Bunce et al., 2016; Meinzen-Dick et al., 2014).

The second wave saw resilience as ‘bouncing forward’: “Second wave thinking takes more of a holistic approach and reframes resilience as a relational, intergenerational, and ecosystemic process stemming from changing resources and rights” (Atallah et al., 2019, p. 6). Additionally, second wave thinking identified that factors that may enhance resilience in one context, may reduce it in another. In other words, emphasis on individual strength and ability was replaced by emphasis on context. ‘Context’ includes a variety of factors including attachment to place, cultural factors, community cohesion, and others (Adger et al., 2013; Berkes & Ross, 2013; McCaffrey, 2015). This shift to local, relational, and contextualized ways of thinking of resilience resulted in smaller scale research endeavors and a view of resilience less as a state and more as a process (e.g., Townshend et al., 2015)(Townshend et al., 2015). Notably, Cutter (2008) identified part of the process of resilience as the “post-event, adaptive processes that facilitate the ability of the social system to re-organize, change and learn in response to a threat” (p. 599). This view of resilience is therefore less about inherent strength and more focused on a process that accounts for small-scale contextual factors, particularly those which occur post-disaster.

At the same, the notion of vulnerability also changed. Vulnerability was no longer simply a weakness of the individual but could coincide with – and even enhance – resilience and adaptive capacity. The literature regularly points to existing social inequalities and social marginalization as contributing factors to vulnerability (e.g., Bunce et al., 2016; Cutter et al., 2008). For example, Gibb (2018) argues:

The result of inequalities in a given society, such as class, gender, race, ethnicity, caste, religion, age, health, disability, and other social cleavages, marginality influences people's control over basic needs and rights, which in turn, determines who is vulnerable and whether a hazard unfolds into a disaster. (Gibb, 2018, p. 329)

In fact, vulnerability approaches have been criticized for being deficit-oriented and, as a result, some researchers have sought to reframe vulnerability altogether. While some maintain the value of this approach (Bunce et al., 2016), others have adopted the term ‘high risk’ (O’Sullivan et al., 2014) to shift the focus from the individual or group to ‘functional limitations,’ thereby problematizing the risk in context.

Given the complications in defining and relating the concepts of resilience, adaptive capacity, and vulnerability, it is not surprising that there are also numerous assessment mechanisms. In 2016, Cutter published results of the examination of 27 disaster resilience assessment tools where the scale ranged from individual communities to the national level. Sharifi (2016) examined 36 community-based resilience tools, though ‘risk’ was more broadly defined to include non-disaster risks. Both authors identified a vast number of tools, as well as a wide variety of purposes, scales, approaches, and foci. Both found significant variation in how to define and measure resilience and that social aspects of resilience were not ubiquitous. Tools that focused on disasters, as well as the social aspects with some elements of learning from experiential knowledge, were even more scarce. Within Sharifi’s examination, only 28% addressed experience with disasters, 33% addressed gender norms and equality, 25% addressed empowerment of vulnerable groups, and less than 25% addressed collective knowledge and experience and various cultural and ethnic diversity subcategories. Correspondingly, Cutter stated “There is no systematic or consistent representation of community resilience, nor the concepts that comprise it” (Cutter, 2016). A key recommendation from both Cutter’s and Sharifi’s analyses is that such resilience assessment tools should be co-developed in collaboration with communities.

The third and final wave of resilience thinking addresses many of the pieces that Cutter (2016) and Sharifi (2016) found amiss. It calls for deeper investigation of the social context that shapes resilience, asking researchers to focus on “how resilience processes are shaped by human values, unequal social processes, and pathways of power” (Atallah et al., 2019, p. 9). Atallah et al. (2019, p. 3) call this a “critical community resilience praxis,” which involves transdisciplinarity and focuses on social justice, systems of social power related to various identity factors, and marginalized peoples – especially experiential and Indigenous Knowledges. Through such praxis, the focus shifts to highlight and understand the development of resilience of marginalized people based on their experiences, which, in turn, can catalyse learning and transformation. In this sense, vulnerability is not separate from resilience, instead, vulnerability can act as a catalyst to produce resilience. This configuration of resilience and vulnerability is congruent with feminist standpoint theory (FST) (discussed further in sections 4.3.1 and 5.2), which contends that marginalized perspectives have the widest – and truest – view of reality. This view of

resilience (as emerging from vulnerable standpoints) is increasingly apparent in the literature (Atallah et al., 2018; Diangelo et al., 2011; Pardee, 2009; Rajbhandari, 2016; Vinyeta et al., 2015) yet far from commonplace.

Recently, the IPCC defined resilience as “the capacity of social, economic and ecosystems to cope with a [hazard], responding or reorganising in ways that maintain their essential function, identity and structure... while also maintaining the capacity for adaptation, learning and transformation” (Intergovernmental Panel on Climate Change, 2022a, p. 7). The emphasis on learning and transformation in this definition reflects the literature drawn on above, shifting away from conceptualizing resilience as protection (wave one), to resilience as adaptation (wave two), and finally, to resilience as transformation (wave three).

## **2.3 The Social Dimensions of Wildfire and Other Disaster Experiences**

### **2.3.1 Social Identity Factors and Disaster Experiences**

Government bodies indicate that social identity factors (SIFs) include, at minimum, sex, gender, geography, culture, income, sexual orientation, education, race, ethnicity, religion, age, and disability (Status of Women Canada, 2017). In different contexts (for example, within various social structures), these identity factors can work in combination to result in various forms and degrees of privilege, power, and marginalization (Crenshaw, 1989). Numerous identity factors may be simultaneously in play, and any given part of a person’s identity may be more or less prominent in a given context. Further, these identity factors are not overlapping, but intersect to create distinct experiences that shape our worldview and daily lives (Crenshaw, 1989). In doing so, they shape how people experience disaster as well as how they learn, adapt, and build resilience.

Emphasis on identity factors stems in large part from FST. FST has been used in other disaster research (Enarson, 1999, 2001; Rajbhandari, 2016) because of three useful conceptual tools: situated knowledge, subjugated knowledge, and strong objectivity. FST contends that all knowledge is *situated* knowledge created from specific social positions or standpoints. As no one can escape their own situatedness, all knowledge is partial and any claim of total objectivity –

including from the researcher – is a kind of “god trick” (Haraway, 1988, p. 581). Further, some knowledge is *subjugated* knowledge: that which is “suppressed, repressed and oppressed by white patriarchal knowledge production” (Moreton-Robinson, 2014, p. 333). Finally, strong objectivity is the idea that marginalized groups have more robust knowledge-creation capacity than the dominant group because they can see not only from the marginalized position but from the dominant perspective as well (Harding, 2016). Taken together, FST claims that knowledge is situated, partial, and differentially valued and useful. This view of knowledge creation applies to the researcher as well: Acknowledging and addressing the bias of the research creates a stronger objectivity than if the researcher claims a neutral position. Reflecting on one’s position and acknowledging sources of bias is known as ‘reflexivity.’ Doucet and Mauthner (2006) point out that being reflexive means both being clear about social position and about how this position affects actions and outcomes, including how we think and what we do. These methodological tools can be useful in disaster research because they prioritize the role of marginalized knowledge in new knowledge creation and can spur action and change. These conceptual tools are useful in disaster research because disasters disproportionately affect marginalized peoples and because disaster resilience inherently requires ongoing adaptive learning at various levels (Haque et al., 2021).

Social identity factors (SIFs) within a disaster context can take many forms. For example, Atallah et al. (2018) focused on the Mapuche peoples (the largest Indigenous group in Chile) to examine notions of disaster resilience from an Indigenous perspective. Haynes & Tanner (2015) examined how to empower youth in decision making in disaster risk-reduction strategies. In some cases, a SIF may be highly impactful because of a pre-existing discriminatory policy, as was the experience of non-heterosexual couples in the aftermath of Hurricane Katrina. Heteronormative assumptions that a couple would comprise individuals of the opposite sex and that families would consist of a heterosexual couple and biological children set the stage for same-sex couples to be separated, unable to access support that heterosexual couples were offered (Dominey-Howes et al., 2014). Enarson has written extensively on gendered experiences in disasters, specifically regarding disasters and violence against women (1999), floods and women’s labour (2001), and disasters and masculinities (Enarson & Pease, 2016). These works have examined how gendered roles shape people’s experiences of disaster in particular ways, for



example, how experiences of domestic violence are compounded by disasters and how organizations that provide services to such women can better support them (Enarson, 1999). Enarson has also explored experiences of men in disasters and various masculinities expressed in disaster situations, problematizing hegemonic masculinities (Enarson & Pease, 2016).

Importantly, researchers must take care to avoid assuming homogeneity within an ‘identity group’ and having preconceived notions about who is vulnerable and resilient and the relative impact of various SIFs. Instead, researchers should take the time to carefully examine the specific SIFs that affect individual experiences and in what way. For example, cultural norms can have a significant effect on disaster management and experiences (Adger et al., 2013), but the nuances of how these norms affect experiences can vary. For instance, in the Peavine Métis Settlement in Northern Alberta, Canada, attention to cultural norms showed they had a positive influence on the community’s willingness and ability to engage in wildfire mitigation measures (Christianson et al., 2014). In this community, the cultural norm of strong community support of Elders extended into wildfire mitigation efforts, resulting in community-based work crews conducting mitigation work several times per year (Christianson et al., 2014). In contrast, when members of a Dene community were evacuated due to wildfire threat, cultural considerations – or rather, lack thereof – were a factor that led to negative outcomes (Scharbach & Waldram, 2016). In this case, wildfire evacuation protocols identified vulnerable *individuals* for evacuation, separating members of extended families. Because Dene cultural norms emphasize extended family relationships, the separation of extended family members during evacuations caused distress. Although Dene cultural factors did not *cause* the negative outcomes, cultural factors were not adequately considered, resulting in ill-suited protocols and, subsequently, avoidable distress for the evacuees (Scharbach & Waldram, 2016).

### 2.3.2 Gender in Disaster and Climate Change Discourse

Gender analysis in disaster and climate change research is increasingly common (Enarson, 2001; Fletcher, 2017; Reed et al., 2014) but by no means prolific. For example, a case study of the impacts of climate change on Inuit women in Iqaluit identified differential impacts by gender, leading to distinct challenges (Bunce et al., 2016). For example, Inuit women in this study

discussed berry picking, a traditionally female-dominated activity, noting significant changes in the berry picking season and overall quality of berries. Easily done without travel or specific equipment and while minding children, berry picking serves a mental and social health function, allowing women time to relax and visit with friends. When the berry season changed, the women found they needed to shift timelines or locations to find quality berries. The loss of the mental health and social benefits likewise needed to be adapted, and needs met in other ways (Bunce et al., 2016).

Enarson's (2001) research in the aftermath of the 1997 Red River Valley flood detailed the wide variety of women's contributions during this disaster event. Enarson (2001) not only found that women worked in a variety of contexts (in the household, in local organizations, and throughout the community), but also that much of this work was behind the scenes, unrecognized, and highly variable in visibility and compensation. Her analysis both helped identify the differential experiences of women and men and situated these experiences within structures that privilege the contributions of men and marginalize the contributions of women.

In 2001, Enarson wrote of her study, "These findings need comparative analysis and replication," adding that "broader samples in more diverse regions are needed to assess how women's efforts vary across and within societies at different stages of development, and in different social castes, classes, racial/ethnic groups, and generations" (2001, p.15). Fourteen years later, Bunce and Ford (2015) found that indeed the literature on gender and adaptive capacity, resilience, and vulnerability had increased. However, despite the increase, they found only 123 studies between 2006 and 2014, representing a small fraction of the total number of studies on adaptive capacity, resilience, and vulnerability. Also problematic is that the clear majority of the 123 studies focused on women or both women and men, but little research addressed men and none at all non-binary gender identities. Geographically, sub-Saharan Africa was overrepresented in the tally, with few studies in the Global North. Finally, Bunce and Ford (2015) found that research on gender and adaptation was common, whereas vulnerability-focused research was less so, and resilience-focused research was minimal. Although this assessment indicates that gender in disaster and climate change research is being increasingly studied, Enarson's 20-year-old call has not yet been adequately answered.

### 2.3.3 Intersectionality in Wildfire, Disaster, and Climate Change Discourse

The term ‘intersectionality’ was introduced by Kimberlé Crenshaw (1989) to account for the ‘double jeopardy’ experienced by black women. It emerged from anti-racist critiques of ‘second wave feminism’ in the 1970s and 1980s, the dominant feminist discourse at that time addressing the experiences and perspectives of white, middle-class women (Crenshaw, 1989). In contrast, ‘third wave feminism’ embraced intersectionality, its aim to “expose the dynamic, multiple, interacting systems of privilege and oppression (e.g., race, gender, class, and sexuality) that impact individuals’ lives” (Watson et al., 2018, p. 296).

Without roots in sustainability, climate change, or disaster research, intersectionality is still not frequently applied in these fields (Djouidi et al., 2016; Walker et al., 2019). However, researchers have started to take up the tools offered by intersectionality to explore a broad range of topics. In climate change research, these include Ravera et al.'s (2016) examination of agricultural adaptation responses by farmers in India, which provided a better understanding of the intersection of gender and other SIFs, such as caste, wealth, geography, and age. Another study examined Bangladeshi initiatives to build social capital so as to enhance community-based adaptations (Masud-All-Kamal et al., 2021). The researchers found that a less rigid understanding of gender and more intersectional awareness would have improved the efficacy of the initiatives, especially for impoverished women in the area (Masud-All-Kamal et al., 2021). Eriksen et al. (2020) used intersectionality to rethink the relationship between affluence and vulnerability in order to improve approaches to climate change adaptive capacity.

In disaster research, intersectionality has been used to better understand the experiences of low-income women in the Hurricane Katrina disaster (Pardee, 2009); the impacts of the 2015 earthquake on women in Nepal (Arora, 2020; Rajbhandari, 2016); and how gender and mental illness created diverse experiences among homeless individuals in the 2013 Colorado floods (Vickery, 2018). Recently, intersectional wildfire-focused studies have also been published, including one that examined the experiences of undocumented Latino/a and Indigenous immigrants during the Thomas Fire in California (Méndez et al., 2020). Locally, Walker et al. (2021) found intersections across gender, age, ethnicity, location, and race, which produced

differing impacts for residents in and around La Ronge, Saskatchewan during the same wildfire season experienced by the residents in this research.

The examples above demonstrate that intersectionality is gaining momentum in these areas of research, can be applied to a wide variety of research questions, and offers several strengths and benefits. Among the benefits is the challenge intersectionality poses to universalizing and essentializing. Universalizing refers to the extension of a perspective or experience of part of a group to the whole group. Intersectionality can facilitate a more nuanced understanding of difference *within* a group, such as in the case of Vickery's (2018) examination of homeless individuals in the 2013 Colorado floods. Universalizing is problematic as it minimizes the diversity within a group. The alternative argument is that there can be no generalization whatsoever, as intersectionality focuses on division and difference, isolating increasingly smaller groups of study. However, much theoretical and practical work has been done to build solidarity across difference, for example, Mohanty (2003). Further, the alternative – ignoring diverse social positions – will only leave significant gaps in the social dimensions of disaster management, exacerbating social problems. For example, the findings of Masud-All-Kamal et al.'s (2021) study identified that an opportunity to build social capital was missed due to rigid gender categories and neglect of other social factors.

Intersectionality also challenges essentialism in gender and other SIFs. Essentializing means ascribing characteristics, experiences, or perspectives to a group as though it is natural. For example, ecofeminism has been criticized for promoting the idea of woman as a naturally conscientious caretaker of the earth (Meinzen-Dick et al., 2014). While framing women's environmentalism this way can be useful in some contexts, it can also perpetuate problematic stereotypes, unnecessarily shutting people into narrowly defined roles in the name of environmentalism while also disproportionately allocating responsibility for environmental stewardship to women (Arora-Jonsson, 2011). For example, Enarson's (2001) research on the work women did during the 1997 Red River Valley flood in the U.S. illuminated the wide variety of roles they filled. Enarson argues that “when we cannot see or appreciate the significance of ‘what women do’ in disasters, we cannot capitalize on the skills, resources, and local knowledge of women and women's community-based organizations” (2001, p. 16). Her work highlighted

how women's care work is often naturalized and therefore taken for granted while concurrently creating a barrier for women to fill or be recognized in leadership roles.

Intersectionality comes with some challenges as well, one of which can be identifying the appropriate identity factors for analysis. As discussed, not all identity factors have equal impact across contexts, nor is it desirable or practical to examine all identity factors simultaneously. A critique of intersectionality could be that it seeks to hone knowledge creation of increasingly smaller groups; for example, if 'women' is too broad a category in a given context, should we instead focus further on Indigenous women? Or elderly Indigenous women? But this is a slippery slope fallacy. Kaijer and Kronsell (2014) point out that feminist scholars have called for – and produced – work that creates “alliances based not on fixed identities but on common interests and solidarity, and with recognition of different positions” (p. 423). Intersectionality does not require researchers to *always* focus on *all* identity factors, nor to home in on increasingly small subgroups so as to address every possible intersection of identities. Instead, researchers may set out to investigate certain identity factors or allow context-appropriate factors to be identified and explored as they emerge from the data (Kaijser & Kronsell, 2014).

Another challenge with intersectionality is the level of analysis. Given that much intersectional research focuses on the individual level of analysis so as to be adequately contextualized and locally-specific (Adger et al., 2013; Meinzen-Dick et al., 2014), “a major challenge for future research will be to ‘scale up’ the insights of intersectionality to examine macro-level phenomena and systems” (Fletcher, 2018, p. 42). Walker et al. (2019, p. 6), through their rapid review of intersectional climate hazards research of the Global North, note that how some studies counter this is by “drawing attention to the relationships between individual lives at the micro level and the systems of power in macro-scale social structures, ideologies, and norms.”

Given the value and challenges of intersectional research, Walker et al.'s (2019) framework is useful and timely. The framework includes five key principles (Table 2.1), addressing many of the challenges described above and providing some guiding questions (only some of which are listed below) for the researcher to select based on the research design. The first principle helps to identify relevant identity factors. Next, multi-level analysis addresses the problem of scale.

Principle three (power relationships) addresses power, privilege, and marginalization and how they manifest to produce vulnerability and resilience. Principle four (learning, action, and social change) prompts the researcher to be action- and change-oriented. Finally, reflexivity is included to ensure that the researcher maintains awareness of their own position relative to the research and the people involved. This framework is a proposed path for empirical intersectional research on climate change impacts and disasters in the Global North.

Table 2.1 Walker et al.’s (2019) framework principles and a selection of guiding questions

Principle	Guiding questions
1: Intersecting social categories	Which social categories are present and most significantly shape people’s experiences in this context?
2: Multi-level analysis	How do experiences across intersecting identities interact with social structures, sociocultural norms, and ideologies to influence differential access to resources and decision-making for immediate response and long-term adaptation planning?
3: Power relationships	Which experiences and knowledge are not reflected in response and adaptation planning? What are the underlying assumptions that result in these exclusions?
4: Learning, action, and social change	What did participants learn through experiences of hazards and/or adaptation planning that enhances awareness of needed social changes or their capacity to act for social change? Are there concrete examples of how experiences of a climate hazard and/or adaptation planning facilitated action to transform inequitable relationships, structures, or norms?
5: Reflexivity	What are the researchers’ own assumptions about which experiences and knowledges are valuable? How do differences in power and privilege shape research relationships? How can the researcher facilitate power sharing?

## 2.4 Community-based Post-disaster Learning

### 2.4.1 Adaptation at the Community Level

Adaptation can be defined as “adjustments in ecological, social, or economic systems [and] changes in processes, practices, or structures to moderate or offset potential damages or to take advantage of opportunities associated with changes in climate” (IPCC, 2001, p. 879). Relatedly,

“adaptive capacity is the potential or ability of a system, region, or community to adapt to the effects or impacts of climate change...a practical means of coping with changes and uncertainties in climate” (IPCC, 2001, p. 881). Defining and measuring adaptations and adaptive capacity at the community level remains complex (Owen, 2020). A recent review of 276 studies on adaptive capacity found 101 different measures to assess adaptive capacity, concluding that this area of research is “highly interdisciplinary; covers a wide range of sectors, geographic locations, and scales of analysis; and is highly fragmented” (Siders, 2019, p. 1). Further, only 20% of these studies addressed the community level.

One major challenge is identifying which determinants or characteristics should be used to measure adaptive capacity (Siders, 2019). Smit and Wandel (2006) describe four types of adaptation research. The first is large scale and typically involves climate models. The second examines specific adaptation options determined by the researcher and assesses the value of each option. A third type of adaptation research often includes risk and vulnerability assessments and can be used to direct resources accordingly (Smit & Wandel, 2006). Resources can include social (relationships and networks), human (education), institutional (health services), natural (access to water) and economic (employment opportunities) resources (Wall & Marzall, 2006). Some assessments also include cultural and spiritual resources (e.g., Aboriginal Disaster Resilience Planning, 2015). This type of research focuses on evaluation but does not address the roots of what causes or enables adaptations or vulnerability (Smit & Wandel, 2006). The fourth type of adaptation research, focused on practical application, aims to explore the experiences of the community and how it makes decisions about adaptation (Smit & Wandel, 2006). This type of adaptation research relies on the community to identify the characteristics and resources that factor into its risk, vulnerability, and adaptive capacity. It tends to be a more bottom-up approach relative to the former type of adaptation research, using community members’ insights and experience about their own community.

But what makes adaptation initiatives possible and effective? In terms of efficacy, Owen (2020) reviewed 110 adaptation initiatives, finding that effective adaptation practices often included collaborative decision-making and resource sharing and, in general, included a need for increased focus on social justice, power dynamics and “representation of diverse types of

knowledge and expertise” (Owen, 2020, p.11). In terms of making adaptation initiatives possible at the community level, some argue that previous experience with a threat and risk perception are key influences on adaptation (discussed further in the next section); there must be a belief of sufficient risk to motivate adaptation action (Adger et al., 2009). The following section discusses this issue – risk perception – more deeply.

#### 2.4.2 Experience, Risk Perception, and the Post-disaster Learning Window

Disaster management typically follows a four-phase cycle: mitigation, preparedness, response, and recovery (Public Safety Canada, 2015). The recovery phase starts within days after the event and can continue for years (Townshend et al., 2015). Whereas in the past, wildfire research focused on the mitigation and preparedness phases, there has recently been a growing focus on all stages of the disaster cycle (McCaffrey, 2015). Importantly, there continues to be a call for greater attention to post-disaster learning about social dimensions within the recovery stage (Christianson, 2015; Dodd et al., 2018; Enarson, 2001; McEwen et al., 2017).

The call for greater attention to the learning in the recovery phase is, in part, based on the idea that post-disaster, there is a ‘window of opportunity’ during which people who have experienced a wildfire are more motivated to implement changes. Lived experience with wildfire is one of several factors that can affect how an individual, household, or community responds to a wildfire threat, other factors being understanding and acceptance of risk, knowledge of preparedness strategies, and financial supports (Adger et al., 2009; McCaffrey, 2004). For example, Labossière & McGee (2017) found that in both of their study communities in British Columbia, a recent wildfire event acted as a catalyst to prompt community members to take action. In terms of policy and planning, the literature likewise suggests that a window of opportunity follows a disaster event or significant threat “created mainly because of the convergence of the problem stream, the political stream and the policy stream during and immediately after a disaster, albeit for a limited period of time” (Haque et al., 2021, p. 9). The assertion is that as time passes, motivation dwindles, making the best time to implement change directly after a wildfire event (Dodd et al., 2018; Labossière & McGee, 2017; McCaffrey, 2004).



However, this assertion is not fully supported by the literature (McGee et al., 2009; Schumann et al., 2020). Some researchers suggest that a window of opportunity should not be relied on as a catalyst for change (McGee et al., 2009). While lived experience can impact risk perceptions and, subsequently, mitigation efforts, the connections among experiences, risk perceptions and actions are not always simple or causal. These are also not the only factors. Martin et al. (2009) found that lived experience did *not* directly influence the risk perception–risk mitigation process; instead, they found residential status (full versus part-time) and self-efficacy (defined as “one’s perception of how competent [they are] in organizing and executing actions needed to manage a risky situation”) to be the greatest influencers of mitigation action (Martin et al., 2009, p. 492). In California, a study of 28 destructive wildfires found that overall, rebuilding trends did not demonstrate implementation of adaptation practices after the wildfires (Kramer et al., 2021). In this case, economic motivations may have been a significant factor, but the results suggest that a direct correlation between lived experience and risk reduction adaptations cannot be assumed. In some cases, lived experience can prompt action, although McGee et al. (2009) found that the loss of a home may send the message that mitigation efforts don’t work. The researchers also found that those who remained in their homes during a wildfire (as opposed to those who were evacuated) were more likely to implement mitigation strategies afterward. To address this tendency, they recommended clearer communication around risk reduction versus risk elimination (McGee et al., 2009).

Investigation into the relationships among adaptation, risk perception, and lived experience is ongoing. PDL opportunities may have potential to make shifts at the community level toward improved wildfire preparedness and response strategies. However, Schumann et al. (2020) warn that interventions that do not address the root causes of risk may encourage the re-establishment of unsafe situations. To address this, the next section discusses transformative learning and its potential to do just that.

#### 2.4.3 Social and Transformative Learning

As it is expected that wildfires will become more frequent and intense (Wang et al., 2017), communities in the wildland urban interface may be subject to repeated wildfire threats.

Experiences of community residents, if translated into useful, transformative learning, may serve them well in future wildfire situations. However, as discussed in the previous section, lived experience does not necessarily become new learning, nor is it necessarily tied to adaptation action in clear or causal ways. Transformative learning has been suggested as a means to enhance learning and adaptive capacity (Sharpe, 2016) and is increasingly evident in sustainability research (Rodríguez Aboytes & Barth, 2020). Learning includes a “change in knowledge, beliefs, behaviours or attitudes” (Sharpe, 2016, p. 213). *Transformative* learning is “learning that leads to a change in an individual's frame of reference [which is composed of] the cognitive building blocks that support deep changes in values, attitudes and associated behaviour that are central to evolving how we respond to living with disaster threats, including climate change” (Sharpe, 2016, p. 213). Mezirow identifies 11 phases of such learning:

1) A disorienting dilemma; 2) Self examination with feelings of guilt or shame; 3) A critical assessment of assumptions; 4) Recognition that one’s discontent and the process of transformation are shared, and others have negotiated a similar change; 5) Exploration of options for new roles, relationships, and actions; 6) Planning a course of action; 7) Acquiring knowledge and skills for implementing one’s plans; 8) Provisionally trying out new roles; 9) Renegotiating relationships and negotiating new relationships; 10) Building competence and self-confidence in new roles and relationships; and 11) A reintegration into one’s life on the basis of conditions dictated by one’s new perspective. (Mezirow, 1994)

In a wildfire context, phase one is the wildfire event itself, perhaps what others call the ‘window of opportunity’ or the ‘hot moment’ for post-wildfire adaptations (Schumann et al., 2020; Wise et al., 2014). A wildfire event can prompt a process that leads to community-based wildfire adaptations: “Becoming critically reflective of one’s own assumptions is the key to transforming one’s taken-for granted frame of reference, an indispensable dimension of learning for adapting to change” (Mezirow, 1997, p. 9). In between the disorienting dilemma (phase 1) and the reintegration (i.e., application of learning, phase 11) is a series of steps that requires reflection: collaboration, experimentation, understanding others’ perspectives and assumptions—all of which are “fundamental to effective collaborative problem posing and solving” (Mezirow, 1997,

p. 9). In other words, transformative learning requires both individual and collective reflection and reframing.

Across the social and transformative learning literature, several key elements stand out. First, social and transformative learning is iterative (Eriksen & Prior, 2011; Haque et al., 2021; Paveglio et al., 2018). Certainly, a disaster event is a particular moment that can function as a catalyst to prompt reflection, but whatever specific learning process people are engaged with will need to be revisited, with new learning outcomes folded back into the process.

Further, an early and crucial element is critical reflection (Eriksen & Prior, 2011; Haque et al., 2021; Harder et al., 2021; Sharpe, 2016, 2021). Sharpe (2016) shares that “having the time, space and opportunity for reflection is more likely to allow the learner to undergo deeper shifts in values and associated behaviour—so called transformational learning; and that this opens important space for learning to live with disaster risk and loss” (p. 213). For Haque et al. (2021), reflection is part of the definition of social learning: “a process of mutual development and sharing of knowledge through iterative reflections on experience so that new understanding can emerge” (p. 2). Eriksen & Prior (2011) include reflection as a primary component in their proposed framework for “targeting particular wildfire risk information to particular learning styles and learning stages” (p. 621). Reflection not only forms the foundation of the learning process but also brings into question assumptions, values, and concerns rooted in our worldview, which therefore inform our experiences and perspectives on disaster events (Sharpe, 2016).

Next, social and transformative learning is collective and collaborative. Dependant on the context, it is ideally undertaken among a diverse group of people or organizations at multiple levels (e.g., communities, various levels of government, NGOs) (Haque et al., 2021). It includes traditionally marginalized groups, and requires attention to power dynamics among participating members (Haque et al., 2021; Sharpe, 2016). Relatedly, it is about diversity in experiences and practice among the collective, and seeks to foster innovation, including new ways of thinking and doing; and new collaborations (Haque et al., 2021). Eriksen & Prior (2011) argue that working collaboratively at the community level can reduce “inhibiting factors” such as hazard

anxiety, complacency, and lack of self-efficacy. Social and transformative learning can address these challenges while building capacity and resilience as well:

The more interactive, local and context-specific the information, guidance and learning tools are, the more likely they are to be successful in improving individual and community preparedness for wildfire. This process is supported with conscious and subconscious sharing of experiences, fears, motivation, skills and other factors that influence people's level of engagement with wildfire. In this context, sharing spreads the burden associated with learning how to prepare and helps to build a shared, collective knowledge about how to address wildfire threat, which ensures a more resilient community. Interactions concerning wildfire preparedness also increase people's capacity to understand and address the uncertainty and challenging nature of events associated with wildfire activity. (p. 620).

Although researchers do not all agree about the efficacy of immediate post-disaster opportunities to foster adaptive change, transformative learning may have the potential to translate lived experience into new learning and actionable outcomes. Some challenges include understanding how to structure and measure transformative learning processes and outcomes (Desapio, 2017; Harder et al., 2021), identifying appropriate participants, ensuring accessibility, and including a trained facilitator, perhaps with conflict resolution skills (Harder et al., 2021; Scolobig et al., 2015). Transformative learning theory has also been criticized as assuming a rational learner and rooted in western worldviews (Wang et al., 2019). Despite the challenges, sustainability scholars are increasingly attempting to bridge transformative learning theory and practice (Rodríguez Aboytes & Barth, 2020) with the view that transformative learning may have the “potential to unlock critical reflection and questioning of practices that are unsustainable and [that] add to the vulnerability of those at risk from disasters” (Sharpe, 2016, p.217).

## **2.5 Conclusion**

This chapter has explored a wide range of literature to provide a scholarly foundation for this thesis beginning with social sustainability in disaster management and the concepts of resilience and vulnerability, demonstrating that these concepts are complex and evolving. Next, I reviewed some of the literature on the social dimensions of disaster experiences, noting how social identity factors such as gender and age impact such experiences. Methodologically, I reviewed the utility of FST and feminist intersectionality as lenses to support this research. Lastly, I looked toward how to post-disaster learning at the community level, highlighting transformative learning as a means of changing the ways knowledge is created and mobilized at the community level. In the next chapter, I explain my research design. I detail my approach to and rationale for selection of FST as the methodology for this research and explain the methods employed.

## CHAPTER THREE: THE RESEARCH PROCESS

In this chapter, I begin with an overview of the research design and the particular influences that led to this design. Next, I discuss methodology and the rationale for such an approach. This leads to a description of the study communities and the ways relationships were built early in the research process, followed by a statement of my own positionality to further contextualize my own role as researcher and my relationship to the community members and the research itself. Next, I outline the selected methods; this is followed by a more detailed description of the processes for data collection and analysis. Last, I discuss ethics and limitations of this research.

### 3.1 Research Design

#### 3.1.1 Design Overview

In the early stages of this research design, certain guiding influences were identified and made explicit, such as its purpose to support empowerment, be practical and attentive of social identities, and be change oriented. This research was rooted in feminist social constructionism. Constructionism<sup>1</sup> asserts that “knowledge is not only constructed by an individual’s interaction with his/her own world or experience but also co-created by his/her [their] interaction with other individuals within a specific social community” (Mohammad & Farhana, 2018, p.276). According to Patton (2015), constructionist research is that which acknowledges subjectivity (reflexivity/positionality) and is relationship-based; it also emphasizes particularity, transferability (as opposed to generalizability) and triangulation (including multiple

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<sup>1</sup> This is related to but ultimately differentiated from *constructivism*. In broad categorizations of theory and methodology, they are often grouped together and even used synonymously (see Patton, 2015). However, there are significant differences, a full elucidation of which is outside the scope of this thesis. For these purposes, a key distinction is that ‘constructionism’ refers to collective/interactive meaning-making, whereas ‘constructivism’ refers to individualized meaning-making. This research takes a constructionist approach but, where appropriate, I use the term ‘constructivist’ appropriately given source material. In instances where constructivist approaches are applied, the distinctions between constructivist and constructionist are inconsequential for the purposes of this research (e.g., the use of constant comparative analysis from constructivist grounded theory).

perspectives). This research was also grounded in feminist philosophy; it focused on issues of power, positionality, inequalities, capacity building, action, agency, and change. Specifically, this research sought to rigorously apply an *intersectional* feminist lens, taking into account how “the dynamic, multiple, interacting systems of privilege and oppression (e.g., race, gender, class, and sexuality)...impact individuals’ lives” (Watson et al., 2018, p.296).

I also designed the research to be participatory and pragmatic to help communities to prepare for and respond to wildfire events. I took a bottom-up approach that included focusing on community-identified needs and priorities, experiences and knowledge from community members themselves, and existing structures, goals, and adaptations within the community (Smit & Wandel, 2006). This research aimed to produce something tangibly useful *for* the study communities by working *with* the study communities, both as an output of the research itself and in the spirit of reciprocity. This research therefore aimed to employ participatory means to a pragmatic end.<sup>2</sup> Patton (2015) discusses participatory and pragmatic research as that which includes significant participation; shares power; promotes learning by doing; encourages group reflexivity and ownership; and is actionable, applicable, practical, and credible to users of the outputs of the research. Appendix A provides a summary table showing how elements of this research align with the various research design influences.

### 3.1.2 Methodology

Methodology is “the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes” (Crotty, 1998, p.3). FST, informed by principles of community-based participatory research, provided suitable methodological guidance for this research. FST as a methodology identifies

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<sup>2</sup> This research is informed by participatory and pragmatic research but is not wholly participatory or pragmatic. Participatory research methodology is discussed further in 3.1.2. Regarding pragmatism, I include it due to the objective of stimulating a process for PDL via the co-development of a framework. In this way, I wanted to hold this research design – and myself – accountable to the general principles of pragmatic research, which seeks practical, useful, actionable knowledge and conducts research in a pragmatic way: “making methods decisions based on the situation and opportunities that emerge” (Patton, 2015, p. 153) – an approach that proved invaluable after the onset of the COVID-19 pandemic.

common standpoints based on shared experience (Hirschmarm, 1998) to provide “explanations of dominant social institutions and their ideologies, rather than...trying to explain the lives of marginalized groups” (Harding, 2007, p. 30). While this research seeks to identify the particularities of individuals’ experiences, it is largely designed to inform and develop a framework for the broader community – and possibly other rural Canadian communities – thereby potentially shifting practice to a larger scale. FST provides conceptual tools that are useful methodologically in this research because they root the research in critical theory and relational knowledge creation, while prioritizing subjectivity, marginalized knowledges, and change and action (Harding, 2016).

Although this research is not strictly community-based participatory research (CBPR), elements of this methodology were selected to inform research design. I drew upon CBPR methodology because of its emphasis on experiential learning and emancipatory practices (Lykes & Coquillon, 2007). CBPR also emphasizes relationship-building, shared learning, reciprocity, intentional power-sharing, and mutual ownership of the products of research (Rhodes, Malow, & Jolly, 2010). These key elements from CBPR are congruent with those of FST as well as my objective to stimulate a process for PDL.

### 3.1.3 Description of Study Communities and Relationship Building

The study communities of Wadin Bay, SK and Napatak, SK are located in Northern Saskatchewan, Canada. Wadin Bay is located approximately 25 kms north of La Ronge, SK in Treaty 6 Territory and Napatak is located approximately 25 kms south of La Ronge, SK in Treaty 6 Territory (Figure 3.1). Napatak is classified as a resort subdivision with fewer than 200 residents (Northern Municipal Services, n.d.). Wadin Bay is a similarly populated community classified as a recreational subdivision with fewer than 100 dwellings (Price & Harris, 2014). Each community includes a mix of seasonal residents and full-time residents.



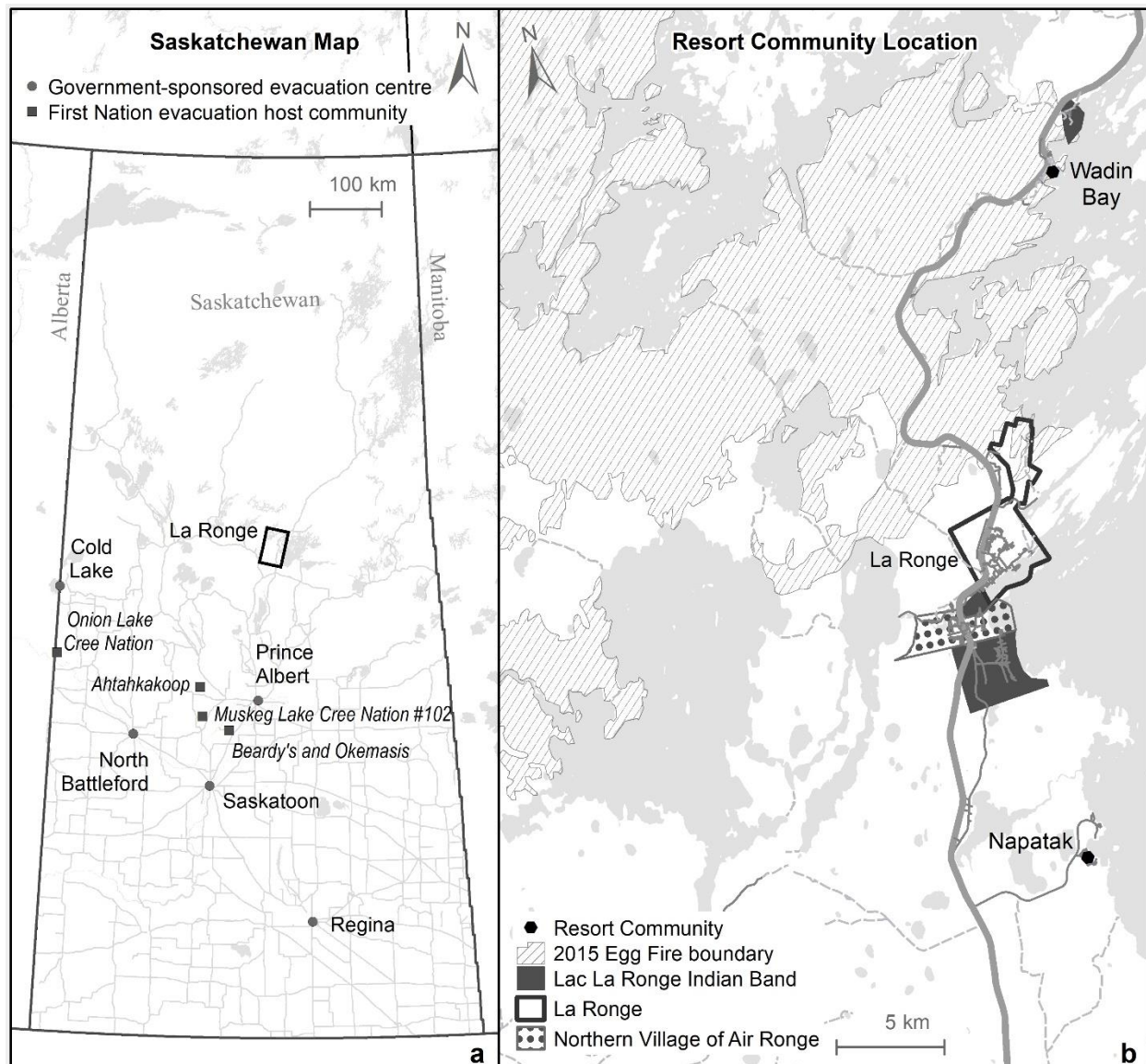


Figure 3.1 Study communities: Wadin Bay, SK and Napatak, SK.

In 2015, these two communities, along with the rest of Northern Saskatchewan experienced an unprecedented wildfire season. According to the Canadian Disaster Database, the more than 720 wildfires burned 1.8 million hectares of land and prompted the largest evacuation in Saskatchewan's history; more than 13000 people from 54 communities were evacuated (Public Safety Canada, 2013). The Canadian Armed Forces were sent to the La Ronge area to assist local firefighters; La Ronge is listed as one of the "most severely impacted" communities of the 2015 wildfire season (Public Safety Canada, 2013). Wadin Bay residents were evacuated, and the

wildfires caused a loss of several structures within their communities. Several Wadin Bay residents chose not to evacuate and stayed to defend their community against the wildfires. Napatak was not officially evacuated, though experienced many of the same effects of the wildfires, including smoke, restricted travel, and also unofficially hosted evacuees from other communities.

The communities of Wadin Bay, SK and Napatak, SK were identified as potential study communities due to their prior experience with wildfire and their involvement with FireSmart. Lived experience with the 2015 wildfires was a prerequisite for participation in interviews and the workshop. Participation in FireSmart demonstrated that these communities were primed for thinking about and engaging in wildfire management at the community level. Wadin Bay became a FireSmart community shortly before the 2015 wildfires, and Napatak officially joined the program shortly after the wildfires.



Figure 3.2 Community entrance sign in Wadin Bay

Among the residents, many are employed in the nearby town of La Ronge, and several are employed in forestry and wildfire management. Within the participant group and beyond, community members included people who worked in education, health care, aviation, wildfire

management, social work, and forestry. There were also artists, small business owners, farmers, and homemakers. There are many long term, multi-generational residents; more than half of the participants in this study had resided in Napatak and Wadin Bay for more than ten years, almost half for more than 20 years. Further, many have long histories of living in Northern Saskatchewan in general. There is a great deal of lived experience with wildfire – both in the study communities themselves as well as other areas of the North.

The broader region in which these two communities exist is jurisdictionally complex, including the Town of La Ronge, the Village of Air Ronge, and the Lac La Ronge Indian Band, which includes multiple First Nation communities. Napatak and Wadin Bay are not Indigenous communities themselves, but the region includes many Indigenous communities and Northern Saskatchewan itself is comprised of approximately 85% Indigenous people, compared to 15% Indigenous peoples across all of Saskatchewan (Statistics Canada, 2017a).



Figure 3.3 Visit to Napatak, 2019

Photo credit: Maureen Reed

Upon identifying Napatak and Wadin Bay as potential study communities, I made my first visits to each community to introduce myself and the research proposal in general. Initially, I connected with several residents in FireSmart leadership roles and local community governance roles. In each community, I was generously hosted for tours and meals. I participated in the



Annual Napatak FireSmart community clean-up event where I met and worked alongside community members to clear deadfall from the forest around the residents' homes and community spaces. These early connections with community members allowed us to discuss the proposed purpose and utility of the research and listen to what they had to say. Community members were genuinely welcoming and open to my presence and research plans.



Figure 3.4 Napatak residents at 2019 FireSmart community clean up event, with permission.

Photo credit: Tina Elliott

Later, I attended a community event in the nearby community of La Ronge, once again crossing paths with several community members of Napatak and Wadin Bay. A short time later, I was invited to present my research proposal at the Wadin Bay Cabin Association's Annual General Meeting. My family and I stayed in the community and took part in the community barbeque. Community members showed interest in the research and resulting thesis; I assured them they would have access to the thesis and further, that the framework would be co-developed, and they would have a voice in other knowledge mobilization outputs. In time, as our relationships grew stronger, the communities invited me to join their social media pages as well. I interpret this as a demonstration of their trust in me and appreciated being included in their private social media group. Because of this invitation, I was able to be present in a virtual way, make posts about the research, and be in direct contact with community members via private messages.

Relationship building proved to be an essential component of this research; the early, reciprocal investment on behalf of both myself as the researcher and the community members themselves

served to provide a strong basis for the remote data collection that followed in the months to come. I prioritized relationship building – a key principle of CBPR – to support the process of identifying the study communities, introducing myself and the research, and guiding the overall research design (including, for example, selection of data collection methods). During each visit, I reiterated the goals of my research and talked with community members about what their goals might be in relation to the project. Over the course of these early visits, I aimed to demonstrate that I – and, by proxy, the proposed research goals – were trustworthy and genuine. With the onset of the COVID-19 pandemic, these visits proved especially valuable as my ability to travel in person would be prohibited in the months to follow. Throughout the pandemic, I remained in contact with the study communities through email, phone, and the communities’ social media groups.

#### 3.1.4 Researcher Positionality

Given the prominence of relationship-building and the importance of reflexivity in feminist research, I include myself, the researcher, as a primary “instrument of inquiry” (Patton, 2015, p.47). One’s standpoint affects the ways we may or may not be able to see and it can change over time and so a researcher’s knowledge is also situated and partial. In some ways, my standpoint is a privileged one. As such, in academia and beyond, I recognize my responsibility to educate myself, listen carefully, and be humble about that which I cannot know from my own standpoint.

Epistemologically, my worldview aligns with constructionism. My educational background in Women’s and Gender Studies and Social Geography laid a path toward – and informed – this research. As a person with settler roots who lives on Treaty Six Territory, I recognize the many teachers from within academia and from my community who have educated me and informed this work. In terms of what I value, I am increasingly pragmatic and action oriented as I believe the urgency of climate change calls for this. My roots are in Treaty Four Territory where my family farmed. These ties fostered a strong connection to the land and are the point of origin for my personal and academic interest in climate change issues and research. I believe these influences and positions I hold are reflected in the research design to a large degree.

This research took place during a timeframe where there were many significant shifts both in the climate change discourse and in social justice arenas. Further, an ongoing global pandemic began during this research, which not only affected the research itself, but highlighted numerous pre-existing social issues and inequities. Importantly, the social movements of Black Lives Matter and Indigenous Lives Matter, and most recently, the discovery of thousands of unmarked graves of Indigenous children at Residential Schools in Canada have elevated the prominence of such conversations. This research is not Indigenous-specific nor does it claim to be fully ‘decolonized’. However, I approach the process of decolonizing my own ways of thinking and being as a work in progress. As such, I heartily sought to inform this work with the lessons I have learned through these conversations and experiences.

To intentionally and actively attend to the effects of my role in this research, I sought to be open and authentic with community members. I also strove to design the research in such a way that I was a leader in the process, but just one of many people guiding its outcomes and outputs. I talked openly about commonalities and difference; for example, that I am not a ‘Northerner’ – a common way interview participants identified themselves, though I am from rural Saskatchewan in general. I endeavored to be transparent about the research process, importantly, naming the ways that I held power and the ways that the communities and research participants held power. In my initial meetings with community members, I asked if the research I was proposing was welcome and useful to the communities. I sought feedback from community members about preferred methods of knowledge mobilization, the practicality of engaging people, and the utility of the proposed framework. I paid particular attention to perspectives that were different than my own, asking for clarification whenever necessary.

### 3.1.5 Methods

Three methods supported each other to address the research objectives: document analysis of community-based wildfire management tools, semi-structured interviews, and a virtual workshop. Table 3.1 summarizes the relationships among the objectives, methods, and their purposes.

Table 3.1 Research objectives, corresponding methods, and purpose of each method

Research objective:	Methods used to address objective:	Goal of each method:
1: Identify key social factors that shape experiences of wildfire	Document Analysis	To understand which, if any, identity factors are addressed in wildfire management tools
	Interviews	To provide data on diverse experiences of wildfire, intersectional analysis
	Workshop	To validate previously collected data through participant feedback and co-development of framework
2: Document effects of social strategies	Interviews	To provide data on diverse experiences, intersectional analysis
	Workshop	To validate previously collected data through participant feedback and co-development of framework
3: Stimulate process for post-disaster learning via framework development	Document analysis	To collect data which informs co-development of framework
	Interviews	To collect data which informs co-development of framework
	Workshop	To co-develop framework

### 3.1.5.1 Document analysis

The purpose of the document analysis was to examine existing community-based wildfire management tools (guides, frameworks, etc.) available to communities in Canada. This method of data collection has numerous benefits including high efficiency and feasibility, low obtrusiveness and reactivity, and wide availability; cautionary points include the need to be conscious of the intended audience, the purpose and source of the document (Bowen, 2009; Wesley, 2014). In particular, I focused on what these tools offered to communities in terms of post-disaster learning (PDL) about the social dimensions of wildfire. This method addressed objective one by lending understanding about the degree to which the social dimensions of wildfire, particularly post-disaster, are a priority. It also informed the co-development of the community-based framework (objective three).

### 3.1.5.2 Semi-structured interviews

The purpose of the interviews was threefold: First, I sought to gather information about if and how various identity factors influenced participants' experiences of the 2015 wildfire (objective one). Next, interviews allowed for the documentation of the two study communities' social strategies, especially given differential involvement in FireSmart and experiences of wildfire (objective two). Finally, the interviews (along with the document analysis) provided the basis for the co-development of the PDL framework (objective three).

### 3.1.5.3 Virtual workshop

The term workshop can be defined as a “an arrangement whereby a group of people learn, acquire new knowledge, perform creative problem-solving, or innovate in relation to a domain-specific issue” (Ørngreen & Levinsen, 2017, p. 71). As such, it was a suitable method to achieve the goals of this research, in large part due to its participatory nature.

Of note is the term ‘collaborative’. This term is used throughout this research and in the context of a workshop as a research method. Ørngreen & Levinsen (2017) discuss various modes of participation, that is, four ways of the researcher engaging and sharing power with participants. In this research design, collaboration meant asking the participants and researcher to work together, but the researcher is, ultimately, the lead. Given the broader context of this research design (importantly, practical, and logistical matters), this definition is the most suitable. While it was preferable to enhance participant agency wherever possible, I was also mindful of the demands of time and labour on participants. This approach struck a balance between prioritizing participants' perspectives without the burden of undue labour.

The purpose of the workshop was to have participants increase confidence in the data from the document analysis and interviews which addressed objectives one and two. It also served to co-develop the PDL framework (objective three). Originally, the workshop was intended to be held in-person in the study communities. However, the workshop was later re-designed as a virtual method after the onset of the COVID-19 pandemic. The term virtual is applied here to denote that the means of achieving our goals were not in person, and instead used online tools, phone,



and mail. Despite not being together physically, we virtually created spaces, interactions, and outcomes that were similarly meaningful and productive.

## **3.2 Data Collection and Analysis**

### **3.2.1 Document Analysis**

The overarching goal of the document analysis was to review the documents that would most likely be found by or promoted to rural communities in Canada. In consultation with a specialist librarian, I developed a strategy for a formal, systematic, grey literature search for community-based wildfire management tools (Choo, 2003). By formal, I refer to a search at the most targeted, methodical, systematic type of search (Choo, 2003). By systematic, I refer to a search that has clear inclusion and exclusion criteria, documents the search process thoroughly and searches several relevant sources. Appendix B details the four-step search strategy including search terms, results, timeframe as well as inclusion and exclusion criteria.

Once the search for relevant documents was complete, analysis began. According to Bowen (2009, p.27), “document analysis is a systematic procedure for reviewing or evaluating documents... document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge”. With this definition in mind, I developed a primarily deductive approach, examining the documents using a predetermined code structure (Appendix C). I designed the coding protocol to follow O’Leary’s (2014) suggestion to think of document analysis as ‘interviewing a document’. As such, the coding protocol guided me systematically through a review of the documents, ensuring consistency and thoroughness. However, I allowed for some inductive analysis, being open to see elements that were outstanding, innovative, or adaptive and, as Bowen (2009) suggests, look for what is not included. I began with an initial review of each document prior to coding, then proceeded with coding using *NVivo* software (Version 12). Coding was conducted one section of the protocol at a time so as to focus on a single analytical theme or group of questions at a time. Coding in this fashion meant that each document was reviewed several times, increasing my familiarity with the documents.

The results of the document analysis informed the subsequent data collection methods in several ways. For example, I noted inclusive language in the documents and carried this forward in my own research practices as well as in the framework itself. The conceptual framing of various key terms was also noted and influenced the ways we framed such terms (e.g., the most holistic and inclusive definitions of ‘community’). Given that FireSmart was the primary guide used by community members, I noted the strengths and shortcomings of FireSmart in addressing the social dimensions of wildfire. I also noted strengths and useful approaches evident in the remaining documents that were analysed. I carried forward the best practices while also aiming to devise strategies to address the shortcomings of existing guides.

### 3.2.2 Semi-structured Interviews

Semi-structured interviews were conducted over a period of several months with Napatak and Wadin Bay community members. The criteria for participation were that participants must: 1) be community members at the time of the interview and during the 2015 wildfires; and 2) be a minimum of 18 years old. Recruitment began after committee and Behavioural Research Ethics Board approval.

I identified participants using a type of purposeful sampling (maximum variation sampling) which is useful for small sample sizes where diversity is of interest. This approach turns the apparent weakness of a highly heterogeneous sample into an advantage by asking what common themes arise from such a diverse sample (Patton, 2015). This approach can yield rich data from each case (highlighting uniqueness) while also allowing commonalities to emerge across the diversity (Palinkas et al., 2015). To achieve a diverse sample, I aimed to include participants who identified as belonging to traditionally marginalized groups (e.g., women, visible minorities). In the end, approximately half of the participant group identified as women, half as men; approximately half were full time residents, half were part time; and the ages of participants ranged from in their 20s to 70s. A wide range of educational, vocational, and religious backgrounds were identified as well. To a lesser degree, there was some variation in how participants identified themselves in terms of living with a disability or not, cultural/ethnic background, and sexuality.

While previously planned as face-to-face interviews, the interviews were instead conducted remotely due to COVID-19. Eighteen interviews were completed with ten people from Napatak and eight people from Wadin Bay, ten of which were via phone calls and eight via video conferencing calls. At their request, and with approval of the Research Ethics Board, two pairs of people were interviewed together. The number of interviews was determined by availability, interest, and data saturation point. With regard to saturation and non-probabilistic sample sizes (as is the case here), interviews numbering as few as 6 have been shown to be enough to identify basic elements for meta themes, and that data saturation can occur within 12-16 interviews (Guest et al., 2006; Hagaman & Wutich, 2017).

Prior to interviews, participants were provided with information about the research project and the consent form (Appendix D) to review; consent was primarily provided verbally at the time of the interview. A semi-structured interview guide (Appendix E) was developed prior to the interviews, including the use of word clouds consisting of various self-descriptors to prompt participants to think of themselves as holistically as possible (Appendix F). Interviews ranged in time from 50 minutes to 150 minutes. All interviews were recorded and later transcribed using either human transcribers or transcribing software. The four interviews with participants who interviewed in pairs were treated as individual interviews – transcribed as one document but analysed separately.

Analysis of the transcripts was conducted using *NVivo* software (Version 12). Interview data were analyzed in an inductive fashion, using a method from constructivist grounded theory called constant comparative analysis. While this research does not employ grounded theory as its methodology, the use of constant comparative analysis outside of a strict grounded theory approach is not novel (Fram, 2013). Constant comparative analysis dictates that as soon as data are available, analysis begins (Clarke, 2007) with the “constant comparison of incident to incident, incident to codes, codes to codes, codes to categories, and categories to categories” (Birks & Mills, 2015, p.11). In this way, there is a constant return to what is emerging from the data. This analytical approach is intended to be flexible and adaptive, encouraging the researcher to be imaginative in seeing the emergent meaning of the data (Kenny & Fourie, 2015); it is an “impressionistic coding procedure which was fashioned to construct a conceptual interpretation

(rather than exact apprehension) of the phenomena” (Kenny & Fourie, 2015, p. 1280). The focus is on context, complexity, description, and the constructivist nature of this approach allows for multiple ‘readings’ of the data. This approach to data analysis is suitable given the focus on diversity in my research objectives, methodology and sampling approach.

With this in mind, I began coding shortly after the transcription of the first interview (May 2020) and continued analysis beyond the last interview (November 2020). Codes were reframed and reorganized over this time as themes developed, transformed, merged, and diverged (Appendix G). Analyzing the data in this way meant that data from each interview was reviewed several times. Some codes were created as they were initially a prominent theme, only to be largely abandoned later on. Other codes became so robust they ultimately warranted review and a disentanglement of more than one theme or subtheme. Some of the key themes included *Communicate*, *Engage*, and *Capacity*, and are detailed further in Chapter Four and Chapter Five.

### 3.2.3 Virtual Workshop

A virtual workshop was designed and facilitated to gather and incorporate community members’ input into the PDL framework. Prior to the workshop, data from the interviews and document analysis was analysed; key themes arose from each. It is sometimes the case in CBPR that the participants themselves will review prior data (Hergenrather et al., 2010) if said data are used in subsequent methods; however, with regard to the interview data and issues of confidentiality, this was not feasible. Further, it would have been impractical to ask participants to review and analyse the wildfire documents in-depth and therefore, I completed this analysis on my own.

Due to restrictions and recommendations related to COVID-19, the workshop goals had to be achieved with alternative, remote methods. The workshop participants were recruited from the initial pool of interview participants in each community due to their prior relationship and familiarity with both the researcher and the research itself. Six participants of the original 18 volunteered to take part. All workshop participants were asked to complete a workshop-specific consent form (Appendix H), highlighting the specific limitations of confidentiality in a group

activity, and reminding participants to protect the confidentiality and contact information of the group members.

The virtual workshop consisted of two components. The first component paired participants from Napatak with a partner from Wadin Bay. Each participant was provided with a workshop guide and asked to independently complete a worksheet (Appendix I). The workshop asked them to review the key terms (arising from the document analysis and interviews) and rank, group, and relate them. Participants were asked to rank the terms in order of importance (e.g., first, second, etc.), though they could place more than one term in each rank. They were also asked for the rationale for their ranking system. These terms are listed in Table 5.1. The goal was to prompt individual thinking about these terms in depth. The participants then discussed their responses with a partner using discussion questions provided. Finally, the participants submitted to me written notes from their independent and partnered work. Part one of the workshop took place over five weeks.

Following this, I compiled and analyzed the notes and sketches provided by the six participants, using *NVivo* (Version 12). Trends were identified both in how participants ranked the importance of terms and how they related them. Most participants related the terms as a multi-step process where the more important elements were placed at the beginning of the process. Two themes, *Context* and *Communicate*, appeared to be outliers in the sense that they were ranked as very important, but difficult to relate and place within the process. The draft framework drew attention to some key elements of transformative learning (e.g., reflection), the iterative nature of learning, and the importance of social cohesion.

In the second component of the workshop, all six participants came together in an online discussion and review of the draft framework (see section 5.3.2, and Appendix J.). Using Google Jamboard, the framework was presented, amended by supplementary information about each stage of the framework and a proposal for practical application. Participants were asked to imagine that they and their communities would use this framework, were provided with discussion questions, and asked to provide feedback on its efficacy, accessibility, language, imagery, and anything else they wanted to share. To protect privacy, participants were asked not

to use their real names or share the Jamboard link. The virtual space remained open for a week and a half, during which time I monitored to review responses, answer questions and prompt conversations, provide clarifications, and pose follow-up questions so as to act in the role of an in-person workshop facilitator. After the week and a half, the document was closed to further comment and downloaded for analysis. Participants provided new insights related to audience, mobilization and accessibility of the framework and supporting documents. Some relational aspects of the framework were questioned, leading to a slight reorientation of the terms and their placement within the framework. In particular, participants were enthusiastic about the proposal for practical application of the framework. Based on this response, I developed it further by returning to and drawing upon the data and literature review. The framework in its revised form is presented in Chapter Six.

### **3.3 Ethics**

This research was approved by the University of Saskatchewan Behavioural Ethics Review Board in October 2019. Consent forms were used for both the interviews and the virtual workshop (Appendix D, H respectively). Transcript release forms were also used after the interviews (Appendix K). Given the nature of the communities (close-knit and small populations), I was cautious about using identifying information through the data collection, analysis, storage and writing stages of the research.

In terms of less formal ethical considerations, I was conscious of several aspects of the research process which deserved extra care. One such aspect was the risk to participants; although risk was minimal, I could foresee that discussion of past experience with wildfire may be distressing, and therefore I created and distributed a list of mental health resources to participants. Another was my own desire to be authentic and transparent; as such I talked with participants about my role in the research and my motivation for conducting it, so as to place myself and my role in context. I invested time and energy in fostering authentic relationships with community members and participants to build trust and transparency among us and with the research process itself.

Lastly, I was aware that the COVID-19 pandemic was a stressful time for many people. In myself and in participants, I noted a tension between a desire to engage heartily and a respect for the potential impacts of the pandemic on the participants. Marino et al. (2020) asked their academic audience “Is it ethical to interrupt their [participant’s] work, and exacerbate their exhaustion, with our research?” (p. 39) and “How can we humble ourselves to deprioritize our professional needs and identify and accept when consent is ambivalent or unenthusiastic?” (p. 38). Although these questions came from a particular anthropological perspective, it resonated with me in the spring of 2020. With these and other questions in mind, I sought to be sensitive to pandemic’s effects on participants and to proceed with my research practice accordingly. I took guidance from scholars discussing ethics of care in academia (Corbera et al., 2020), who made practical suggestions to “establish new practices for data collection and...collaborative research” (p.6) and to consider “how the COVID-19 crisis is widening gender, ethnic, and class inequalities” (p.6) and act accordingly. This is evident in the redesign of some of the methods.

### **3.4 Limitations**

This research adds to the literature on the social dimensions of wildfire and may enhance communities’ ability to incorporate PDL in their wildfire management plans. The inclusion criteria of the document analysis are a notable limitation for application outside of Canada since I only reviewed documents that were created within Canada and for a Canadian context; there may be wildfire and disaster management tools in other jurisdictions that were not reviewed. Further, interview and workshop sample sizes were adequate but modest to ensure feasibility. The modest size of participant groups and minimal diversity among participants limits the generalizability of this research. The exact experiences of research participants cannot be extrapolated to whole community nor to other communities in Canada; however, in the context of social science constructionist research, the goal is transferability, not generalizability.

As for transferability, the specific SIFs that influenced participants from Wadin Bay and Napatak would likely differ in other communities, although the way they are represented in the framework would not. The social strategies that participants identified in their experiences are supported by both the literature (to a large degree) and the wildfire management documents that

were reviewed (to a lesser degree) and are therefore far more likely to apply elsewhere. The framework itself is potentially useful beyond Napatak and Wadin Bay in any rural, Canadian community with disaster experience, wildfire or otherwise (further discussed in Chapter Six). Finally, I include researcher bias as a limitation in this research acknowledging that I came to this research from a specific standpoint which, while addressed and acknowledged, cannot be extricated from the research.

### **3.5 Conclusion**

This chapter began with an overview of the research design, which is primarily guided by constructionism (with influences from CBPR and pragmatism) as well as FST and intersectionality. The methods, ethics and limitations are also described. The next chapter presents the results of this research, specifically those related to objective one (to identify key social identity factors) and objective two (documentation of social strategies).



## **CHAPTER FOUR: SOCIAL IDENTITY FACTORS AND SOCIAL STRATEGIES IN THE CONTEXT OF WILDFIRE**

This chapter presents results related to the first two objectives: 1) to identify key social identity factors (SIFs) that shaped experiences of wildfire and 2) to document social strategies used by participants during their experiences of wildfire. First, I describe the findings from analysis of wildfire management documents pertinent to rural Canadian communities. The documents are briefly introduced and then I describe the ways SIFs are addressed, highlighting a couple of notable examples. Second, I discuss the key SIFs that were most influential in participants experiences; these include socioeconomic status, geography, gender, and age. Finally, I discuss five social strategies, including *Communicate*, *Lead and Govern*, *Engage*, *Educate*, and *Collaborate*.

### **4.1 Social Identity Factors in Wildfire Management Documents**

#### **4.1.1 Overview of Community-based Wildfire Management Documents**

Following a near-systematic search (Choo, 2003) for community-based wildfire planning documents, seven documents were found to fit the inclusion criteria (Appendix B) and were subsequently analyzed. These documents had significant differences in scope, intended audience, and level of detail; however, this analysis sought not to compare the documents, but to examine which, if any, identity factors were addressed. Below, Table 4.1 provides a summary of the documents, followed by brief introductions to the documents. Each introduction begins with the full title of the document, followed by an abbreviated title which will be how the documents are referred to for the remainder of this thesis.

Table 4.1 Summary of documents

Title	Author	Year	Type	Focus	Pp.	Region
FireSmart <sup>1</sup>	Partners in Protection	2003	Guide	Wildfire	183	Canada
B.C. Toolkit	B.C. Government	2019	Toolkit	Disaster	27	B.C.
Economic Roadmap	Colleen Bond, EDCD Consulting	2020	Toolkit	Disaster	28	B.C.
Community Protection Template	Community Resiliency Investment Program	2018	Template	Wildfire	39	B.C.
Aboriginal Disaster Resilience Guide	Partners/Justice Institute of British Columbia	2015	Guide	Disaster	299	Canada
Surrey Toolkit	City of Surrey, B.C.	2015	Toolkit	Disaster	9	Surrey, B.C.
Ontario Guide	Ontario Government	2016	Guide	Wildfire	10	ON

*FireSmart: Protecting Your Community From Wildfire (FireSmart)* is one of many resources produced by Partners in Protection, a “multidisciplinary non-profit association, made up of members representing national, provincial and municipal associations, government departments responsible for emergency services, forest and parks management, land use planning and private business and industry” (FireSmart Canada, 2018). This document guides communities in the wildland urban interface through evaluation of hazards, mitigation, education, and response strategies, providing practical tools to people to reduce the risk of loss of life and property (Partners in Protection, 2003). Canadian communities can be recognized as official FireSmart Communities either at the neighborhood level or through local government. Across Canada, 188 communities have been recognized (again, either at the neighborhood or local government level); these are predominantly in B.C. (159), with an additional 21 in Alberta, and the remainder in the N.W.T. (1), Saskatchewan (3), Ontario (2) and Quebec (3). This document mentioned social and

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<sup>1</sup> Although this document was originally published in 2003 – outside the date range of this search – it continues to be widely promoted and used across Canada. The source website was 2020.

economic considerations, although it largely focused on physical and technical aspects of wildfire management.

*The Emergency Management Planning Guide for Local Authorities and First Nations (B.C. Toolkit)* (Emergency Management British Columbia, 2019) is a “self-guided emergency planning toolkit to support communities who are creating or updating their all-hazard emergency management plan [which] describes clearly how people, property, and the environment will be protected in an emergency and provides a road map of actions that will be taken when an emergency occurs” (Government of British Columbia, 2020). This toolkit is amended by several other documents including a template and a communications guide. It is not wildfire specific. This document attends to physical, technical, social, economic, and other considerations.

*The Recovery and Resiliency Roadmap: A Toolkit for Economic Preparedness (Economic Roadmap)* is a disaster management tool that “provides strategies and tactics for community leaders to focus on for economic recovery” (Hackman-Carty, 2019). It is unique within this analysis in its economic focus. The toolkit was created with support from the British Columbia Economic Development Association and Economic Developers Alberta (Hackman-Carty, 2019).

The *Community Wildfire Protection Plan Template (Community Protection Template)* comes from the Community Resiliency Investment Program launched by the B.C. Government in 2018 (Union of British Columbia Municipalities, 2012). It is wildfire specific and largely focuses on the physical and technical aspects of wildfire with some brief consideration of social issues.

The *Aboriginal Disaster Resilience Planning Guide (Aboriginal Disaster Resilience Guide)* is a comprehensive, multi-faceted guide aimed at enhancing communities’ resilience to disasters through a multi-phase process. It addresses multiple hazards, including specific-hazard assessment tools for wildfire and others. The *Aboriginal Disaster Resilience Guide* was developed from its predecessor, the Rural Disaster Resilience Project, but was “designed with Aboriginal communities in mind” (Aboriginal Disaster Resilience Planning, 2015a). It addresses physical, technical, social, economic, and other considerations of wildfire and disasters generally.

Surrey, B.C.’s *Neighborhood Emergency Preparedness Toolkit (Surrey Toolkit)* introduces community leaders to a program which aims to arm people with knowledge, skills, and resources needed to be self-sufficient for at least 72 hours after a disaster. The document intended to be supplemented with support from facilitators from the municipal government-run program. The document is somewhat balanced in its approach but is brief – just nine pages – and takes an all-hazard approach.

The *Guideline for the Development of a Municipal Forest Fire Emergency Plan (Ontario Guide)*, found on a the Government of Ontario website, is designed to “assist municipalities in developing a Forest Fire Emergency Plan” and “to allow for a coordinated initial tactical response by a municipality and its partners” and “to identify and detail lead agencies in the municipal response” (Government of Ontario, 2016). This document is heavily focused on the physical aspects of wildfire.

Notably, several of the documents refer readers to others within this analysis (see Figure 4.1). The *B.C. Toolkit* suggests use of the *Aboriginal Disaster Resilience Guide*. The *Aboriginal Disaster Resilience Guide*, *Community Protection Template*, and the *Ontario Guide* all reference FireSmart. All but two are connected to FireSmart.

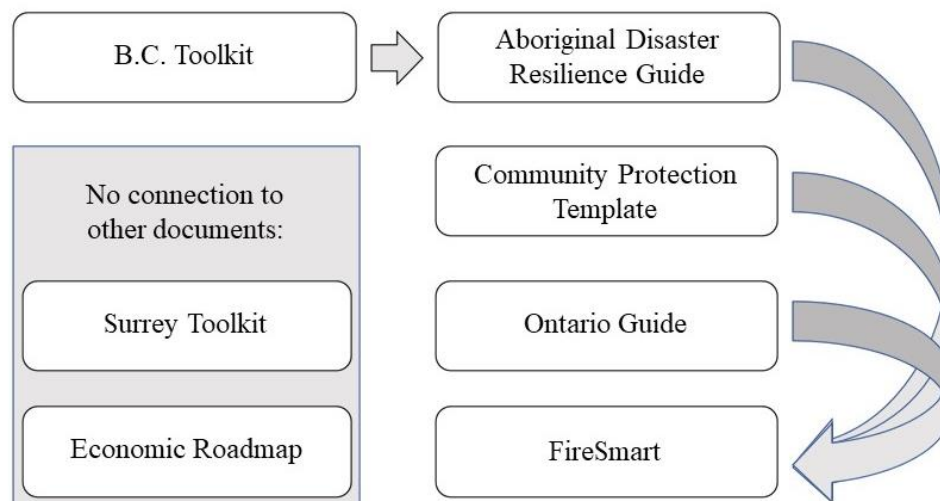


Figure 4.1 Relationships among wildfire management documents

#### 4.1.2 Representations of SIFs in Wildfire Management Documents

Throughout the seven documents, references to SIFs varied considerably. All documents are intended to support development of community-based wildfire plans; since disasters are inherently social events, it is not unreasonable that social aspects of wildfire could be addressed. The most commonly represented SIFs throughout these documents were disability/health status, age, culture/ethnicity, and economic status/income. Majority of the references to culture were Indigenous specific. The remaining SIFs (citizenship/immigration status, education level, faith-based identities, language, place-based identities, sex/gender) were addressed less frequently. There was no evidence that sexual orientation was considered in any of the documents analysed.

The occurrences of SIFs in the documents are summarized in Table 4.2. This table distinguishes among three types of occurrences: 1) *None*: there was no mention of this SIF; 2) *Mention*: an SIF was mentioned but there was no elaboration or in-depth discussion of the SIF; and 3) *Meaningful*: a SIF was mentioned and then the document elaborated on how it might complicate or differentiate experiences of wildfire or helped its audience gain a deeper understanding of what actions could be taken to account for said SIF. For instance, if a document simply advised its readers to consider the elderly in evacuation plans, this was considered a mention. Alternatively, the *Aboriginal Disaster Resilience Guide* suggests that “maps can also be very effective ways of visually explaining a disaster plan in communities that have low literacy skills” (Aboriginal Disaster Resilience Planning, 2015a); this was considered ‘meaningful’.

This analysis also noted instances of intersectional awareness. This could have meant using the term “intersectional(ity)”, providing a definition, or application of the concept in any way. Just two examples were identified, both from the *Aboriginal Disaster Resilience Guide*. In one of the examples, it states “You should review your findings and consider how different resilience characteristics might influence each other, either increasing risk or reducing resilience. For example, having the first response facilities located in an area of high fire or flooding risk might decrease a resilient first response ability. Or a low number of Elders participating in community events might combine with low hazard awareness, putting those seniors at even greater risk during a disaster” (Aboriginal Disaster Resilience Planning, 2015a). In neither case was the term

used, though in both cases, attention was brought to how overlapping SIFs or other social considerations can complicate a wildfire experience, including preparation for, or recovery from, such an experience. While neither example is pointed, the *Aboriginal Disaster Resilience Guide* demonstrates the type of nuanced considerations community members can make to ensure that all community members are being considered holistically and via an intersectional lens.

Table 4.2 Summary of social identity factors in wildfire documents

Document → Social Identity Factor ↓	FireSmart	Planning Toolkit	Economic Roadmap	Community Protection Template	Aboriginal Dis- aster Resilience Guide	Surrey Toolkit	Ontario Guide	Total
Disability, health status	Mention	Meaningful	N/A	N/A	Meaningful	Mention	Mention	46
Age	Mention	Meaningful	N/A	N/A	Meaningful	Mention	N/A	109
Citizenship/ immigration status	N/A	Mention	N/A	N/A	Mention	N/A	N/A	5
Culture, Ethnicity	Mention	Meaningful	N/A	Mention	Meaningful	N/A	N/A	89
Economic status, income	N/A	Meaningful	Mention	N/A	Meaningful	N/A	N/A	13
Education	N/A	N/A	N/A	N/A	Meaningful	N/A	N/A	6
Faith-based identities	N/A	Mention	N/A	N/A	Meaningful	N/A	N/A	17
Language	N/A	Mention	N/A	N/A	Meaningful	Mention	N/A	15
Sex/gender	N/A	Mention	N/A	N/A	Meaningful	N/A	N/A	12
Sexual orientation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
<b>Total SIF</b>	3	8	1	1	9	3	1	

Note: N/A = no mention of this SIF; *Mention* = SIF was mentioned but there was no elaboration or in-depth discussion of this SIF; *Meaningful* = SIF was mentioned and included elaboration on how it might complicate or differentiate experiences of wildfire. The column on the right includes even minor mentions which may inflate the appearance of emphasis on some SIFs.

#### 4.1.3 Exemplars of SIF Representation in Wildfire Management Documents

Table 4.2 shows that the *Aboriginal Disaster Resilience Guide* and the *B.C. Toolkit* are the most attentive to the widest variety of SIFs. The following provides examples which demonstrate how specific SIFs can be incorporated into community-based wildfire management planning guides.

The *B.C. Toolkit* is notable for a few reasons. The first is that it mentions specific SIFs (age and disability) as important considerations in the planning process, being particularly mindful of the particular challenges that children, youth and seniors may face. Further, it regularly suggests engaging Elders in the community to support the planning process and enhance overall engagement. The second is that it urges its audience to identify and examine assumptions to help “in framing the overall planning context by describing the planning considerations that are assumed to be true” and then to “validate or confirm these assumptions throughout the planning process” (Emergency Management British Columbia, 2019, p. 18). The document encourages planners to think widely and holistically about the community of interest; it describes an example where planners may assume most residents will have access to a private vehicle for evacuation purposes, to think critically about if that is in fact true or not and make plans accordingly. Questioning assumptions is an important step in the learning process (discussed further in Chapters Five and Six). Third, it directs readers to other guides that can enhance sensitivity and awareness to specific SIFs: one regarding emergency planning for people with disabilities (Disability Alliance B.C., 2016) and another – the *Aboriginal Disaster Resilience Guide*, the other exemplar in this discussion.

The *Aboriginal Disaster Resilience Guide* was the most robust in its consideration of SIFs among all document reviewed. The *Aboriginal Disaster Resilience Guide* routinely encourages its audience to consider housing, income, language, age, disability, education level, gender, and several other SIFs and social considerations. For example, it suggests ensuring signage is posted in multiple languages if appropriate and the use of maps and imagery to visually communicate disaster plans to those with low literacy levels. There are also regular reminders to consider and engage people of all genders. For example, the *Aboriginal Disaster Resilience Guide* makes specific recommendations to 1) establish plans to support women fleeing violence; 2) conduct community surveys with people of differing genders to “help identify gendered differences in understandings of local environments” (Aboriginal Disaster Resilience Planning, 2015a); and 3) engage both men and women’s community groups in the planning process. The *Aboriginal Disaster Resilience Guide* goes beyond simply recommending engagement of diverse groups, addressing issues such as food and energy access, access to green space, mental and physical health services (including addictions), and people who are or were recently incarcerated. The

*Aboriginal Disaster Resilience Guide* does not necessarily provide answers or specific direction on how to proceed given these many factors. Rather, it prompts its readers to assess the unique context of the community in question and take what is learned into consideration when developing wildfire management plans at the community level, encouraging, and entrusting the community itself to develop strategies that will fit best for themselves.

This section has focused on social identity factors in the wildfire management documents that were reviewed. The next section maintains focus on SIFs but shifts to understanding how they affected the interview and workshop participants' experiences of the 2015 wildfires in Northern Saskatchewan (SK).

#### **4.2 Social Identity Factors in Participant Experiences of Wildfire**

Community members from Napatak, SK and Wadin Bay, SK were engaged in both semi-structured interviews and a workshop. Eighteen community members took part in the interviews; of these 18, six returned to participate in the workshop. Table 4.3 provides some demographic information about the interview participants. Detailed demographic information about the workshop participants is not included to protect confidentiality due to the small size of the group.

The interviews began with participants describing themselves (depicted in Figure 4.2). I first asked participants to describe themselves and their roles as an open-ended question. Afterwards, I provided several word clouds to prompt participants to think of themselves and their experiences in a holistic way, for example, not limited to employment roles. Throughout the interviews, we returned to these descriptions of self; specifically, the interview guide (Appendix E) was designed to foster discussion about how participants' identity factors influenced their experiences. In some cases, a SIF was named and discussed more explicitly; in other cases, it was implicit or assumed. In this research, 'experiences of wildfire' refers primarily to the times when wildfire threatened the communities – the response stage of the disaster management cycle. However, as this research is concerned with the process of learning as a community, it is also important to pay attention to the times before and after (the mitigation, preparation, and recovery



stages) as well. Hence, this analysis and the examples that follow are drawn from before, during and after the wildfire event in 2015.

Table 4.3 Demographic information of interview participants

Total Interviews		18
Community	Napatak	10
	Wadin Bay	8
Gender	Men	7
	Women	11
Age	20-39	2
	40-59	8
	60+	8
Cultural Background*	Euro-Canadian	10
	Indigenous	4
	Canadian	3
	Unknown	3
Type of Residency	Full time resident	9
	Part time resident	9
Length of Residency	0-10 years	1
	11-20 years	3
	20+ years	8
	Unknown	6

\*The total number under cultural background exceeds the total number of interviews because some participants identified as belonging to more than one cultural group.

The key SIFs identified through the interviews and workshop included socioeconomic status; geography; gender; and age. Notably, while these four SIFs are discussed discretely below, in reality they do not exist independently. Identity factors overlap and intersect with one another. Section 4.2.2 provides a description of a few examples where participants emphasized the intersectional nature of their experiences.



Figure 4.2 Word cloud representation of participant self-descriptions

#### 4.2.1 Key Social Identity Factors in Experiences of Wildfire

##### 4.2.1.1 Socioeconomic status

The interrelated factors of income, education (including specialized knowledge), and occupation (collectively referred to as socioeconomic status) were significant influences on the experiences of participants; many participants linked the education and skills (in particular leadership skills) drawn from their formal education and occupations to their experiences before, during and after the wildfires. Further, many recognized that their income (and how it was derived) played a role in their experiences as well. How this SIF impacted their experiences was diverse. In many cases, those with extensive skills and education in a career field allowed them to navigate their experiences with confidence and skills drawn from these careers. Within the participant group, 13 of the 18 had some type of post-secondary education, including technical diplomas and

graduate degrees. Several also had long careers culminating in specialized knowledge and leadership experience (regardless of formal education levels).

For some interviewees, these skills and education were from the pertinent, interrelated fields of wildfire management and forestry, which translated into practical abilities to mitigate and prepare for wildfire. One interviewee had more than 25 years' experience in the forestry sector; another worked in fire management for more than 35 years. Both of these interviewees expressed a relatively stronger sense of safety and knowledge when it came to the threat of wildfire. One participant stated:

Prior to the 2015 event I felt safe [because of] my occupation, I knew what they were doing, and we felt that we had a primary plan for getting out on the highway, or we had secondary plans for [getting out] by water...we always have backups. [P14]

For some, the skills and education to confidently navigate these experiences came from fields completely unrelated to wildfire. One participant connected her role in a caretaking profession to their wildfire experiences, referencing the transferability of skills from their professional life to community wildfire planning and leadership. Referring to herself as a 'caretaker', she felt responsible for "looking after the community" [P4]. She stated:

I felt a responsibility and I felt that was a fairly heavy weight, but being in the role that I was in, and just my nature, I took it upon myself to make sure that people were safe, the community was safe. [P4]

Drawing on her employment experience, she was able to take a leadership role in the community with skills in communication, planning, public engagement, and crisis management. Still another participant drew on their advanced education and experience in the field of education: "I took skills as an instructor and a teacher, and I used it so that I could help people realize their potential and that was huge" [P7]. These examples show how those with diverse educational and employment experiences were able to transfer and leverage their skills and knowledge to be able to prepare for, respond to and recover from wildfires in unique ways.

Preparing for, responding to, and recovering from disasters has economic impacts as well. In this case, socioeconomic status impacted some participants' experiences of wildfire by allowing or prohibiting some mitigation actions. Prior to the wildfires in 2015, many residents took measures that required a degree of financial investment, such as installation of rooftop sprinkler systems. One participant cited an expense of several thousands of dollars to execute the mitigation plans they made for their property.

#### 4.2.1.2 Geography

Geography refers to where someone is from and their identification with and relationship to a specific place. Geography as a SIF was expressed in a couple of salient ways: 1) in relation to full time or part time resident status within the community, and 2) their identification as a Northerner.

Participants identified a distinction between full time residents and part time or seasonal residents – 14 of the 18 participants mentioned full time/part time status. Overwhelmingly, participants from both communities recognized the differential impact a loss of property would have on full time residents. Several part time residents expressed that even if their property was lost in the fires, they would likely recover financially. One such participant shared:

If we had lost everything our lives would still carry on. We still had our [other] home ... Sure, we would lose our summer place, ... but we still had a home to go to. I guess [it helped] just knowing that we had another place and being financially comfortable. [P3]

Another offered: “We had another place to go. We didn't lose our house; we didn't lose anything. Some people in the community ... because theirs' was actually a house, not a cabin, they were just frantic” [P2]. In some cases, both a primary residence and livelihoods were based in the area and therefore at risk.

Resident status was influential in other ways as well. Many expressed gratitude toward full time residents, of whom many were leaders in mitigation efforts and were also heavily represented among those who stayed in the communities during the fires. One seasonal resident stated, “For

me it really brought in more of a sense of community. I was extremely thankful to the people who had stayed behind and helped...you never have that appreciation for your neighbors unless something tragic happens” [P11]. Among the full-time resident participants, there was a greater emphasis on self-sufficiency and desire to defend their property; both self-efficacy and self-sufficiency were prominent among full-time residents. Some participants expressed a division between full time and part time residents in less positive ways, noting that part time residents’ voices are not always valued equally or may not have equal access to information or decision-making:

There’s definitely a clique with the local people that live there. They discuss matters amongst themselves a lot, and they generally drive the conversation at the meetings... they’ve all met and they’re all friends, they all live together and we’re kind of like the outsiders, the people who come there for vacation. [P5]

Further, full-time residents were more likely to identify as ‘Northerners’. While none of the participants explicitly defined what Northerner meant in terms of specific geographic boundaries, they described identifying as a ‘Northerner’ as being familiar with and closely connected to the landscape and ecosystem; having a familial history with the North; being accustomed to being isolated and threat of wildfire; and being accustomed to and prioritizing self-sufficiency. One participant framed it as such:

We like the North; we understand the North. We understand issues associated with living here, the perspective that you're living in an interface area where you're actually in the forest. So, you're very susceptible to wildfire, and that's something we've become accustomed to. [P8]

Another participant identified a distinctiveness or social distance as a Northerner from the rest of Saskatchewan, stating,

I really thought that we were going to have some kind of a debrief and that Government would be doing that, because we went through a lot of frustration, this was like half of Saskatchewan under threat of burning down! That affects you, but it was like it never

happened... I just think talking about that kind of stuff after a disaster it's just so people can process stuff and then at least you feel like what you went through was meant something to somebody and it was important, like that you're important I guess, because it was almost like, "Yeah, whatever. People in Northern Saskatchewan, yeah, whatever". Like, it just kind of reinforced that attitude that I thought anyways, that it was like, people down south don't really care that much. [P10]

Geography, specifically identifying as a Northerner, was sometimes interwoven with cultural identity as well. Several Indigenous participants noted their connection to place, the North, and their specific community as a long historical, spiritual, or cultural connection. These participants identified a connection to place that was rooted in family history, traditional practices, and connection to the non-human community. One participant cited her familial ties to the nearby lake and landscape noting that she lived very close to where one of her parents was born. She discussed being able to live off the land and harvest wild medicines. She stated:

I see myself as Indigenous, a Northerner. I love being a Northerner. I do a lot of stuff on my own, I would say self-taught. I want to be able to like transfer that knowledge to the younger generation. So, I see myself as a knowledge carrier in that way. ... I'm a community member, but in a different way – I'm a member of the land community. So, I interact a lot with the different non-human parts, like the birds, the animals, the plants, the trees, I'm very close with that. [P10]

Another participant shared, "I'm a Northerner, like true North... That's just who I am. I have a good knowledge of medicinal plants and boreal forest... I'm a fisherman, hunter, tan hides, and do traditional sewing" [P7]. For these participants, this part of their identities helped frame the way they prepared for and responded to the wildfires – though not necessarily in a uniform way. The influence of a Northern and Indigenous identity factor was not deterministic but did inform how they made mitigation, response, and recovery decisions.

#### 4.2.1.3 Gender

In this study, participants were asked to describe their gender using an open-ended question. Of those who answered, all used the terms ‘male’ or ‘female’ to describe their gender. It is often the case that ‘female’ and ‘male’ are used interchangeably with ‘woman’ and ‘man’ although technically, the former describes biological sex, and the latter describes gender. In this discussion, gender will be discussed using the terms ‘men’ and ‘women’ to focus on gender and not sex. Further, it is important to note that gender exists on a spectrum and is not a binary (with *only* men and women), however none of the participants involved in this research identified themselves in other ways.

Traditional gender roles, responsibilities and expressions are often mirrored in other SIFs; for example, in the case of the study communities, there were a number of people working in the forestry sector, fire management and related professions. These professions tend to be male dominated; for example in 2016, women made up only 17% of forest sector workers despite comprising 48% the total workforce in Canada (Wyatt et al., 2021). This was reflected in the participant group. This intersection of gender and employment experience was evident in the experiences of Wadin Bay residents. Several participants discussed the experiences of those who remained in the community during the wildfires. Once an evacuation order was in place, several residents chose to stay to fight the fires. The majority of these residents were men, having wildfire, forestry, and pertinent technical experience and knowledge from their professional lives. These people stayed with the intention of safeguarding their community against fire in consultation and communication with official fire management officials. They focused their efforts on the physical and technical aspects of staving off the wildfire from entering the community. Those few who remained and identified as women took on distinctly different roles. The few women who stayed were the primarily the ‘camp cooks’. This was demanding, stressful, and isolating work. One participant shared her experience working to support those who remained in the community for about two weeks, that it was exhausting and challenging. One participant recounted the challenges of trying to prepare meals for a group: “There were many challenges...Coming from a kitchen point of view, there were lots of challenges...Because with

no power, there's no stove but there's also no refrigeration" [P15]. She recounted another story with a bit of laughter:

I remember coming home one day because we were done with the meal prep and everything, and the boys were out doing their thing... And I remember coming home and thinking, I'm just going to sit down and watch TV. And I sat on the couch, and I turned on my TV and my dish didn't work. Like, what the heck? I picked up the phone and I phoned Shaw satellite and they said, 'ma'am, do you realize you're in the middle of the forest fire?', 'Yes, I realize I'm in the middle of a forest fire!'... [I replied] 'Hook up my service because I'm here and I want my TV!'.

Although this story was told with levity, this participant discussed the hard labour and stress of the situation. She was not alone in telling stories that demonstrated the intensity of their experience with a backdrop of humour or exasperation. Stories from both men and women were often told with strong emotions, sometimes nervous laughter and even tears.

The women in the participant group also talked about care work in the form of childcare responsibilities and the tensions that arose:

I knew at some point I'd be needed. I just wasn't sure in what capacity. When I was able to talk to [someone in the community] later that night, he said that things were bad. They had a small crew here and we were doing everything that we could. [One woman] was 'chief cook and bottle washer' and she was doing it all for a crew of 10 men. And if I could come home, it would be greatly appreciated. But if I couldn't, he also understood, but stressed to me that I was not to bring my kids. They had to stay behind. [P15]

Women were often in coordinator and leadership roles as well, discussing the support work they provided to ensure others were cared for and included. Similar to geography, gender was not a determining factor in participant's experiences, but trends were evident that suggested that traditionally masculinized work such as firefighting was more so the domain of the men and traditionally feminized work, such as care work and behind-the-scenes coordinating were often the domain of women.



#### 4.2.1.4 Age

The nature of wildfires is such that multiple hazards and challenges exist for the very young and the elderly, such as evacuation challenges and smoke exposure. During evacuations in Wadin Bay, this was a determining factor in who stayed and who did not: “[Older community members] were asked to leave the community... I think they realized that because of who they are, because of their health problems, like, bottom line, their age, they were a liability that we couldn't worry about” [P15]. Age wasn't only a factor during the wildfires. In the mitigation and preparation stages, age influenced community members as well. Much of the mitigation work is physically demanding, prohibitive for some older residents or those with health challenges. One participant shared:

I know we probably should have sprinklers on our roof and all that, but we're probably not going to do it. We're older, we're not going up on the roof to install them, and we're probably not paying anybody to do it, so ... We accepted the fact that if we lose it, we lose it, right? [P3]

Two participants' responses seemed to contradict one another. An older participant spoke about the need to have more young adults involved in the community, wildfire management work in particular:

There's a lot of younger people coming in now, but initially it was just more retired people. Now there's a lot of younger people coming into the community. That have children. So, it's getting to be more of a full-bodied community...Biggest problem if you ask me right now is the young people, the kids are not taking an active role in the community and that's got to change and that's sort of what I'm kind of pushing towards right now. Somebody's got to take over. [P6]

On the other hand, a younger participant shared, “if younger people come in and they have new ideas and new ways of thinking, they kind of fight it. And it makes the younger people not want to attend those meetings. Cause what's, what's the point if your voice isn't heard?” [P11]. While the results cannot speak to the age profile of those engaged with wildfire management in each of

the study communities, it was clear that those that participated in this wildfire research tended to be older. This may speak to availability in general or specifically, engagement in wildfire management issues. In either case, these participant's perspectives indicate this might highlight a worthwhile conversation for the study communities in the future.

#### 4.2.2 Intersections of Social Identity Factors in Experiences of Wildfire

While certain SIFs can be parsed out as particularly prominent factors in these participants' experiences, most often, participants' stories and examples tended to draw on not just one, but several intersecting identifies. In this first example, the participant emphasized her identity as an educated, Indigenous, Northerner. She had a strong connection to the land and was initially hesitant to make changes to her property that would alter the natural landscape but reduce the risk of fire. However, she stated:

Once I read that [FireSmart] book...I did some drastic things that I really didn't want to do, but in the long run it was like, can I afford to lose this beautiful home? And do I want to risk it? And you know no, there's lots of trees around here besides the ones that I cut down. So, I just kind of compromised, not just because I really value where I live, but I wanted to protect my home too. [P10]

There seemed to be a tension between preservation of the forest and physically altering the area to reduce the risk of wildfire on her property. As a self-identified 'self-taught' person, however, she took it upon herself to learn more about FireSmart principles. Through the experience of wildfire, the tension between the technical and physical recommendations from FireSmart and her own personal and cultural values were negotiated.

In another example, a woman emphasized her identities as a Northerner, a mother and caretaker, and an educator. We talked at length about how past personal challenges prepared her to take initiative, be resourceful and problem solve; her stories drew upon various parts of her identity. In one story, she shared how she and a few others arranged to set up an impromptu food bank, in response to observing that evacuees from nearby communities had set up temporary shelters on the outskirts of their community. Drawing on skills as an educator, she sought to empower

people to contribute to the effort; drawing on experience as a caregiver she felt compelled to meet people's basic needs; drawing on her identity as a Northerner she had the knowledge to understand the complex broader context of the evacuees camping outside the community and the challenges they and those from within the community were facing.

Lastly, one participant highlighted the ways that her age and her part time resident status in the community led to a weaker sense of social cohesion, and ultimately, a disengagement from FireSmart initiatives and mitigation efforts in general. Her sense of disengagement stemmed from being a part time resident: "most summers we're not there all summer...and that to me is some of the issue; they don't really reach out to us part-timers" and also her age: "it makes the younger people not want to attend those meetings, because what's the point if your voice isn't heard?" [P11].

In these three cases, it is two or more factors that are contributing to the ways these participants take mitigation and response actions. Taking an intersectional lens helps to better understand the influences on community level mitigation efforts.

This section noted that four SIFs were most salient in the participant data, including socio-economic status, geography, gender, and age. In comparison, the document analysis indicated that the wildfire management guides mainly focused on disability/health status, age, culture/ethnicity, and economic status/income, highlighting incongruencies between participant experiences and SIFs focused on in the documents. These differences indicated that the guidebooks were not addressing the pertinent SIFs in the study communities. Therefore, during the PDL framework development, more focus was placed on community self-identification of pertinent SIFs and strategies to address them, rather than prescribe strategies to address SIFs that may or may not be influential.

### **4.3 Social Strategies in Participant Experiences of Wildfire**

Social strategies are defined as actions, plans, or approaches where the means or the goals are social in nature. Through interviews and a workshop, participants shared stories and descriptions of the strategies used before, during and after the 2015 wildfires. Constant comparative analysis

supported the process of identifying the primary strategies used by the two study communities. Five such strategies are detailed below: *Communicate*, *Lead and Govern*, *Engage*, *Educate*, and *Collaborate*.

#### 4.3.1 Communicate

Here, I use *Communicate* as an umbrella term; there were several specific sub-strategies that participants highlighted, including the importance of building robust internal and external communication networks and the use of various communication methods and technologies. *Communicate* was one of the most prominent themes throughout the interviews and workshop and was discussed in relation to all phases of the wildfire management planning cycle: mitigation, prevention, response, and recovery. When asked about the key lessons learned from their experiences of wildfire, 11 of the 18 participants cited communication issues.

Participants overwhelmingly agreed that communication within the communities was essential to preparing for and responding to wildfire. One participant said:

Communication, communication, communication... We had done a lot of the groundwork and that's why we were so well prepared. Without that communication and coordination system in the community, it would have been completely different. You know, people would've been panicking and going in all directions. [P2]

People in Napatak and Wadin Bay regularly faced other challenges and emergent situations. For example, bear sightings are not uncommon in the area, nor are power outages. One participant from Napatak detailed a previous experience with an emergent situation, a wash-out of the only road into the community:

A few years before when we had the flood...and I was on site, so...I took charge of it.... Each day, twice a day, I'd go out and I'd measure the water to find out whether it was rising or lowering. And I'd send out a text twice a day... But you could just see people relax after a day or two of this. Fewer people were coming out [ to check the road]. They knew that twice a day they're going to get an update report. And that I told them I was

contacting [the Saskatchewan Ministry of] highways... So, everybody knew that somebody was paying attention and everybody in the community didn't have to come out themselves and talk about this and figure out what we had to do. There was somebody taking care of it and that, that sense through the communication system was so important... People panic, people don't know what's going on. They want to be reassured, they want information, so they know what's going on and they want to be reassured that somebody's taking care of their jobs, so they don't have to worry about it. [P2]

This event helped raise awareness about the necessity of effective communication within the community and spurred residents to adapt their practices. The importance of communication had already been highlighted through these prior challenges.

Both study communities used adaptive and creative communication strategies, despite numerous challenges including a sizable seasonal population and unreliable internet services. To overcome these challenges, various methods were used including community newsletters and notice boards. With smartphones now near-ubiquitously used, a 'phone tree' system, mass emailing systems and the social media were all used to communicate quickly among community members. Again, some these strategies were not always completely reliable as they depend on cellular and internet service. In response, both before and during the wildfires, sometimes the most effective means of communication was face to face:

We did driveway meetings. We did just lots of conversations, just when you're out walking, just talking to people or people would phone. So, trying to share key information, and dispel any rumors or myths...the biggest thing in a time of crisis like this is effective communication. We haven't resolved it perfectly because we still don't have good cell service. We've talked about maybe getting walkie-talkies, or some other kind of system, for our community to – so that when you do have a team that is running around in ten different directions that they can at least communicate with each other. [P4].

Effective communication also enabled people to share resources in order to meet basic needs (such as food and power). In both communities, during the time of the wildfires, on-site residents coordinated with those not present to retrieve goods from cabins and homes and to have supplies delivered when possible.

Effective communication with external bodies was commonly referenced as well. Throughout the interviews, participants referenced a wide range of external authorities and organizations that influenced their experiences in the mitigation, response, and recovery stages. Participants noted that simply clearing deadfall in the treed areas of the community was complex because within the community boundaries, there are lands that fall in various provincial and federal jurisdictions, with varying funders and policies about which areas can be cleared or altered and how to get permissions to do so. Speaking about brush clearing, a community member shared:

I do believe there's lots of funding out there that the federal government and the provincial government have done towards preventing wildfires. We did have a bit of a crew come in to do some cleanup, I'm going to say that was about 2013, a crew of five people and they spent a month or two and it looked beautiful, and also in the provincial park. So, that's a thing we have to work towards. The parks attitude is just let the trees fall, die and decay and, and that's what they do, but that is fuel just laying down, you have to clean up. So, we have...things we have to work around to keep everybody happy in the park, as a community, municipal services, the government...I think we'd just like to see more cooperation between our provincial government and the federal government and FireSmart. I think there's some communication that is lacking there and that would be our biggest obstacle in my opinion. [P16]

Likewise, during the wildfires, there were numerous external actors and lines of communication to potentially maintain. For example, as Napatak residents anticipated the wildfires approach their community, they evaluated various evacuation options; one of these options was escaping by boat via their two boat launches. However, with little to no notice, both boat launches became occupied and therefore inaccessible to residents: “We got informed about the army coming about two hours after they arrived [and] we got no notification of the floatplanes using the dock...

there was no notification, no communication with us at all” [P4]. In Wadin Bay, where an evacuation order was in place, residents who stayed to fight the wildfires were concerned that if they left to retrieve essential supplies in nearby La Ronge, they might not be allowed back: “I always got worried when [someone] would leave the community, because I'd be scared that we had a new guy on the checkpoint, and he wouldn't let them back in” [P9]. These are just a few of the many examples cited by participants that demonstrate the complexity of intra-agency communication – especially during a wildfire, but even before and after.



Figure 4.3 Boat launch in Napatak

Photo credit: Tina Elliott

During the wildfires, accessing accurate, reliable, and timely information about the situation was a challenge. For many, Lac La Ronge Indian Band Chief Tammy Cook-Searson was their trusted source of such information; nearly one-third of participants cited her as being a key source of timely, reliable information: “[She was] the most important communication method for me and many people in our community...If she hadn't filled that role, I think there would've been a lot more chaos certainly in the Band, but in the whole tri-communities area.” [P2]. Participants *en masse* expressed a desire for more information during the wildfires; the gaps in such information communication led to negative outcomes, the impacts of which were regularly discussed amongst participants. Approximately half of participants emphasized the stress and other impacts of misinformation and unconfirmed reports about their communities. One participant shared: “While I was evacuated, I registered with the Red Cross, but didn’t frequent the centres which

had been set up for evacuees because the rumours that were milling around those places just unsettled me, I couldn't handle that stress" [P9]. Another participant recounted his story as such:

One night someone posted that they personally witnessed Wadin Bay on fire and all the cabins were burned down...people were phoning us and crying and saying their cabin's gone... And so, it was a real panic for a while there, and people were really upset. ... it's like somebody just slugged you in the gut...And for a few hours we believed it. [P5]

To address these gaps, local people employed adaptive and multifaceted communication strategies to help them make more informed, timely decisions about their safety and well-being. Where there was a lack of communication or miscommunication, people struggled to feel safe, access supports, and take prudent action.

#### 4.3.2 Lead and Govern

Established local leadership structures (E.g., the Cabin Owners Association or Community Association) in each community supported the wildfire management goals in Napatak and Wadin Bay leading up to, during, and after the wildfires. In both communities, a FireSmart subcommittee or sister organization was established for wildfire management purposes. These leadership structures facilitated communications, education, planning, decision-making, and action. In these communities, these roles and responsibilities are filled on a voluntary basis and were instrumental to achieving the collective goals of the community.

The efficacy of the existing governance structure therefore influenced how well wildfire management goals could be executed. One participant stated it as such:

The Community Association is the centre of the hourglass, and so they need to be able to work very well with [key external authorities] above them, and they need to be able to work very well with the community below them. They are the center of that hourglass. [P4]



Leadership in both communities was heralded by the majority of participants, who cited many successes. However, in some cases, participants discussed how pre-existing tensions in the community perpetuated a sense of marginalization and prevented participation in the wildfire management conversations. One participant shared:

If we kind of were a little more open, welcoming...I would have attended more of the FireSmart meetings and would have been able to maybe help more or to do more things safely beforehand saving other people a lot more work. So, I think if we have everyone came together...I would have been more informed and would have known better what to do or how I could help. [P11]

For these participants, feeling a sense of alienation from ongoing leadership prevented them from engaging with wildfire management activities and discussions. In small communities such as Napatak and Wadin Bay, it is likely not feasible to create a separate body solely for community wildfire management, especially given the small population and the voluntary nature of such roles. Rather, this concern speaks to the importance of a socially healthy and inclusive community governance structure in general. Despite some social tensions, participants *en masse* expressed deep gratitude to those who labour – in whatever way – to make the community safer. The same participant that expressed social tensions also shared:

I really appreciate the people who stayed behind and helped. They didn't have to do that. They didn't have to save my cabin; they didn't have to save other people's cabins... So, I am extremely thankful for them and still am today. I was thankful right after it happened, but I still think about that often and how they saved our butts. [P11]

The gratitude expressed in many of the interviews was directed at the group of actors (not individuals) in each community that made strides toward prevention and mitigation and links were made between this group of actors and the community leadership and governance bodies. The benefit, it appeared, of using established governance structures meant residents of Wadin Bay and Napatak were able to maximize existing momentum and mobilize their wildfire mitigation efforts more efficiently. The shortcomings outlined above might be overcome through

various means, such as improved education, engagement, collaboration and importantly a stronger sense of social cohesion.

#### 4.3.3 Engage

*Engage* refers to ongoing actions of individuals that seek to connect and rally community members around wildfire management goals. It can be as broad as fostering a sense of social cohesion and as targeted as encouraging individuals to take specific mitigation efforts, such as clearing brush. Engagement strategies were demonstrated in both study communities, particularly by those in leadership and often through the governance structures and FireSmart.

Majority of participants shared statements of deep commitment to the community in general and a sense of responsibility to contribute meaningfully to the collective safety and well-being of the community. More than half of the participants had previously been involved in the community organizations. Fostering a sense of connection, belonging and trust was a priority for those in leadership roles, who often referenced the ways that they sought to include people who were not typically involved:

We deliberately tried to create a very diverse [executive, with] different types and groups of people in the community. As a Community Association executive...we had a really good finger on the community and connections to almost everybody in the community through that. [P2]

Participants noted that engagement was more successful when individuals were able to find ways to participate that fit their skills, knowledge, or standpoint: “The challenge is to engage people in a role that they're interested in, capable of contributing. And that's what was so good about [past] leadership, [looking] for what people can do rather than telling them what to do” [P2]. A key challenge to engagement is what some participants named “complacency”. In a conversation between two workshop participants, a Napatak resident noted: “We both agreed that buy-in is temporary... [Wadin Bay] is becoming complacent because there is nothing left to burn, and my community is complacent because nothing actually burned. It is a challenge to move forward on FireSmart and related initiatives” [P4]. This complacency can be exacerbated by the long-term

nature of large-scale goals; a participant from Wadin Bay estimated that the community had spent approximately ten years acquiring the equipment (Figure 4.4) and capacity that they have now. Building capacity in this context remains an ongoing challenge.



Figure 4.4 Equipment in Wadin Bay fire hall

Photo credit: Tina Elliott

At the same time, FireSmart was referenced as a means to encourage engagement. The program expressly encourages community events that serve the dual purposes of achieving wildfire mitigation goals (such as clearing debris in the forest) and community building. The program itself and the individual community members promote participation and engagement by pairing tasks such as brush clearing with a barbeque or social event afterward. Such events have been held regularly in each community for several years now.

#### 4.3.4 Educate

*Educate* refers to the intentional process of learning about wildfire, including formal and informal means. At the community level and with a focus on learning about wildfire, this can take a variety of forms which would most often is not going to resemble a formal, educational

setting. Rather, public education and awareness campaigns would constitute education, as would becoming familiar with the *FireSmart*, or even informal gatherings and one on one sharing of information. This strategy overlaps with others but is distinguished largely due to the importance given by interview and workshop participants. There are two primary ways education arose in the data: the first was the use of prior education through participants' careers or formal education (as described in section 4.2.1.1). The other was the education that participants sought out deliberately as a part of mitigation and preparedness efforts in the community; this is the primary focus of this section.

FireSmart was the primary source of education among the participant group. Some community members accessed training through FireSmart to learn more in-depth about the physical and technical aspects of wildfire in the wildland-urban interface. Those individuals were then able to transmit this knowledge to other community members on a more ad hoc basis. As official FireSmart communities, Napatak and Wadin Bay have access to various supports through the program, including financial and human resources. One Napatak participant noted that Napatak and Wadin Bay community members were already educating each other. She emphasized the value of that knowledge sharing, stating that Wadin Bay residents "are a wealth of knowledge to us" and the knowledge that comes from experience is "like an elder in a community" [P7]. Further, workshop participants likewise stated that they learned a great deal through connecting with people from the other study community.

A great deal of formal and informal education was evident and had been put to use. Participants often discussed education about physical and technical aspects of wildfire. For example, one participant accessed formal training through 'FireSmart school'. Another participant stated:

I learned a lot about fire itself and why FireSmart is a scientific approach to creating resilient structures. The idea of the ember storm as opposed to the actual flame front as being the key risks and preparing for that ember storm and the things that you can do, that you don't have to have a – I mean a fire-resistant house is ideal, but there's lots of other things you can do. Even without a sprinkler system, a house should be able to survive if it's properly prepared and your site is properly prepared. So that was a real revelation. So,

it gives you something that you can do and it's very specific. It's very well organized. We did a lot of work in educating our community about it. You can visually see how the community has become more FireSmart because of the efforts that many people are making, not everybody but many. [P2].

While these aspects of wildfire are indeed important, there was a notable lack of discussion about education from FireSmart regarding the social aspects of wildfire. This is not to say that participants did not speak about education on the social aspects of wildfire at all, but that learning about such matters can from within the community, self-initiated and self-directed.

#### 4.3.5 Collaborate

*Collaborate* involves ongoing attempts by community members to create and maintain a shared idea of the problem, then working together through a coordinated set of activities to address said problem. Collaboration was evident at various scales and with multiple people and groups including government organizations, other communities, and individuals. Collaboration with external bodies and individuals is relevant although the primary focus of this section, like the others, is collaboration within the communities themselves. This strategy is, in some ways, the final step in these series of strategies where *Engage*, *Lead and Govern*, and *Educate* set the stage for community members to work together to execute their plans. The interdependence of these strategies is discussed more in-depth in Chapter Six.

Instances of collaboration were highly evident in the interview data and cited as a primary factor in their successes. There were many examples of collaboration cited, but participants shared stories about one example in particular: the impromptu establishment of a food bank and free store in Napatak during the wildfire threat. Napatak residents realized that evacuees from nearby areas such as La Ronge were setting up camps in areas surrounding Napatak:

There were also people who evacuated to Napatak that were trying to set up trailers, like in places that weren't inhabited around our community. So, for instance...the brush dump, or the gravel pit. So, what we did with that kind of situation, we'd say, okay, I have a vacant lot. You can park your trailer on my lot. And we'd bring them right into the

community and then they became part of our community...They needed help and they needed to be safe. [P7].

Both Napatak residents and the evacuees that were welcomed into the community sought supplies (e.g., food or otherwise) to meet basic needs. Residents responded:

One of our neighbors opened their garage to be kind of a pantry, so there was a fridge and a table there, and people who had extra food would just put it in there, and then people who didn't have food can go and help themselves. So, we would bring stuff to stock that with, and just things that we thought we might need in the community. You know, flashlights and headlamps, and we brought up whatever people thought they needed to get us through this...It was all kinds of things; just whatever people needed to feel safe and secure and that they had things under control, we would bring up. [P4]

What worked very well was our food bank that we set up because there was lot of people that were displaced from La Ronge, no place to go. And we were not evacuated here, so, we've got a lot of people from La Ronge setting up camps and campers and all kinds of stuff around here and they just made it by the skin of his teeth. So, we had a food bank set up and we probably had 70 or 80 people camped around the area that were enjoying our foodbank. So that actually worked out very well. [P6]

Beyond basic needs such as food and shelter, participants spoke about the emotional and psychological needs that were attended to through this community initiative:

Some neighbors, when they first started coming to our place, they looked, I don't know how to put it, they looked bewildered, scared, just didn't know what to do and stressed. Holy man, people's stress started coming out. People were asking, what should I be doing? What can I do? What can I do? You know? And panic, and I thought, oh my God, if we get panic in here, it's not going to be good. I just thought, okay, so how do we prevent a disaster from happening? ...So, we kind of thought, okay, well let's talk to them and see what they're interested in doing and what they feel they can do and how that would fit in. [P7]

We did have people who were here that were evacuated from the local area areas and extremely upset, crying and just didn't know what to do with themselves and 'well, we need some food' and it was like, 'well, here's the fridge'. [P7]

This is illustrative of the community level collaboration evident in the data. In the workshop, half of the participants identified collaboration as a top priority (see Table 5.1). Participants largely discussed examples and importance of collaboration in the mitigation, preparation, and response stages of the wildfire management cycle; far less focus was on collaboration in the recovery stage. Many participants shared stories about how people came together to execute mitigation goals (such as brush clearing) and preparation plans (such as acquiring a local firehall outfitted with water tanks, pumps, hoses and more). For some Wadin Bay residents, the process began many years prior when a wildfire came close:

It was in 2006 when we were evacuating. And at that time, we hadn't really thought much about forest fire and the fire didn't really come close to the community at all, but we were evacuated for 14 days. And that's what started us thinking about 'how can we protect our families and the community?'. [P9]

I think there was a bit of a naiveté...and then the 2006 fires hit us, definitely got us thinking about it. So, before our 2015 major event, we certainly had ample time... and we did the set ups over a period of approximately 10 years, we started buying a little bit of fire equipment and had everybody make that transition. The general thought was that we must take care of ourselves. And then we got a fire hall, we bought more equipment, and a little bit more training. [P8]

These residents worked diligently and collaboratively to prepare long before the 2015 wildfire season. This strategy continued during the 2015 wildfire event; a Wadin Bay resident said “during the fire what really saved us was the collaboration and communication between community” [P13]. The work done in the communities was a significant undertaking; any of the participants who spoke about such work did so with clear recognition that it took the efforts of a group of people – no one person was credited with the achievements.

As with the case of engagement, several residents discussed how different people had different resources, skills, or knowledge to share – among many of the interviewees, there was an unspoken goal of equity rather than equality, that is, that everyone does what they can to succeed rather than everyone does the same. One participant described how people overcame existing tensions in the midst of the wildfires stating “when the community is under threat, those people turned around and they joined in with the community. So, it was a really bonding experience which was which was kind of nice” [P6].

However, within the participant group there was a trend that linked *Collaborate* (arguably the most ‘actionable’ strategy) with the other strategies (*Communicate*, *Engage*, *Lead and Govern*, and *Educate*). In general, those who were more engaged in general, involved in leadership and governance, were more communicative, and those who benefitted directly or indirectly from educational opportunities, were also more likely to have collaborated and more likely to speak about collaboration as important. A pair of workshop participants noted that while “both communities came together to ensure everyone had food and other necessary supplies... [they both] had examples of community members feeling left out and that inclusiveness is key to keeping people working together collaboratively”. This observation indicates that those who are involved, communicating, and learning, will also be a part of and benefit from community collaborations while those who are not will likewise miss out on the benefits of such collaborations.

#### **4.4 Summary and Conclusion**

Through analysis of seven wildfire management documents; semi-structured interviews with 18 people with lived wildfire experience; and a workshop, I identified key SIFs and social strategies that shaped experiences of wildfire. Document analysis revealed that disability/health status, age, culture/ethnicity, and economic status/income were most commonly documented. Other SIFs such as citizenship/immigration status, education level, faith-based identities, language, and place-based identities were addressed less frequently or less meaningfully (or both). Interestingly, sex/gender was also rarely or minimally considered, while sexual orientation was not mentioned at all. In contrast, community members focused their attention on geography,



SES, gender, and age. It was evident that intersectional considerations were largely amiss in the wildfire documents. The exception to this was the *Aboriginal Disaster Resilience Guide*'s direction to consider the implications of multiple, intersecting social factors. This was a promising find particularly in light of the fact that participants in this study discussed SIFs in such diverse, nuanced, and intersectional ways.

Participants spoke primarily of five strategies used during the wildfires that enabled them to navigate the numerous challenges of the experience. These included *Communicate, Engage, Lead and Govern, Educate* and *Collaborate*. These strategies are mirrored in some of the more socially focused wildfire management documents that were reviewed. For example, the *Aboriginal Disaster Resilience Guide* suggests engagement strategies to target hard to reach groups such as youth. However, none of these documents provide a process through which communities can actively attempt to collectively learn from their own and each others' experiences to better prepare for future wildfire events. The focus of the next chapter is to articulate such a process.

## **CHAPTER FIVE: FRAMING A PROCESS FOR COMMUNITY-BASED POST-DISASTER LEARNING**

This chapter presents a synthesis and application of co-developed knowledge relating to the third objective: to stimulate a process for post-disaster learning (PDL) by co-developing a community-based framework focused on the social dimensions of wildfire to guide future community wildfire management plans. The chapter begins with sharing findings related to *mechanisms* for community-based learning – that is, instructions, processes, or guides – from the documents and interviews (5.1). The focus was on *post*-disaster learning, although I included mechanisms for learning at all stages of the wildfire management cycle. Next, I present the key themes from the interview data (5.2). These themes are distinct from the social identity factors (objective one discussed in 4.2) and the social strategies (objective two discussed in 4.3). They are conceptual themes that played an important role in participant’s experiences of wildfire and learning. These themes, together with the social strategies identified in Chapter Four, formed the foundation of the draft framework for community-based PDL (discussed in 5.3 and Appendix J). The last section of this chapter details the steps and results of the workshop in which these themes were refined and developed to form the revised framework (presented in Chapter Six).

### **5.1 The Mechanics of Learning**

The following discusses the results related to how learning could and did occur; in other words, I present results related to who, when, why, and how of learning post-disaster. These results are drawn from the document analysis, interview, and workshop data. Given a general lack of mechanisms for post-disaster learning, I have included relevant results for all stages of the wildfire management cycle.

#### **5.1.1 Mechanisms for Learning in Wildfire Management Documents**

Through the document analysis, I sought to identify all instances where learning was promoted, particularly after a wildfire event. Specifically, I noted concrete mechanisms for learning (such

as a guide or instructions), but also details about who to include, when and how to maximize learning, and specific learning outcomes, including how to measure learning. I also noted any cases where readers of the documents were directed to other resources to support learning. Of the seven documents reviewed, four do not include any substantial guidance for or acknowledgement of PDL (the FireSmart, the *Community Protection Template*, the *Surrey Toolkit*, and the *Ontario Guide*). In these cases, the guides suggest reviewing wildfire management plans regularly or drawing on previous wildfire experience. For example, the *Community Protection Template* directs its readers to provide an overview and description of past wildfire events, with attention to “key learnings from post-fire reviews and any activities the community has undertaken as a result [and to] describe any additional consequences, including impacts to the local economy, social impacts on citizens (including evacuations), and other consequences” (Union of British Columbia Municipalities, 2012). This, however, is the extent of any specific guidance offered. No process for such an undertaking is described.

Each of the remaining three documents (the *B.C. Toolkit*, the *Aboriginal Disaster Resilience Guide*, the *Economic Roadmap*) offers something notable and provides some insights on how to engage in a more formalized, community-based learning process. The *B.C. Toolkit* does not provide specific guidance but does encourage drawing on sources such as “official records, local archives and museums, service groups, or community Elders and long serving employees or residents” (Government of British Columbia, 2020). The *B.C. Toolkit* also directs readers to the *Aboriginal Disaster Resilience Guide* which explicitly suggests to “debrief following an event to learn from the experience and improve future response activities [to] provide important information about how and which messages and or services and responses need to be strengthened or adapted” (Government of British Columbia, 2020). Similarly, the *Aboriginal Disaster Resilience Guide* routinely encourages consultation with Elders and other knowledgeable community members who can draw on past experiences and includes multiple assessment guides which also regularly prompts readers to draw on past experiences (Aboriginal Disaster Resilience Planning, 2015a).

Finally, the *Economic Roadmap* suggests a three-step, post-disaster planning process for economic resiliency to be completed in conjunction with a review of the existing plan. Steps one

and two entail an impact assessment and identification of a lead on the process. Step three is to create a plan, stating “intelligence gathered through the economic analysis will serve as the basis for the development of the community’s long-term economic recovery plan. Specific action strategies and tactics should be developed to provide direction on economic recovery priorities.” (Hackman-Carty, 2019, p. 27). It suggests a timeframe (3-6 months post disaster). While it is not explicitly a ‘learning’ process, it suggests going through the process so as to “take advantage of the urgency surrounding rebuilding efforts and the existing momentum within the community” (Hackman-Carty, 2019, p. 26). In summary, there are instances within these documents that promote learning; however, they are insufficient to guide a process of PDL. They do not provide clear articulation of how a community might meaningfully and collectively endeavor to learn post-disaster.

#### 5.1.2 Participant Experiences and Perspectives of Learning

Participants were asked to discuss their perspectives and experiences of post-disaster learning; they were asked about what occurred and what would have been beneficial. The majority of participants voiced support for some form of post-disaster, collective learning. Among the interview participants, most agreed that sooner would have been better and that after a given time, the urgency fades and people seem to become less motivated to act. One participant put it this way:

Directly after the fire we recognized that the community was motivated, the momentum was there, and if we leave it for a year, we will lose that momentum...It certainly gets harder after that, harder to keep people motivated, harder to get buy-in to change ... as the memory of the fires evaporates, it just really gets harder and harder to keep the community cohesive and focused. [P4]

As a group, the general sense was that five years later – at the time of the interviews – the optimal time had passed. Several participants offered a more concrete and earlier timeframe, ranging from one month to two years, ideally within a few months of a fire event.

Numerous interviewees suggested that existing meeting times and social structures (such as the community association meetings) would provide a suitable forum for post-disaster, collective learning. In fact, participants identified that when limited PDL occurred, it took place in these forums. However, one participant noted “it doesn't feel open to everybody so even if I knew that they were doing a debriefing or meeting about it, I probably wouldn't have attended because I wouldn't have personally felt welcome” [P11]. This participant's words identified a possible problem: the potential continuation of existing social marginalization, that is, those who are already less engaged and connected may also miss the opportunity to participate in the learning and sharing post-wildfire. One specific challenge identified by participants was scheduling conflicts with part-time residents. However, participants also noted that the use of telecommunications tools could provide some innovative solutions to this challenge. At the time of the interviews (mid-2020), many people were becoming increasingly familiar with online communications methods due to the COVID-19 pandemic, prompting some ideas and discussion about how learning from experiences of the pandemic might be transferable to overcoming PDL challenges.

Participants spoke about their motivations for community-based PDL. The primary reasons given for interest in PDL included enhancing wildfire management within the communities; improving relationships with external bodies so as to improve wildfire management; and fostering opportunities to debrief at a personal level. When PDL did occur, it was primarily internal to the communities themselves and largely in informal ways: “a lot of that [sharing, learning, debriefing about the fires] happens sort of on the go and especially among the people who stayed and were permanent residents who decided to stay” [P2]. These ‘on the go’ learning occurrences were sometimes referred to as “driveway meetings” [P4]. In some cases, participants were motivated to participate in PDL to better connect with external bodies. Among the participants, many levels and branches of government were referenced for all stages of wildfire management. For the preparation and mitigation stages, community members frequently mentioned the obstacles navigating various jurisdictions, levels of government, and their respective authority. In the response stages, participants discussed confusion around evacuation orders and firefighting responsibilities. One Wadin Bay resident emphasized the desire for improved coordination and communication among authorities regarding a list of essential services. With respect to the

recovery stages, participants noted that official debriefing would have been welcome, but that it would have to be facilitated by those outside of the community: “I really thought that we were going to have some kind of debrief and that Government would be doing that because we went through a lot of frustration – this was like half of Saskatchewan under threat of burning down” [P10].

Finally, majority of participants expressed that they or others in the community experienced mental and emotional distress after the event, even describing it as a “traumatic event” [P8]. One Napatak resident shared: “It is etched in my brain now...I think I was traumatized for a while from it because it caused me stress every time I talked about it for awhile. Thank God it's not like that anymore, but I noticed other people were the same” [P10]. Several community members expressed interest in a more formal community debriefing to collectively address these impacts, and that there was a missed opportunity for providing feedback, validation, and healing. Some participants expressed that participation in the interviews – simply being asked about their experiences – facilitated a kind of recovery from the experiences:

I didn't realize that this [interview] was going to almost be like a debriefing because I know that you're interested in my experience... I don't feel like I'm trying to convince you... that validity that you're giving is really important and it's part of the healing process...that's very supportive. So just doing this study, asking these questions, listening to the answers ... is a really important thing to do and I guess that's kind of what was missing when this happened is we didn't get that...concern enough to listen to what happened to you and how did it go, tell me about how it affected you as a person and what did you think about...just even asking questions is important. Really important.  
[P10]

In general, participants expressed a desire for some form of collective PDL. Ideally, such a PDL process would occur within the first year of the event and be hosted within a welcoming and accessible forum. Goals of a PDL process would focus on enhancing various aspects of wildfire management within the community, improving relationships and communication with external bodies such as government, and debriefing personal experiences of trauma. Several participants

noted that simply participating in the research process supported their learning (e.g., P10's quote above) demonstrating that facilitated discussion about lived experience may help address some of the goals mentioned above.

## **5.2 Key Themes Related to Post-disaster Learning**

This section presents a synthesis of results related to the five key themes that arose from the interviews. Where relevant, data from the document analysis supplements the interview results to elaborate on the value and meaning of these themes. These themes include *Context* (5.2.1), *Inclusivity and Belonging* (5.2.2), *Connection to Place* (5.2.3), *Understandings of Resilience, Risk, and Vulnerability* (5.2.4), and *Capacity* (5.2.5).

### **5.2.1 Context**

*Context* can be understood as the specific characteristics of a community including but not limited to its physical geography, demographics, climate, political environment, economic situation, etc. This theme is distinct from others as it acts as an 'umbrella' the specific contents of which are to be defined by the community members. However, it is key as it recognizes the various unique factors affecting a community's or individual's experience of wildfire. For example, Napatak residents repeatedly noted that there are limited access and egress points and that in a wildfire or other emergency situation, this is an important consideration. In Wadin Bay, residents noted that having numerous residents with wildfire management experience was a significant influence on their experiences. Both communities were affected by unequal and inconsistent access to internet services.

Among the documents, most explicitly support in-depth analysis and assessment of such contextual issues; specifically, the *B.C. Toolkit* and the *Aboriginal Disaster Resilience Guide* are the most extensive in their prompts to explore such issues, primarily through various assessment guides mentioned above. The factors or community characteristics that might fall into this theme are best identified by community members themselves and can not be assumed to apply to all rural Canadian communities; therefore, this theme is a way that community members and those outside the community (such as a researcher) can remain open to the unexpected.

### 5.2.2 Inclusivity and Belonging

The theme *Inclusivity and Belonging* can be understood as a sense of being part of and connected to the community, feeling welcome, and having supports in the community. While both this theme and the next (5.2.3 *Connection to Place*) entail having a sense of connection to place and community, this theme speaks specifically to connection with other people in the community, whereas *Connection to Place* speaks to a broader connection including a history on the land, a spiritual connection to place, and a connection with non-human community members (such as nature, animals, etc.).

The interviews and workshop illuminated the importance of *Inclusivity and Belonging* through discussions of safety, social supports, and community cohesion. Majority of participants had lived in the community for more than 10 years and more than half had familial ties to the community. Most spoke about longstanding friendships and strong relationships with neighbours. Interestingly, those who talked more about such relationships and history with their community were also more involved with wildfire management and more commonly talked about working together with their social supports to take wildfire mitigation and prevention actions. Alternatively, those who said they did not interact with others in the community very much also tended to say they had taken fewer actions and were less likely to do so.

Given the primacy of *community* in this research, interview participants were asked to describe their communities. When participants spoke about ‘community’ they primarily spoke about their relationship with other community members, exemplified by this participant’s response:

It wasn’t the cabin or the lake that convinced us we should [stay], it was the people... we just loved the sense of community and the relationships we had with people up there...we knew that this was the right place for us... People who live in the North or who spend time in the North have some common values, I think, that bring us together, and just that neighborliness, the peace and quiet, the friendliness that we all appreciate, draws us actually closer. [P4]



The wildfire management documents defined community variably. Notably, several documents focused on elected officials and planners, missing out on inclusion of everyday community members. The most encompassing definitions of community come from the *Aboriginal Disaster Resilience Guide* and the *B.C. Toolkit* where the *Aboriginal Disaster Resilience Guide* states “a community shares a geographic area, social boundaries or beliefs, and can be organized around a particular issue, mutual activity or identity” and the *B.C. Toolkit* states a community includes “everyone who is or could be affected by an emergency/disaster” (Emergency Management British Columbia, 2021, p. 83). The *Aboriginal Disaster Resilience Guide* recommends various actions and initiatives to strengthen ‘social fabric’, defined as “a domain of resilience that addresses the relationships and social networks in a community” (*Aboriginal Disaster Resilience Planning Glossary*, 2015, p. 8). The *Aboriginal Disaster Resilience Guide* explicitly connects a sense of connection, belonging and community with a greater awareness of disaster preparedness (Aboriginal Disaster Resilience Planning, 2015a).

### 5.2.3 Connection to Place

The theme, *Connection to Place*, was originally parsed into the separate categories of *Interdependence* and *Connection to the Land*. This theme stems primarily from the interviews and spoke to the importance that interviewees placed on feeling positively connected not just to the other people in the community, but also to the land and non-human community. *Connection to the land* refers to the relationship that community members have with the land itself, including physical features such as the forest, the lake, the wildlife, and other non-human ‘members’ of the community that both drew participants to the area and kept them there. These relationships may or may not be rooted in culture or spirituality. The term *Interdependence* spoke to the idea that community members depend on and affect each other and their environment. This connection and sense of interdependence affects, among other things, how individuals think about wildfire management and associated behaviors. One participant shared:

Coming into Wadin Bay by boat right now in the fall to see all the beautiful fall colors, [you see] the points on either side of Wadin Bay that had caught fire, but we were able to contain them... Now you see the beauty of what we preserved as we stayed back to fight,

doing our FireSmart initiatives, doing the cleanup, staying on top of things to me, just gives the beauty you can still enjoy on this day and many more days to come, years to come. [P16]

This theme overlaps to a large degree with the discussion of geography as a key social identity factor (see section 4.2.1.2). Identity as a Northerner strongly correlated with participants discussing the importance of the natural landscape, the desire to protect it and their place in it.

#### 5.2.4 Understandings of Resilience, Risk, and Vulnerability

This theme arose from both the document analysis and the participants. Resilience is included as it shapes the way the problem is framed; risk and vulnerability (both actual and perceived) are key factors in wildfire management. Resilience was explicitly defined in just two documents reviewed. The *B.C. Toolkit* defined it as “the ability of a system, community or society exposed to hazards to resist, absorb, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner” (Emergency Management British Columbia, 2019). The *Aboriginal Disaster Resilience Guide* provided the most holistic explanation of resilience:

A community’s ability to anticipate, and where possible prevent or at least minimize the potential damage a disaster might cause. It involves how well a community can cope with the effects of a disaster if it occurs, to maintain certain basic functions and structures during the disaster, and to recover and adapt to the changes that result. (Aboriginal Disaster Resilience Planning, 2015a, p. 1)

The *Aboriginal Disaster Resilience Guide* goes further to point out other strengths and characteristics that play an important role in resilience, such as self-reliance, traditional knowledge and skills, governance, and social cohesion.

The interviewees, despite much emphasis through the interviews on physical and technical aspects of wildfire, discussed resilience almost exclusively in social terms: “It’s a community that works together; they play together, they work together” [P1]; “When push comes to shove and there is a situation, people come together” [P7]. Participants were asked what resilience

meant and if their communities were resilient. All participants spoke positively about their communities being resilient; for them it was less about having specific equipment or clearing deadfall, instead nearly all participants emphasized that working together – having social cohesion - was *a*, if not *the*, key element of resilience: Variations of the idea “working together” were mentioned by 14 of the 18 interview participants.

For nearly half of participants, resilience included good communication and leadership, to “do what it takes to make sure that we’re safe and we protect the community” [P7]. Finally, about one-quarter of responses spoke to the ability to adapt and recover with one participant offering that “the whole idea of resilience means getting knocked down on your tush and being able to get back up again or spring back or bend...changing with new dynamics” [P6].

Four of the seven documents provided an explicit definition of risk. These definitions were straightforward and included two parts: probability and consequences. The *Aboriginal Disaster Resilience Guide*’s definition provides a good example of a common take on risk: “The probability that a hazard will impact a community or region and the likely potential for negative consequences, such as loss of lives, jobs, property, or economic activity” (Aboriginal Disaster Resilience Planning, 2015a). Taking this somewhat ‘textbook definition’ as a lens to participants’ ideas of risk, participants’ engagement in mitigation activities varied among the 18 participants and over time. A small portion (two participants) shared that their behavior was not impacted by the wildfires and little or no changes came as a result: “We just came back and continued on with our life. Nothing really changed. You wouldn’t have known there was a fire here, ...because nothing happened in Napatak, we weren’t directly affected” [P3]. Approximately one-third made some increases in mitigation activity, for example increasing brush clearing around their homes or placing rooftop sprinklers on their homes. The majority of participant indicated they had maintained the high level of activity they had previously undertaken. Among this group, their experiences of the 2015 wildfires had reinforced their commitment to wildfire mitigation.

Most interviewees spoke about a clear knowledge and acceptance that living in the North, at the wildland urban interface, meant being at a greater probability of wildfire. One long-time resident

stated “it's just part of where we live. We don't have to worry about earthquakes or floods, but ...we do have to worry about the forest fires” [P1]. Those with prior education from FireSmart, experience with wildfire, a long history of living in the North, or experience in a wildfire or forestry-related field of employment, spoke with greater certainty and seriousness about the probability of another wildfire.

This understanding of probability affected measures that residents had taken. One participant with both experience living in the North and working in forestry not only took extensive measures to safeguard their home, but also kept copies of important documents off-site and an emergency ‘go bag’ in their vehicle. Another participant spoke about the contrast in attitudes around mitigation before and after the 2015 wildfires:

I could then speak with community members [about mitigation efforts] to just explain to them what that would mean in our community, what it would look like in our community. And certainly, those conversations were easier to have after the fires. People all of a sudden really, really understood the risk...it was a hard sell before the fires. The sell got a little easier after the fires. [P4]

The other piece of the risk equation was an assessment of potential consequences, emphasized in particular by those who were full time residents – those who stood to lose their primary residence and even their livelihood. Many part-time residents were aware of their differential risk position. For example, one seasonal resident offered: “Sure, we would lose our summer place, and if we wanted to build again it would be a lot of work, but we still had a home to go to. Whereas a lot of people here, this is their home, and if the fire had hit, they would’ve been impacted a lot more...even their livelihood, right?” [P3]. Other factors cited by participants as affecting their personal risk assessment included their financial position in general, having another (primary) residence, and having insurance. Finally, numerous participants identified a tension associated with risk perception among community members: this tension polarized a ‘clearcutting mentality’ and a ‘do nothing approach’. Nearly half of participants mentioned these tensions and were actively attempting to address them through education and engagement.

The only two stated definitions of vulnerability came from the *B.C. Toolkit* and the *Aboriginal Disaster Resilience Guide*. Taken together, the definition for vulnerability is the conditions, characteristics or circumstances determined by physical, social, economic, and environmental factors of an individual, community, system, or asset that make it susceptible to the damaging effects of a hazard. Besides stating a definition of the term, each of these two documents notably framed vulnerability in a constructive way, highlighting the ways vulnerability can make someone susceptible to negative outcomes of a hazard, but also fostering a novel or unique way of seeing the situation. For example, within the *Aboriginal Disaster Resilience Guide* and the *B.C. Toolkit*, there are numerous calls to include Elders from the community in planning initiatives, not only because they may be more vulnerable (due to health conditions, for example) but also due to potential lived experience and historical knowledge of disasters – wildfire or otherwise.

Through the interviews, the participants identified various vulnerabilities at the community level, including limited evacuation routes and an awareness of limited wildfire fighting capacity in a busy wildfire season like 2015. Others identified communications breakdowns, low uptake of FireSmart principles throughout the community, and non-permanence of all residents as vulnerabilities. At the individual level, some participants referred to specific issues around affordability, age, and mobility as being characteristics that made them more vulnerable: “there's been a few more people install sprinklers, but it's coming out of your own pocket, not everybody's got, you know, three or \$4,000 to go throw some sprinklers on top of the house” [P6].

In a few interviews, participants described the ways they sought to overcome said vulnerabilities and their successes in doing so. Further, they discussed the ways they used their vulnerabilities (current and prior challenges, struggles, etc.) as sources of strength and resilience. For example, one participant shared, “I was the sole provider. That made me ensure that in the future, if something happened to me, I need to know that things were in place for my child. There wasn't an option to *not* think big picture and [take care of my child] if something did happen to me” [P7]. Speaking simultaneously to resilience and vulnerability, participants sometimes – as in this example – drew on various identities such as gender, socio-economic status, or geography.

### 5.2.5 Capacity

Through the workshop, *Capacity*, *Self-sufficiency* and *External Support and Coordination* were combined into one theme: *Capacity*. *Self-sufficiency* refers to the ability of a community to meet its own needs. *External Support and Coordination* spoke to engagement with external bodies such as Government, other communities, and organizations such as FireSmart to access and offer information and other resources. They were merged to represent the total of all types of assets of the community including but not limited to human, physical, and material assets and relationships, including lived experience and Traditional Knowledge. *Capacity* can be considered relative to the goals of the community – so sufficient capacity is related to what the community aims to achieve. Finally, an important aspect of *Capacity* is the awareness of what a community has and what it needs.

The document analysis showed that several of the documents encouraged communities to conduct various assessments, thus encouraging community-level self-awareness. The most robust example of this was the *Aboriginal Disaster Resilience Guide*, which includes multiple assessment guides including a resilience assessment, a hazard risk assessment, a hazard resilience assessment, a community profile, and a skills and knowledge inventory. These assessments not only focus on physical assets but identify various important social considerations. For example, assessments ask about diverse capacities including social cohesion and belonging, safety of livestock, and emergency medical response capacity. Not all documents are as thorough as the *Aboriginal Disaster Resilience Guide*, though most encourage some sort of inventory of the community. This theme was also evident through participant engagement. Participants also spoke extensively about their assets (or lack of); primarily they discussed their relationships with FireSmart, government agencies, and other communities; specific firefighting equipment within the communities; and the skills, knowledge, and ability to collaborate within the communities.

### 5.3 Workshopping a Framework for PDL

The purpose of the workshop was to engage participants in a process that would refine and organize the previously collected data into a framework for PDL. Note that below, when discussing the workshop, the terminology differs slightly from the themes discussed above; this is because it was *through* the workshop that participants refined and reorganized these themes. Further, from here on, the themes discussed above are referred to *principles*, to reflect the terminology that appears in the framework. The framework *principles* are foundational components of each stage on which people would direct their attention and efforts. Importantly, the social strategies identified in Chapter Four are reintroduced in the framework. The social strategies can be thought of as the engine that drives learning at each stage; the strategies activate and mobilize the learning around the principles.

#### 5.3.1 Workshop Part I: Assessing Key Terms

In the first part of the workshop, fifteen terms were presented to participants (listed in Table 5.1). These terms included the principles discussed above and the social strategies discussed in Chapter Four. Each participant was provided a worksheet (Appendix I) which asked them to reflect on the terms in various ways and to discuss their perspectives with a partner from the other study community. Specifically, they were asked to rank, categorize, and relate the terms. They were also asked to provide feedback regarding the addition, deletion, or alteration of any of the terms. This was, in part, to improve the confidence in the coding of the original interview transcripts. Through this process, some of the terms were combined, renamed, or otherwise changed. For example, the original list of 15 terms included *Capacity*, *Self-sufficiency*, and *External Support and Coordination*; these three terms were later combined into one principle called *Capacity*.

Notes and sketches from the six workshop participants and were compiled and analyzed. Table 5.1 shows how participants ranked the importance of the terms (1 is more important, 3 is less). Values were adjusted to display a uniform ranking scheme among workshop participants. Some terms were consistently ranked by all participants; for example, *Communicate* was deemed a top

priority by all six participants whereas *External Support and Coordination* was consistently ranked lower.

Table 5.1 Participant ranking of 15 key terms

<b>Term</b>	<b>P5</b>	<b>P4</b>	<b>P2</b>	<b>P13</b>	<b>P14</b>	<b>P12</b>	<b>Total</b>	<b>Avg</b>
Communicate	1	1	1	1	1	1	6	1.0
Inclusivity and Belonging	1	1	1	1	2	2	8	1.3
Interdependence	1	2	1	1	2	1	8	1.3
Lead and Govern	1	1	1	3	1	2	9	1.5
Collaborate	1	2	2	1	3	1	10	1.7
Buy-in (later termed 'Engage')	2	2	1	3	2	1	11	1.8
Connection to the Land	1	2	3	2	1	2	11	1.8
Context	1	3	3	2	1	1	11	1.8
Educate	2	2	2	3	1	1	11	1.8
Capacity	3	1	3	1	3	2	13	2.2
Commitment	2	3	2	3	2	1	13	2.2
Self-sufficiency	3	2	3	2	2	1	13	2.2
Understanding Risk	2	2	2	2	3	2	13	2.2
Understanding Vulnerability	2	2	2	2	3	3	14	2.3
External Support & Coordination	3	3	3	3	3	2	17	2.8

Note: 1) a lower score indicates a higher priority. 2) Participant numbers were maintained from interview phase, hence non-sequential numbering in workshop phase.

To categorize and relate the terms, participants were encouraged to use any number of groups and to draw a relational diagram if desired. Most of the participants formulated common approaches to categorizing and relating the terms, organizing them into a process. In general, there was a trend to group the more important terms together and place them earlier in the process; likewise, the less important terms were grouped together and placed later in the process. Participants did not agree on two of the terms as consistently as the others; *Communicate* and *Context* were difficult to place in the process. As such, they were treated differently in the draft framework (see below). Taken together, these data became the basis for the development of the draft framework.



### 5.3.2 Development of the Draft Framework

Based on the data from the first part of the workshop, I developed a draft framework to propose to the workshop participant group. The draft of the framework depicted a five-stage process for collective learning, represented as a cyclical process to communicate that learning – and also wildfire and disaster management – is an iterative endeavor. The five stages included 1) Connect; 2) Understand; 3) Organize; 4) Plan; and 5) Act.

Each stage included principles and strategies. Further, two additional elements were included in the draft framework: 1) guiding questions and 2) learning outcomes. Guiding questions were provided for each stage, examples of which are provided in Table 6.1 and a full list in Appendix L. The questions provided were not an exhaustive list but were meant to provide a point of departure and examples of how to practically work through the process in a way that provoked critical thinking, reflection, and respectful and productive conversation. The guiding questions were informed by transformative learning theory and designed to elicit critical reflection on assumptions, feelings, and experiences, as well as exploration and testing of new roles, relationships, and approaches (Mezirow, 1994). The guiding questions were also targeted at various scales: the individual, the community, and context (the broader environmental, social, political landscapes). The learning outcomes were also informed by transformative learning theory which directs learners to brainstorm and try out new roles, relationships, and approaches. This was meant to encourage an openness to new ideas and approaches in an experimental, low risk way. An in-depth description of the draft framework is described in Appendix J.

### 5.3.3 Workshop Part 2: Refining the Draft Framework

In the second and final part of the workshop, participants were presented with the draft framework. Explanations, questions, and definitions were provided for review and discussion; critiques and questions were encouraged. The workshop took place using Google Jamboard, a virtual workshop space that mimics an interactive whiteboard. Participants were asked to post notes and mark up the draft framework. They provided practical feedback including a visual redesign to make the framework more visually intuitive. One participant noted the intentionally

iterative nature of the image, stating, “I like the way the diagram shows the next step starting before the current one is completed. It gives it a sense of flow instead of concrete steps” [P4]. Knowledge mobilization was noted as well; concerns were expressed regarding the ways that presentation of the framework and supporting materials could be made available in ways that were accessible to an audience with a wide range of information technology abilities.

The guiding questions were well-received by workshop participants as it helped to bridge the gap from general, abstract ideas to more practical questions and actions. Participants suggested the framework and supporting materials could serve as a facilitation guide for community leadership: “This is a fabulous facilitation guide. I can see someone taking this and leading a workshop in a community” [P4]. Another participant suggested that community members may need additional preparation prior to taking part in such a process: “Can an individual feel like they are able to fit into a group discussion on something as “big” as a wildfire event? And feel like they will be able to have some input that would be meaningful? Maybe some basic education/reading material/in advance or attendance at a preparatory event?” [P14].

The final key point of discussion was what made the framework a *post*-disaster tool – that is, why was it solely for use after a wildfire and not at any time. One participant stated that

One goes through the ‘post-event’ analysis at times with no thought to improving the possible outcome of the next wildfire event... However, this process does include many more different aspects of looking at how an event happened than other planning or final report type dissections of the ‘physical’ side of a wildfire event. [P14]

Another participant added that communities may find themselves starting a structured learning process at different points and so, depending on their specific situation, may choose a different place to start than other communities. He offered:

I think our community learned a lot after the wildfire and think this document really pinpoints the gaps or areas we can improve our plan. It shows areas where we can improve our efforts, e.g., communication, listening to ideas and involvement. [P5]

The key takeaways from the second part of the workshop included the suggested visual redesign, concerns about accessibility and knowledge mobilization, feedback about placement of *Context* and *Communicate*, the positive response to the guiding questions, and the reflections about the framework being exclusively a post-disaster tool. This feedback was carried forward and incorporated into the revised framework (discussed in Chapter Six).

## **5.4 Conclusion**

This chapter discussed the results related to the mechanics of learning finding that there was a lack of practical and thorough guides for community-based PDL, but that ideally, according to participants, such learning would take place routinely and soon after a wildfire event, such as within a few months. This learning could be supported by existing governance structures in the community but would benefit from additional engagement strategies to improve inclusivity. This chapter also outlined the key themes that arose from the document analysis and interviews. These themes, workshopped and refined, became the basis for the draft framework for community-based PDL. The revised framework is discussed in Chapter Six.

## **CHAPTER SIX: DISCUSSION**

The previous chapters described the results relating to social identity factors and social strategies (objectives 1 and 2) followed by results pertaining to post-disaster learning (PDL) (objective three). This chapter discusses these results in relation to the literature and the broader research goal – supporting empowerment of rural communities to engage in PDL to inform future preparations and responses to wildfire. I begin by discussing the principles (6.1) and strategies (6.2) that primarily comprise the framework. I then present the framework, which has been revised from Chapter Five according to information from workshops and academic literature (6.3). Next, I discuss the application of the framework including potential challenges (Section 6.4). Section 6.5 discusses social identity factors. Finally, I take a broad view to discuss how the small-scale results of this research relate to the concept of social sustainability more broadly and to the role of wildfire and other disaster management guides in that relationship.

### **6.1 Principles of the Framework**

This section discusses the principles and relevant data in relation to the literature. It also points to some implications for the PDL Framework and application. The next section (on strategies) does the same. Together, these sections (6.1 and 6.2) aim to provide a deeper understanding of the principles and strategies prior to introducing the final framework (6.3).

#### **6.1.1 Inclusivity and Belonging**

The data from this study support that social cohesion is a key ingredient in resilience at the community level (Berkes & Ross, 2013; Townshend et al., 2015). For example, in a study of on how social cohesion influences wildfire preparations, Prior and Eriksen (2013) found that social cohesion facilitated wildfire mitigation by helping people to understand risk and then to address it, both in psychosocial terms and in material ways; this was also evident in the interviews. Likewise, this study's results show that participants in the communities of Napatak and Wadin Bay demonstrated a strong sense of social cohesion; for many of the participants, a sense of safety, a strong social network, and prior involvement in community activities supported their

sense of belonging. This sense of cohesion also materially supported their wildfire management goals. Those with strong social ties within the community discussed taking mitigation and preparedness actions. Alternatively, there were a few cases where participants indicated that their lack of social connection was an obstacle to taking action or participating in community-based discussions and wildfire planning. In communities, some people will also be less connected than others, and pre-existing tensions with neighbors are not uncommon. At the same time, the processes suggested by social and transformative learning require a degree of involvement, trust, and even vulnerability to engage or re-engage with fellow community members. While the principle *Inclusivity and Belonging* is foundational to a process of PDL, it may also be one of the most challenging to develop and sustain.

The participants shared some details about various social tensions in the community, some of which were related to wildfire management. While I am not able to make recommendations about how to manage these historical social tensions, I can identify the importance of *Inclusivity and Belonging*. I can also provide strategies based on the data to work around existing social barriers that may prevent those with fewer social ties from participating in wildfire management in their community. Some of these strategies were identified by the participants themselves while other useful strategies for such a challenge were identified in the documents reviewed. Potential strategies are discussed in the section on application (6.4).

#### 6.1.2 Connection to Place

*Connection to Place* refers to the relationship people have with the land and non-human community, including physical features such as the forest, wildlife, and other non-human ‘members’ of the community. As a principle, it emerges early in the post-disaster framework. Scholars from the diverse but related fields of social sustainability, climate change, and disaster and wildfire research have argued that a connection to place is a primary factor in adaptive capacity and resilience building (Adger et al., 2013; Berkes & Ross, 2013; Eizenberg & Jabareen, 2017; McCaffrey, 2015; Paveglio et al., 2018). Likewise, some of the wildfire management documents (e.g., the *Aboriginal Disaster Resilience Guide*) emphasize the

importance of the people-place connection, making recommendations and providing strategies accordingly.

Participants spoke about a deep appreciation of their connections to Wadin Bay and Napatak. Many discussed their relationships with the land, though in variable ways. For a few participants, the connection was rooted in the idea of an innate value of a place, that is, it should be valued and protected in its own right, not because of its value to people. In other cases, *Connection to Place* was characterized slightly differently, with more emphasis on protecting the community from wildfire so as to preserve their place in and enjoyment of the forest. This seemingly small distinction has the potential to affect the trajectory of wildfire management plans and practices, especially if unrecognized (Walker et al., 2021). Further, perspectives on wildfire as a natural function of a forest also varied; for some, it was characterized as a preventable threat whereas others saw it as a natural inevitability. Collectively examining this principle in-depth may facilitate a deeper understanding of why some people abstained from mitigative actions to protect the forest *from* change, whereas others sought to protect the forest *through* change. Notably, this was not a strict dichotomy; some participants described feeling that they had successfully negotiated the tension between altering the landscape too much while still taking some basic mitigation actions. Due to the variation in how people described their connection to place, the role of wildfire, and the potential implications these ideas can have on wildfire management behaviours, the principle *Connection to Place* was included early in the framework (Stage One).

### 6.1.3 Understandings of Resilience, Risk, and Vulnerability

Majority of participants indicated that their risk perception had shifted as a result of their lived experience with wildfire, education (wildfire specific and otherwise), or both. They also generally felt that the optimal time to do PDL was within a year or less after an event. These results support the literature, which shows that lived experience with wildfire can shift risk perception and behaviour (Labossière & McGee, 2017; Martin et al., 2009). Participants also suggested that the ideal time to learn and implement meaningful change based on their experiences had passed, indicating support for the idea that there is, in fact, an ideal window of

opportunity directly after a wildfire event (Dodd et al., 2018; Labossière & McGee, 2017; McCaffrey, 2004). These results demonstrate that risk perception is not only an important element in PDL but also tightly interwoven with several other community elements and dynamics. Risk is discussed further in section 6.4.1.

Participant results indicated that discussions of vulnerabilities were diverse, tending to focus slightly more on the physical or material aspects. According to Arora-Jonsson (2011), thinking of vulnerability as weakness obscures the actual and potential strength, knowledge, and resilience of vulnerable people. The data indicated that a minority of participants personally overcame this dichotomous thinking. In these few instances, these participants discussed vulnerability as a challenge or barrier but not necessarily an immovable one. Drawing on past life experience and the learning garnered from it, these participants discussed the agency, strength, and knowledge they carried with them and how they could use it to address current issues. In contrast, other participants characterized vulnerabilities (of various sorts) as hurdles that could not be overcome. For example, one participant noted that their age was a barrier to accomplishing mitigation goals and in response stated, “we’re probably not going to do it. We’re older, we’re not going up on the roof to install them... We accepted the fact that if we lose it, we lose it, right?” [P3].

Turning to the concept of resilience, the results indicated that participants overwhelmingly defined resilience in social terms, citing the importance of social cohesion, communication, leadership, and the ability to adapt as primary elements. This contrasts strictly physical and technical conceptualizations of resilience and adaptation (Atallah et al., 2019; Reed et al., 2014). Community members of Napatak and Wadin Bay discussed resilience that spanned all three of waves of resilience thinking described in Chapter 2. First wave thinking about resilience (ideally, being protective and bouncing back) was apparent in a few of the participant interviews, and a handful framed resilience in the ideal third wave thinking, which prioritizes transformative learning and “centering on the margins” (Atallah et al., 2019, p. 16). More often, however, participants discussed resilience in second wave thinking: being adaptive and bouncing forward (Atallah et al., 2019). For example, one participant repeatedly cited experiences of struggle and marginalization in which she learned to empower herself and others. For her, so-called

vulnerabilities produced new opportunities to leverage new-found and hard-won knowledges into strength, action, and ultimately a strong feeling of resilience. This participant had numerous questions and novel ideas about future wildfire management in her community. She had clearly taken the time to reflect on her experiences— a tenet of transformative learning. In retrospect, her interview provoked this question: What possibilities might open up if all community members could shift to third wave thinking?

#### 6.1.4 Capacity

*Capacity* refers to a community's assets and resources and the ability to mobilize them. These assets and resources can be social, economic, physical, or cultural. In this research, *Capacity* came to include two other themes: *Self-sufficiency* and *External Support and Coordination* (e.g., governmental organizations, FireSmart). *Self-sufficiency* speaks to the degree to which a community is and wants to be self-reliant with respect to wildfire management and its belief in achieving such goals (self-efficacy). *External Support and Coordination* can be seen as a resource that contributes to a community's total assets. *Capacity* spans the latter stages of the framework, guiding the community to assess assets, identify gaps, and make and execute plans accordingly.

The participants spoke about a wide range of assets and resources in their communities—social and otherwise. Social assets and resources included effective leadership, local knowledge of firefighting, firefighting equipment, skills, wider knowledge, and strong collaborations within and between communities. A few participants seemed well aware of the varied and sometimes obscure assets, noting the ways that their life experience, prior struggles, and strong objectivity contributed to their abilities to handle challenges related to wildfire. This recognition is what Enarson (2001) highlighted in her study of the work women did in the Red River Valley floods, recognizing and valuing that the often invisible contributions made by community members support the entire community to “capitalize on the skills, resources, and local knowledge of women and women's community-based organizations” (2001, p. 16). The importance of these contributions is also reflected in the *Aboriginal Disaster Resilience Guide*, which includes



multiple assessments and inventories—many of which focus on social resources and assets—and helps communities develop a holistic view of their capacity.

Several participants noted the influence of their relationships with FireSmart, government agencies, and other communities (such as La Ronge and the Reserve community of Sucker River). For some, lack of trust and communication with external wildfire authorities fostered a desire for greater self-sufficiency. On the other hand, positive relationships often produced material and financial supports. Good relationships with these external supports might also facilitate two-way communication, especially after a disaster event. Participants expressed a desire to have continuous, two-way communication with government and others outside of the community. This supports O’Sullivan et al.’s (2013) proposal to have community members with specialized needs, risks, vulnerabilities, and knowledge “teach the responders” (p. 243) and reflects FST’s assertion that marginalized perspectives have a robust capacity for knowledge creation (Harding, 2016).

## **6.2 Strategies in the Framework**

In this section, six strategies are discussed, including the original five identified by the research participants and the document analysis (*Communicate, Engage, Educate, Lead and Govern, Collaborate*) as well as an emergent strategy—*Reflect*.

### **6.2.1 Communicate**

In the workshop, participants ranked *Communicate* as the most important term. Approximately two-thirds shared a communication-related lesson from their experiences with the 2015 wildfires. It was clear that communication was essential to the overlapping processes of wildfire management and learning which aligns with increasing scholarly emphasis on post-disaster communication and learning (Imperiale & Vanclay, 2016; Labossière & McGee, 2017). While developing the framework, participants and I found *Communicate* difficult to place because it seemed to fit everywhere and be continuously important. As such, in final presentation of the framework, *Communicate* has been placed as strategy in all stages of the framework. This is due in part to its influence on the success of other principles and strategies such as education and

collaboration which require clear and timely communication to be effective. Similarly, the principles need explicating and sharing to understand their meaning and value.

It is useful to consider two overarching aspects of communication: the quantity of communication (including the timing) and the quality of communication. With regard to quantity, participants noted the importance of clear and timely communication in numerous contexts, including all stages of wildfire management and both within the community and with external bodies (e.g., government, FireSmart, neighboring communities, etc.). Having the right amount of information at the right time was influential in how people felt, learned, and behaved. Participants cited numerous instances where they were uninformed about key issues with external actors directly before and during the 2015 wildfires. For example, a Napatak resident discussed being unaware that the Army was not only in their community but would be using their dock as an emergency egress route. Similarly, a Wadin Bay resident discussed the confusion and worry around the check points in and out of their community. They feared that if they left the community for supplies in the neighbouring community of La Ronge, they would not be permitted to return. In these examples, communication *to the communities* was lacking and had negative impacts. These examples also highlight the importance of communication *from communities* as well. Participants shared that they have not been able to provide feedback about their experiences to those with authority. These lessons, therefore, may be lost and those with the authority and responsibility to respond to wildfire and other disasters miss opportunities to learn from communities' lived experience (O'Sullivan et al., 2013). These findings support calls to address disaster communication with "a more holistic view, an event-based approach that provides a temporal view of the significant decisions made before, during, and after an event" (Steelman & McCaffrey, 2013, p. 684).

Participants also focused on the quality of communication. For example, one Wadin Bay resident explained the shock that they felt when, for a brief while, community members thought the community had been completely destroyed by wildfire. These examples reinforce that accurate communication is an essential component of learning and disaster management and that the consequences of communication lacking quality or quantity can be detrimental.

### 6.2.2 Engage

*Engage* (a strategy) is closely related to *Inclusivity and Belonging*, (a principle) as both generally focus on bringing people together. However, *Engage* is about the *actions* taken to foster involvement and participation amongst community members, as well as engagement with the ideas and practices of wildfire management. Separating *Engage* from *Inclusivity and Belonging* highlights the need for targeted *actions* to engage, involve, and hear from marginalized people on social matters regarding local wildfire management. This engagement of people on the periphery reflects the Sendai Framework's 'all-of-society approach,' which submits that disaster risk reduction is best approached through meaningfully engaging marginalized groups (*Sendai Framework for Disaster Risk Reduction 2015-2030*, 2015). Without input, involvement, and recognition of all relevant parties, a community cannot have a full understanding of wildfire management and experiences, nor appropriately address social issues (for example, Enarson (2001)).

Data from the document analysis and participants indicate that engagement activities at the community level was a priority. Both Napatak and Wadin Bay had undertaken engagement activities, primarily through the FireSmart program. FireSmart promotes mitigation activities such as community cleanup days centered on building social connections and often involves some sort of community gathering or celebration. In local governance, community members were aware that having diverse leadership would improve the breadth of their knowledge and practice. One participant indicated that they are already aware of and acting on this strategy, stating "The challenge is to engage people in a role that they're interested in, capable of contributing" [P2]. Most of the wildfire documents encourage some type of engagement strategy; however, aside from the *Aboriginal Disaster Resilience Guide*, most documents address the matter quite superficially. The data reflects literature that asserts broad community engagement is key component of optimal wildfire management at the community level and that engagement practices (Eriksen & Prior, 2011). More broadly, these engagement strategies can be seen as vehicles for resilience building as they foster participation (Imperiale & Vanclay, 2016).

The data also indicated that engagement gaps remained in the two study communities. These gaps may be present for several reasons, one of which participants identified as complacency. A Napatak resident noted that “buy-in is temporary”, adding that “[Wadin Bay] is becoming complacent because there is nothing left to burn, and [Napatak] is complacent because nothing actually burned” [P4]. These gaps may reflect some of the tensions in the literature around risk perception and its influence on wildfire management behavior which indicate that there are numerous factors which affect why and how community members assess risk in response to a wildfire event (Kramer et al., 2021; Martin et al., 2009; McGee et al., 2009).

Other reasons for gaps in engagement involve existing social tensions and a lack of strong social ties in the community; divergent perspectives on the nature and value of FireSmart and its impact on the landscape; and practical concerns related to resident status, scheduling availability, financial impacts or simply being busy with career and family responsibilities. One way to address this gap may be to prioritize engagement more consistently throughout the wildfire management cycle. As a result, *Engage* is included in numerous stages of the framework.

### 6.2.3 Educate

The data from this research demonstrated that participants prioritized wildfire education as a means to become more resilient to wildfire, supporting the assertion that enhanced knowledge, skills, and learning are components of resilience in general (Berkes & Ross, 2013; Walker et al., 2021). The FireSmart Guide was their main source of education, and although it primarily focused on the physical aspects of wildfire, it empowered many participants to act. One participant even described the learning from FireSmart as a “real revelation” [P2]. Importantly, the results indicated that with FireSmart education about risk and wildfire often came a shift in risk perception and a strong sense of self-efficacy, subsequently provoking a change in behaviour. These results support the link between risk perception and mitigation action found in the literature (Martin et al., 2009). The learning garnered from FireSmart was diffused through the community in both formal and informal ways. A Wadin Bay participant estimated that as many as 80% of community members were participating in FireSmart in some way.

While the FireSmart Guide focuses on physical aspects of wildfire, the guide offers some tools that speak to the social issues raised in this research, such as a chapter about communication and public education. In addition, since the document search occurred, FireSmart released a document titled *Blazing the Trail: Celebrating Indigenous Fire Stewardship* (2020), which discusses Indigenous approaches and contributions to wildfire management in Canada. The *Aboriginal Disaster Resilience Guide* also provides educational opportunities to broaden the ways wildfire management is approached with all aspects of sustainability in mind: social, cultural, economic, and environmental.

#### 6.2.4 Lead and Govern

Focusing on leadership and governance was a key social strategy identified in the interviews (see 4.3.2). According to participants, both Napatak and Wadin Bay had well-established, long-standing forms of local governance. Many of the participants had experience with these governance structures. These structures may account for many of the successes the two communities have enjoyed, as strong governance is considered to be a characteristic of resilience (Berkes & Ross, 2013).

While somewhat rare, some participants advocated for new people and perspectives in local governance, and at the same time some participants spoke about not feeling welcome in governance activities. In some ways, these participants are speaking to opening a space for subjugated knowledges (knowledge that is “suppressed, repressed, and oppressed by white patriarchal knowledge production” (Moreton-Robinson, 2014, p. 333). Walker et al.'s (2019) framework for intersectional analysis suggests that power relationships are important and asks the researcher to consider which perspectives and experiences are not reflected in response and planning. With this principle in mind, a prudent first step within Napatak and Wadin Bay may be to identify any existing but under-recognized forms of leadership in the community which may facilitate power sharing. For example, women who remained in the community during the Wadin Bay wildfires may bring important perspectives to leadership roles. Based on data, it is unclear if these women already hold leadership positions. If they do not, information and knowledge in wildfire planning in the community may be lost. This reflects Enarson's (1999) study of the work

women did in the 1997 Red River Valley flood in the U.S. where she suggested that overlooking these power relationships can result in obscured views of the situation and the people in it. In her study, she documented loss of recognition and valuation for women and the work they did. Consequently, the community as a whole may have diminished capacity to make proper assessments of past events and therefore to plan for future events.

#### 6.2.5 Collaborate

Simply put, *Collaborate* means working together, which the study communities generally did well both within the community and with those from outside the community. Noting many examples of collaboration, the participants cited it as a key facilitator of their successes, including collaboration in leadership, mitigation work, and response efforts. Confirming these findings, researchers have also affirmed the importance of collaboration. For example, Owen (2020) noted that effective practices typically meant community-level collaborative decision-making and resource sharing.

In general, the results of this research showed that those who were well-connected, engaged, and involved in leadership and governance were more likely to collaborate on wildfire management initiatives and to support the idea that collaboration is largely dependent on good, trusting relationships (O’Sullivan et al., 2013). The study communities also noted instances of collaboration between communities (between Napatak and Wadin Bay, as well as with other nearby communities). Other studies have found inter-community collaboration to be a factor in mitigation successes, for example Labossière & McGee's (2017) case study of Logan Lake and Kamloops.

#### 6.2.6 Reflect: An Emergent Strategy

Transformative Learning Theory and intersectional feminism both encourage reflecting about oneself, though in different ways. Intersectionality encourages self-reflection through reflexivity, “the ability of human beings to stand back and ‘see’ themselves in the process of seeing, perceiving, thinking etc.” (Choo, 2003, p. 29). As Sharpe (2016) argues, reflection is also an essential component of transformative learning, allowing the learner to more profoundly examine

their core beliefs, assumptions, and values associated with their ideas and behaviours (Sharpe, 2021). Collectively, reflecting on and sharing experiences can facilitate new knowledge and better understanding (Haque et al., 2021).

The *results* of this research, as well as the *process*, align with these ideas. Findings show that participants valued the informal debriefing and reflecting opportunities, sometimes through what they called “driveway meetings” [P4], as well as through local governance structures. Participants also expressed a desire for or sought more opportunities for such activities. The process of this research also demonstrated the value of reflection. Interview participants suggested that their participation in this research had facilitating deeper understanding of their own feelings and thoughts about the experience. One interviewee noted that participation provided a sense of validation that was “part of the healing process” [P10]; others noted that the paired phone conversations via the workshop prompted them to collect their thoughts before discussing them with someone else, thereby clarifying their ideas and feelings.

This type of reflection helps one engage in critical assessment to identify and examine one’s personal standpoint, and associated assumptions, biases, and values related to wildfire experiences. Importantly, this may then shift the behaviors and actions that follow (Doucet & Mauthner, 2006; Sharpe, 2016). Meant to be shared with the community member group, the reflections allow for the recognition of a shared sense of dissatisfaction or disorientation (Mezirow, 1997) and help individuals see the situation from differing standpoints: “By encouraging learners to share their fears, concerns or perceived barriers they will start to consciously process these and be able to start to formulate new ideas, beliefs, attitudes, intentions and actions to respond to the problem facing them” (Sharpe, 2016, p. 216). This process is particularly useful, for example, when trying to understand a community’s vulnerability or risk. Assumptions such as risk tolerance or financial capacity may also be called into question through reflection. The strategy *Reflect* encircles the process: In the first stages, it encourages early, critical self-assessment of values, assumptions, etc. Then, at the end of the cycle, it helps learners to ‘look back’ on the process, and, as one participant put it, “provide[s] an opportunity to engage new people and develop new strategies.” [P4]

### 6.3 Overview of the Framework for Community-based Post-disaster Learning

This section describes the revised version framework for community-based, post-disaster learning completed following the workshop (hereafter called the *Framework for Post-disaster Learning*, or just the *framework*) (Figure 6.1). The revised framework consists of five stages: 1) Connect, 2) Understand, 3) Organize, 4) Plan, and 5) Act. This order was informed by the workshop participants and how they prioritized, categorized, and related the key terms (see 5.3.1). While the stages of the framework are ordered, the non-linear design of the framework was intended to communicate that the process is iterative and ongoing, reminiscent of other learning and adaption models (e.g., Eriksen & Prior, 2011; Paveglio et al., 2018; Sharpe, 2016).



Figure 6.1 Framework for community-based post-disaster learning

This version of the framework is similar in many ways to the draft framework; however, a few changes are evident. The first is that *Reflect* has been drawn out from a few of the individual stages and now encircles the process (indicated by the white arrows in Figure 6.1). Similarly, *Communicate* is a strategy in each stage, no longer forming the foundation of the framework as proposed in the draft framework.



Below are descriptions of each stage. This is followed by Table 6.1 which indicates the principles and strategies for each stage, where *principle* are foundational components upon which people direct their attention and efforts and *strategies* are actions, plans, or approaches where the means or the goals are social in nature. These strategies can be thought of as the engine that drives learning at each stage; the strategies activate and mobilize the learning around the principles. The table also provides an example of a guiding question and learning outcome for each. The full set of guiding questions and learning outcomes for each stage are included in Appendix L.

Stage 1: Connect: Community members strive to connect with their own ideas, feelings, and values, especially expectations, assumptions, and experiences of past disasters. They may also be connecting with each other for the first time. The foci of this stage include past disaster experiences and the principles of *Inclusivity and Belonging* and *Connection to Place*. Community members use the strategies *Reflect*, *Engage*, and *Communicate*. People are also asked to reflect on their ideas, feelings and experiences about community, inclusivity, belonging, and the non-human parts of the community (such as wildlife, the landscape, etc.). *Engage* and *Communicate* are key strategies in the first stage as this is the initial formation of the group; ideally a broad and diverse group of community members would come together to begin this process.

Stage 2: Understand: This stage shifts the focus from the individual to the collective. In this stage, community members should seek to better understand each other's responses from Stage 1, ideally fostering *Inclusivity and Belonging*. This stage is also about deepening understandings of resilience, risk, and vulnerability, all foundational concepts in disaster studies and experiences. *Reflect*, *Engage*, and *Communicate* continue to be useful strategies in Stage 2; *Educate* is added to broaden understandings of experiences, foundational concepts, and wildfire/disaster itself. Community members may seek out information about whatever hazard their community faces (e.g., flood, drought, etc.), including the physical, economic, cultural, environmental, *and* social aspects of said hazard.

Stage 3: Organize: In this stage, community members focus on *Capacity* and inclusivity and belonging. Capacity includes identifying and mobilizing material, economic, social, environmental, and cultural assets and resources. Developing and strengthening an inclusive governance structure and fostering leadership within the community is key; not only is *Lead and Govern* a strategy in this stage, but the governance structure and leaders within the community can be considered as some of its assets. Assets and resources also include those from outside the community; hence, this stage asks community members to look at existing and potential supports from external bodies (e.g., neighbouring communities, government, and NGOs). This stage presents an opportunity to assess availability and gaps in community assets and resources, especially those that may typically go unrecognized or underused. Finally, this stage asks community members to consider the degree to which the community is, wants to be, and can realistically expect to be self-sufficient.

Stage 4: Plan: This is the first stage to introduce *Collaborate* as a strategy. While community members have been connected to this point in the framework, this stage is where cohesion among those involved becomes truly active. This stage asks community members to make plans based on what they have reflected on, assessed, brainstormed, and learned in the first three stages; it focuses on determining how to put the community's knowledge and assets to work in a way that reflects the community's diverse perspectives and needs. Informed by the outcomes of the first three stages, plans can be made with a more holistic, broader knowledge base of both wildfire/disaster and the community (its strengths, challenges, risks, vulnerabilities). In this stage, community members begin to try out new roles, connect with potential and existing partners and supports, and establish holistic, inclusive wildfire/disaster management plans.

Stage 5: Act: This stage focuses on putting plans into action. Learning from previous stages can be seen as shaping new practices as community members execute their wildfire management plans. Although this stage focuses on action, learning is still very much occurring as community members learn their new roles, new practices, and approaches; thus, stage five is the practicum in the broader learning process.

Table 6.1 Summary and examples of PDL Framework components

	<b>PRINCIPLES</b>	<b>STRATEGIES</b>	<b>GUIDING QUESTION</b>	<b>LEARNING OUTCOMES</b>
<b>CONNECT</b>	Inclusivity and Belonging  Connection to Place	Reflect, Engage, Communicate	What is my connection to this place?	Assess how disaster experience did not match prior expectations.
<b>UNDERSTAND</b>	Inclusivity and Belonging  Understandings of Resilience, Risk, and Vulnerability	Reflect, Engage, Educate, Communicate	How can we make learning more about disaster risk easier and engaging for community members?	Discuss and acknowledge diverse perspectives about resilience, risk, and vulnerability.
<b>ORGANIZE</b>	Inclusivity and Belonging  Capacity	Reflect, Engage, Educate, Lead and Govern, Communicate	What are some examples of assets, supports, or resources that might be considered unconventional, overlooked, or undervalued?	Develop or strengthen an inclusive and accessible governance structure, including leadership roles based on addressing gaps and strategic use of community members' skills, abilities, and knowledge.
<b>PLAN</b>	Capacity	Reflect, Collaborate, Lead and Govern, Engage, Communicate	How can plans accommodate various levels and different kinds of capacity (e.g., financial, physical, social)?	Explore, initiate, and foster new collaborations between people with diverse perspectives or skills. Position and support new leaders to engage the community.
<b>ACT</b>	Capacity	Reflect, Collaborate, Communicate	What am I learning as I try out new roles, activities, or approaches?	Allow time and space for learning new roles and incorporating lessons learned.

Interestingly, the framework, primarily based on participant input, shows a substantial alignment with Mezirow's phases of transformative learning (Mezirow, 1994). Table 6.2 shows how the stages of the framework correlate to Mezirow's phases of learning.

Table 6.2 Relationships among Mezirow's phases of learning and framework stages

Summary of Learning Phases (After Phase 1: a disorienting dilemma/disaster)	Framework Stages				
	1	2	3	4	5
2) Examine feelings	✓				
3) Critically assess assumptions	✓	✓			
4) Recognize experiences of discontent and transformation are shared		✓			
5) Explore new roles, relationships, and actions			✓		
6) Plan a course of action			✓	✓	
7) Acquire knowledge and skills to implement plans		✓	✓	✓	
8) Provisionally try out new roles				✓	
9) Renegotiate relationships and negotiate new relationships				✓	✓
10) Build competence and self-confidence in new roles and relationships					✓
11) Reintegrate into one's life based on new perspectives					✓

(Mezirow, 1994)

## 6.4 Application of the Framework

The purpose of the Framework for Post-Disaster Learning (PDL) was to support the empowerment of rural communities by stimulating a process for PDL to inform future wildfire management plans. Our co-developed framework has the potential to facilitate learning at the community level to draw out previously unidentified goals and means related to wildfire management. Use of the framework could result in reconsideration of adaptation options that were previously dismissed, the inclusion and involvement of a broader range of people in the community, and a new awareness of community assets, particularly marginalized knowledges and modes of resilience.

Although the guiding questions and learning outcomes are not exhaustive, they have the potential to prompt change at the community level, can be further amended by community members, or as suggested by a participant, developed into a facilitation guide to lead community members through a PDL process (see 5.3.3, [P4]).

#### 6.4.1 Experience, Risk, Action, and the Window of Opportunity

Some studies have suggested that recent experience with wildfire and other threats increase risk perception, thereby prompting adaptive actions (Labossière & McGee, 2017; McCaffrey, 2004). Among members of the participant group, most either maintained a high level of preparedness and engagement with wildfire issues or increased their activities, seemingly supporting this link. Several participants expressed a sense of heightened momentum behind FireSmart initiatives, noting that “the sell got a little easier after the fires” [P4]. Others indicated that the experiences of the 2015 wildfire directly changed their perception of risk, making them realize that they needed to do more to prepare for future wildfire events.

Other scholars (e.g., McGee et al., 2009; Schumann et al., 2020), however, have found that a causal relationship between experience and mitigation is not clear and that several other factors need to be considered to fully understand the relationship between lived experience, risk assessment, and mitigation and planning efforts (Kramer et al., 2021; Martin et al., 2009). The results of this study show similarly complex relationships between lived experience, risk perception, and mitigation behaviors. Other factors such as capacity and education affected the relationship between lived experience and behavior change. For example, one participant indicated that after the wildfires, she was more willing to learn about FireSmart and then take mitigation actions. In this case, social connections, and access to information through FireSmart facilitated a link between lived experience and behavior change. Still others indicated that the same obstacles that existed prior to the wildfires persisted afterwards, so despite a greater awareness of the risks, a behavioural change was unlikely. One participant expressed a sense of powerlessness and a *laissez-faire* attitude toward wildfire: “We are resilient people. We accepted the fact that if we lose it, we lose it. We weren’t agonizing over it because there was nothing we could do, right? We knew it was out of our control” [P3]. This response speaks to Martin’s study, which suggested that self-efficacy was a key factor, along with the call for emphasis on risk reduction (not risk elimination), to avoid all-or-nothing thinking (Martin et al., 2009). These examples indicate that intervening factors can facilitate or prohibit lived experience translating directly into action. Deeper, locally specific understanding of these factors may support individual mitigation activities and guide community goal setting.

#### 6.4.2 Practical Challenges of Implementation

Two practical, if overlapping, challenges to PDL arose from the data: logistical challenges and engagement challenges. Logistical challenges include limited time and financial resources; equitable and timely access to physical or virtual spaces; identifying a social structure to host the learning process; accessing information; communication methods and currently, the COVID-19 pandemic and its many restraints on gathering, travel, and other logistics. These insights are not unique to this research but are also pointed out in the literature (Prior & Eriksen, 2013; Sharpe, 2016) and in the *Aboriginal Disaster Resilience Guide*, which routinely acknowledges practical matters, such as that some engagement exercises are simply unworkable with a large group of people (Aboriginal Disaster Resilience Planning, 2015a). These practical concerns are often at the root of problems related to engagement, diversity and inclusion in leadership, mitigation and preparedness actions, and others (Enarson, 2001).

The second challenge relates to engagement more specifically. About one-quarter of the participants shared their reluctance to engage with wildfire management at the community level due to a sense of estrangement from either the other people in the community or the governance structure, or both. Some community members described real social barriers preventing their full engagement with wildfire management at the community level, for example, the participant who noted that “it doesn’t feel open to everybody so even if I knew that they were doing a debriefing or meeting about it, I probably wouldn’t have attended because I wouldn’t have personally felt welcome” [P11]. This participant went on to suggest that external facilitators with de-escalation and debriefing training may be able to bridge community-level gaps in the post-disaster period. As previously mentioned, those who already feel alienated for whatever reason may feel hesitant to engage in wildfire management, exacerbating their marginalization. This finding corresponds with an example from Scolobig et al., (2015) who pointed out the complexities of deep engagement at the community level. In their example, a participatory process actually exposed and increased conflict for a while. They suggested two strategies to manage these challenges: to engage relevant wildfire experts (e.g., wildfire management officials) and to involve those with specialized training or skills in “conflict resolution, engagement, deliberation exercises and processes” (Scolobig et al., 2015, p. 209). Identifying and recruiting such supports may well be

outside the capacity of a small community, pointing back to the first challenge: the logistics of finding resources to meet communities' needs. However, provision of this type of support may be possible from government or NGOs.

While these are not the only challenges of PDL in general, they are two of the more pressing concerns when applying evidence arising from the data. The next section keeps these challenges in mind when discussing some suggested focal points for applying the framework in the study communities.

## **6.5 Conclusion**

This chapter began by discussing the principles and strategies that primarily form our co-developed framework for community-based PDL, followed by a presentation of the framework to provide a basis to better understand its content and arrangement. I then discussed some of the benefits and challenges of practically applying the framework at the community level. The next chapter summarizes this research, noting contributions to knowledge and practice, limitations, and future research opportunities. I also make a series of recommendations to the study communities, government, authors of future disaster guides, and NGOs, before drawing to conclusion.

## **CHAPTER SEVEN: RECOMMENDATIONS AND CONCLUSIONS**

This chapter begins with a summary of the key results related to the research question and objectives. Next, I reflect on some of the key findings related to SIFs, sustainability goals, wildfire management guides, and participant experiences. I also outline the contributions to scholarly knowledge and practice and make recommendations. Lastly, I review the limitations of the study and propose opportunities for future research before making my final conclusions.

### **7.1 Summary of Research Objectives and Findings**

This research aimed to support the empowerment of rural communities to engage in post-disaster learning to inform future preparations and responses to wildfire. It did so by focusing on two rural communities in northern SK following wildfires in 2015. The specific objectives of this research were as follows:

- 1) identify the key social identity factors that shaped communities' experiences of wildfire disasters;
- 2) document the effects of different social strategies used by two small, rural SK communities during the 2015 wildfires; and
- 3) stimulate a process for post-disaster learning by co-developing a community-based framework focused on social dimensions of wildfire to guide future community wildfire management plans.

Objective one was addressed through the finding that social identity factors impacted experiences of the 2015 wildfires; specifically, socioeconomic status, geography, gender, and age were found to be the most influential on the participant group. Further, it was evident that there were variable ways and degrees to which these SIFs were influential, often dependant on how an individual's social identities intersected. Social identity factors were found to produce different ways of being vulnerable and resilient. Additionally, the document analysis revealed



that these social identity factors were typically not addressed in a meaningful way in community-based wildfire management guides, with the exception of the *Aboriginal Disaster Resilience Guide*. This guide offered substantial, practical direction to community leaders to tailor plans and practices based on locally relevant SIFs of influence. These findings are expressed in the framework via the principles, especially *Inclusivity and Belonging*, *Connection to Place*, and *Understandings of Resilience, Risk, and Vulnerability* and the strategies *Engage*, *Reflect*, and *Lead and Govern*. These principles and strategies are especially prominent in the early stages of the framework for PDL; this helps inform the outcomes of the latter stages with meaningful knowledge about the intersectional experiences of the people in the community.

This research addressed objective two through 18 interviews and a workshop with Napatak and Wadin Bay residents, which identified several social strategies that were used by the communities through the wildfire management cycle, including *Communicate*; *Lead and Govern*; *Engage*; *Educate*; and *Collaborate*. These strategies were incorporated into the framework as the engines that activate and mobilize learning around the principles.

Finally, objective three was the focus of the workshop, where interview participants re-engaged with the key terms to produce a framework for PDL. The revised framework was designed to stimulate a process that might guide Napatak, Wadin Bay, and other rural Canadian communities in learning about the social dimensions of wildfire based on lived experience. The results indicate that certain foundational issues are important to address early on, such as social cohesion, i.e., the principle *Inclusivity and Belonging*. Only once people feel they belong, are valued, and meaningfully engaged, can organizing, planning, and action take place. An unexpected result was that participation in the research itself functioned as a stimulant for some, fostering reflection and new social connections.

## **7.2 Social Identity Factors in the Context of Wildfire**

The literature on wildfire and other disasters shows that social identity factors (SIFs) influence people's experiences of these events and that the most influential SIFs can vary by situation (Christianson et al., 2014; Dominey-Howes et al., 2014; Scharbach & Waldram, 2016). The data

from participants in this study support these assertions. Certain SIFs appeared to affect participants' experiences of the 2015 wildfires more prominently than others, including gender, age, socioeconomic status (SES), and geography. These SIFs primarily affected the participants as a group.

Since these results are specific to the participants from Napatak and Wadin Bay, it is likely that another community with different circumstances (e.g., geographic, political, or economic environments) may find other SIFs to be prominent. For instance, geography was a key SIF for the Northern communities of Napatak and Wadin Bay, with about one-third of participants emphasizing the importance of their identity as Northerners. Northern Saskatchewan, as a census region, comprises just 3.4% (Statistics Canada, 2017a) of the provincial population, whereas the two largest urban centres in southern Saskatchewan comprise 48% of the population (Statistics Canada, 2017b, 2017c). This identity factor – being a Northerner – was often discussed with a strong sense of pride, belonging, and connection; it was also discussed with a sense of distinctiveness and marginality from the rest of the province (e.g., Northern-ness as 'otherness'). Therefore, geography may be expressed differently by a rural community elsewhere in Saskatchewan. Additionally, participants pointed to a distinction in experiences between full-time and part-time residents. Their observations supports Martin et al.'s (2009) findings on the connection between resident status and mitigation efforts.

The results also support findings about gender differences in wildfire experiences. Specifically, gendered differences in evacuation decisions seem to align with what others have found (Walker et al., 2021; Whittaker et al., 2016). For example, Walker et al. (2021) found that normative gender roles were influential in responses to wildfire finding that men were more likely to stay and defend property while women were more likely to evacuate. These decisions were also influenced by socioeconomic status, that is, many of those who stayed also had relevant skills and knowledge from their employment history. However, since not all those who remained in the community were interviewed, these observations may not be fully formed. However, we do know that when Wadin Bay was evacuated, the majority of those who remained were men; the women who stayed contributed to the efforts through support work such as cooking. This

division of labour reflects the findings in an Australian setting despite a different policy context (Walker et al., 2021; Whittaker et al., 2016).

Researchers have argued that feminist standpoint theory (FST) and an intersectional lens can help understand how multiple identity factors intersect (Kaijser & Kronsell, 2014). Intersectional studies are beginning to demonstrate how such an approach can foster a deeper understanding of the social dimensions of climate change, disaster, and wildfire experiences (Masud-All-Kamal et al., 2021; Vickery, 2018). Empirical, intersectional feminist research has demonstrated the value in exploring how gender and other intersecting social identity factors influence the experiences of people in wildfire and other disasters (Méndez et al., 2020; Walker et al., 2021), highlighting that certain knowledge and experiences were more visible through an intersectional lens. Similarly, I found that using intersectionality in this research design helped to focus attention on questions of power, participation, and the influences of identity factors (see Table 2.1); this multi-layered analysis facilitated a deeper understanding of community members' experiences including their challenges, assumptions, sense of agency, etc. As a result, this study similarly uncovered that multiple, intersecting SIFs affect experiences of wildfire. For example, two women participants of approximately the same age [P3 and P4] identified different vulnerabilities and modes of resilience for themselves and the communities. One woman cited gender and age as primary intersecting factors that limited her capacity to take mitigative actions, whereas the other identified gender and SES as primary drivers in similar mitigative actions. Intersectionality also supported the exploration of power and participation by encouraging a focus on those "on the margins" (Atallah et al., 2019, p. 16) who may carry situated knowledge and strong objectivity (Haraway, 1988).

In these communities, given that the results indicate gender, age, SES, and geography as primary SIFs of influence, it may be useful to strive for diverse representation in leadership. Diverse perspectives from leadership may facilitate broader community participation and insights into how to address challenges and opportunities related to people's social identity factors. Further, with a greater degree of community participation, each community may find additional SIFs to be prominent and worth addressing with targeted strategies. For example, in terms of age, the average participant in this research was in their 50s, and many were retired or semi-retired, with

just two interviewees under 40 years of age. Methodologically, a broader cross section of ages would have been preferable in the participant group. However, the engagement in this research reflects participants' comments about an age-based engagement issue: Participants noted that younger people in the community were less likely to be involved in wildfire management in the community. If younger people were more involved, community leaders may learn that younger community members face different challenges and opportunities based on other factors—perhaps their employment and family lives. For this reason, a process may be beneficial through which communities can identify for themselves the greatest influences.

Napatak and Wadin Bay are already highly engaged in wildfire management work, primarily through the FireSmart program. However, FireSmart does not provide guidance to community members on how to navigate challenges and opportunities around the social dimensions of wildfire. In fact, as a group, the wildfire management documents that were analyzed do not reflect the importance that SIFs may play in community-based wildfire management, especially in the recovery stage. The key SIFs identified by participants were not all well-represented as key factors in wildfire management. Age and SES were identified as having some 'meaningful' representation and discussion within the wildfire documents, though geography and gender were not well-represented, nor were many other SIFs such as citizenship/immigration status, education level, faith-based identities, language, place-based identities, or sexuality. Importantly, there was a noticeable lack of intersectional awareness in the documents. Likewise, the documents lacked any attention to sexuality, especially in light of what is known about challenges faced by the queer community—in disasters or otherwise (Dominey-Howes et al., 2014). This omission, which puts already traditionally marginalized people at a disadvantage when it comes to wildfire and other disaster situations, is a lost opportunity. As we know that different communities (and individuals) are going to identify different priority SIFs, there is an opportunity to shore up the available supports to communities, so they may work towards socially sustainable, community-based wildfire management.

### 7.3 Disconnections between Sustainability Goals, Wildfire Management Guides, and Participant Experiences

In general, the results of this research suggest that the social sustainability goals are not being met—at least based on the data from the study communities of Napatak and Wadin Bay—in part, perhaps, because social issues are not a key focus of community-based wildfire management guides.

At the provincial and federal levels, Canada has prioritized social sustainability as a component of climate change and disaster management policy (e.g., the Sendai framework, the United Nations Sustainable Development Goals, the Paris Agreement). The academic literature on social sustainability and disasters largely aligns with policy, increasingly calling for greater focus on social and cultural components of sustainability. Specifically, we see calls for greater inclusion of marginalized groups (Atallah et al., 2019; Sharpe, 2016); greater involvement and prioritization of Indigenous Peoples and Knowledge (McGregor, 2021; Wong et al., 2020); locally-specific research and practice (Adger, 2003; Paveglio et al., 2018); transformative, reflective, and reflexive practices (Haque et al., 2021; Sharpe, 2021; Walker et al., 2021); collaborative and accessible practices (Labossière & McGee, 2017; Owen, 2020); and others. For example, Imperiale and Vanclay (2016) found that equity, public awareness of sustainability, participation, and social cohesion were key elements of “resilient actions of people in post-disaster situations” (p. 215).

However, in general, the wildfire management documents reviewed (all of which were developed by government or with the substantial support of government) did not reflect these policy priorities. Only two of the seven documents reviewed meaningfully addressed social issues to any degree (the *Aboriginal Disaster Resilience Guide* and the *B.C. Toolkit*). In particular, the *Aboriginal Disaster Resilience Guide* was notable in prioritizing attention to some SIFs, social cohesion, and other aspects of social sustainability in community-level disaster management. In 2021, the Aboriginal Disaster Resilience Planning website was redeveloped to form the *Community Disaster Resilience Planning* program (Justice Institute of British Columbia, 2021). Although not analysed to the same degree as its predecessor, a cursory review

of the redeveloped program shows it is similar to the Aboriginal Disaster Resilience Guide and likely can continue to support communities in similar ways.

The participant data reflected the value of and desire for a greater focus on the social dimensions of wildfire at the community level. Participants identified numerous principles and strategies as key factors that affected their experience of wildfire. They also expressed interest in participating in a PDL process both to learn and to share their knowledge with others. Yet, where the communities have made advances in these areas, it was often due to their grassroots initiatives and personal experiences, strengths, knowledge, and skills. In this regard, members of Napatak and Wadin Bay have demonstrated numerous ways of being resilient, resourceful, adaptive, and, at times, even transformative. However, they have done so without a structured process, specific training, or external supports to support these much-desired endeavours.

#### **7.4 Contributions to Scholarly Knowledge and Practice**

This research contributes to two separate but related bodies of scholarly knowledge. The first is in relation to sustainable wildfire management and adaptation via learning from disaster experience, previously identified as an area in need of further investigation (Christianson, 2015; Dodd et al., 2018; Enarson, 2001). This research supports the existing literature which promotes that bottom-up approaches to adaptation are effective and that social learning can produce locally relevant and effective solutions to locally identified challenges. This research also makes contributions to ongoing academic discussions on the social dimensions of climate change and disaster impacts, specifically contributing to the still relatively small body of intersectional research on climate change and disaster impacts (Djouidi et al., 2016; Walker et al., 2019). An intersectional lens has the potential to identify nuanced experiences of climate change and disaster impacts (Masud-All-Kamal et al., 2021; Vickery, 2018); this research contributes one more example of the utility of such a lens by demonstrating important variations within a singular community and within social identity groups. A critique of intersectionality has been that it is difficult to apply in empirical research (Walker et al., 2019); this research contributes a means of application. Further, intersectional research pays particular attention to power, participation, agency, learning, action, and change – all key concerns in climate change

adaptation and disaster management (Atallah et al., 2019; Sharpe, 2016; Walker et al., 2019). This research contributes important perspectives about participation and agency at the community level. Relatedly, this research used Feminist Standpoint Theory (FST) as its primary methodology. Like intersectional research, use of FST as a methodology is uncommon and as such this study offers an example for future researchers seeking to use FST. Notably, FST enabled emphasis on perspectives with strong objectivity (perspectives which can see from the dominant perspectives as well as from their own marginalized perspectives).

Methodologically, this study was novel in its use of virtual methods, most notably in the facilitation of an entirely virtual, two-part workshop. While this study was not designed to be fully community-based participatory research, from the outset it was designed to foster genuine and significant participation, learning through doing, and power sharing – all elements of community-based participatory research design (Patton, 2015; Rhodes et al., 2010). The COVID-19 pandemic asked researcher and participants alike to expand their ideas about how to foster such connection and engagement, resulting in some methodological creativity and experimentation.

Ultimately, we tested the usefulness of combining new technologies (Google Jamboard) and old ones (one-on-one phone conversations between participants), finding that they offered opportunities for shared learning and interaction. The data from the one-on-one participant phone conversations was particularly rich; indicating that despite no face-to-face contact, a private conversation provided a forum through which people were able to make meaningful connections with the data and with each other. The use of an online workshop space such as Google Jamboard was useful for presentation of the framework, and while participants made good use of the online tool and provided interesting and unique constructive criticism and feedback, the forum did not foster much discussion among the group. This may be related to people's access to and familiarity with the software. This might also indicate that such a tool is more useful for presentation of materials and minor revisions, but less useful for in-depth discussion. These insights contributed to a re-thinking of how we might engage in on-going community engaged research, even once travel bans and social restrictions are lifted following COVID-19.

Finally, the co-developed framework contributes one approach to address the gap found in the wildfire management document analysis and the experiences of participants; this is the absence in present tools, guides, or processes that can guide rural Canadian communities through a process of collective learning from experience with wildfire. This framework was created specifically by and for the rural communities of Wadin Bay and Napatak and in a wildfire context; however, other rural Canadian communities that experience a disaster, or disaster threat, may wish to apply the framework to their own communities. There is nothing inherent in the framework that precludes its use in other communities or other disaster contexts; it is clear that the key elements (e.g., the stages, principles, strategies) are not entirely unique to Wadin Bay or Napatak nor to wildfire (Eriksen & Prior, 2011; Paveglio et al., 2018; Sharpe, 2016). Such communities may find it useful to use this existing framework as a place to begin their process; as one workshop participant noted, a community may identify any stage to begin and follow the iterative steps.

## **7.5 Recommendations**

Based on evidence from the documents, interviews and workshop, the following recommendations are directed to various audiences, beginning broadly with a recommendation to government (Recommendation #1). Then, there are recommendations to non-government organizations (NGOs) which develop guides and tools to support people at the community level (#2 and #3). One recommendation is targeted at future authors of wildfire and other disaster guidebooks. Finally, I make recommendations at the community level, some of which are intended for any rural Canadian community (#5 to #8) while the last are directed at the study communities of Napatak and Wadin Bay (#9 and #10). The majority of the recommendations are targeted at the community level because this research focused at and sought to affect change at that level.



Table 7.1 Recommendations

	Recommendation	Description
Government	1: Support pathways for bottom-up communication practices between government and communities throughout the disaster management cycle.	Government should support the development and implementation of bottom-up communication practices which “let the community teach the responders” (O’Sullivan et al., 2013, p.243). Meaningful participation means prioritizing engagement and communication with communities and willingness and capacity to incorporate teachings into policy and practice. Such pathways should employ an all-of-society approach to gather knowledge from communities with lived experience. These communication practices would facilitate knowledge transfer from communities regarding specialized needs, risks, vulnerabilities, and knowledge so that they communities can be better supported in future wildfire or other disaster events. It would also improve the knowledge and practice of the responders and others with decision-making authority throughout the wildfire management cycle.
Non-governmental organizations	2: Mainstream social sustainability in wildfire and other disaster management guides.	NGOs that endeavor to support community-level disaster planning should broaden their scope to address the social dimensions of wildfire and other disasters so as to embody a holistic approach to sustainability. Partnerships between such NGOs may reduce redundancy while co-promoting each other’s work. In particular, conceptual tools such as intersectionality as well as Indigenous Knowledges can support the process of mainstreaming by bringing attention to the complexity inherent in social sustainability issues.
	3: Develop and incorporate mechanisms for post-disaster learning in wildfire and other disaster guides, tools.	NGOs can support rural Canadian communities to engage in PDL, specifically regarding the social dimensions of wildfire, through provision of tools (such as the PDL framework), training, facilitators, and other resources (e.g., financial support). Amendment to existing community-based wildfire management guides would be most efficient. Such learning mechanisms should be informed by transformative and social learning theory and Indigenous Knowledges, as appropriate.

Authors of community-based wildfire/disaster guides	4: Inform future guidebooks by drawing on diverse perspectives and approaches while promoting holistic, locally specific guidance throughout the disaster management cycle.	Future wildfire and other disaster management guides targeted at the community level – as well as their authors – should consider how multiple social identity factors and power structures intersect to produce differential experiences of wildfire and response/resilience. Future guides should address community-specific barriers, challenges, knowledges, adaptive strategies, and forms of resilience that may stem from people’s diverse social identities such as those related to gender, sexuality, age, disability and health status, culture, education level, etc. To support this, authors can employ Gender Based Analysis Plus (Status of Women Canada, 2018) to mainstream such considerations into planning for future hazard events. Specific examples might include using inclusive and accessible language and minimizing barriers for low-income community members. Where a given document is limited in scope or subject matter, identify and promote other tools that address such limitations (e.g., Disability Alliance B.C., 2016). Guides should support holistic, sustainable, adaptive community engagement through all stages of the disaster management cycle, including post-disaster learning.
Rural Canadian communities	5: Improve internal communications at the community level by targeting un- or under-involved groups or individuals.	<i>Communicate</i> , as a key strategy and potentially significant barrier, should be a top priority in community-level wildfire/disaster management planning. As such, it is recommended that community members identify groups and individuals within the community that are uninvolved (or under involved) and use targeted communication strategies to promote engagement. Both grassroots communications strategies that have proved effective in the past and novel strategies should be identified and implemented.
Rural Canadian communities	6: Employ virtual communication methods at the community level.	At the community level, virtual methods of communication may be used to overcome communication barriers such as part time resident status. These methods include use of social media, scheduling tools, and asynchronous meeting which may support communication with and engagement of people who are challenged due to childcare or certain types of employment (e.g., shiftwork).

Napatak and Wadin Bay	7: Foster inter-community relationship building.	Grassroots partnerships and strategy coordination (such as establishing communication processes) may alleviate future burdens and stressors such as those experienced in the 2015 wildfires. For example, Napatak and Wadin Bay have a pre-existing relationship which appears well-suited to cross-community learning and support. Additionally, other nearby communities and local governance bodies such as Sucker River, La Ronge, and Lac La Ronge Indian Band may prove to be supportive, capacity-enhancing, mutually beneficial partnerships.
	8: Implement existing tools.	While high-level changes should occur to meet community's current needs, communities can immediately and simultaneously implement existing tools. In Wadin Bay and Napatak, FireSmart mobilized communities with regard to physical and technical aspects of wildfire management; the <i>Aboriginal Disaster Resilience Guide</i> (now the Community Disaster Resilience Guide) could supplement FireSmart with its emphasis on social and cultural aspects of sustainable disaster management. Other such tools may be simultaneously investigated and employed to holistically develop disaster plans (e.g., Disability Alliance B.C., 2016). Finally, application of the PDL framework has potential to benefit the study communities and other rural, Canadian communities.
	9: Individually and collectively reflect on understandings of resilience, risk, and vulnerability.	The concepts of resilience, risk and vulnerability are foundational to how people prepare for, experience, and respond to wildfire and other disasters (Arora, 2020; McGee et al., 2009; Sharpe, 2021). As such, it is crucial to at least recognize the diversity of how such concepts are understood within a community, and at most create shared understandings of these foundational concepts.
	10: Develop targeted strategies to foster engagement through all relevant stages.	Creative and targeted engagement strategies can broaden the reach of wildfire and other disaster management activities. Engagement strategies should aim to develop “the willingness of interest groups and community members to acknowledge the value of the [project]” (Aboriginal Disaster Resilience Planning, 2015a). Examples include use of social media, local media, and events, and can focus on experiential learning and interactive experiences, such as family fun days or storytelling events. Such strategies should be locally tailored, accessible, applied at various stages of the disaster cycle, and address the obstacles preventing engagement within the community.

## 7.6 Limitations and Future Research Opportunities

It is important to note my role as researcher in this study. While considerable efforts were made to reflect on, acknowledge and address my own bias and positionality, the researcher is always a part of the research process as an “instrument of inquiry” (Patton, 2015, p.47). As such, researcher bias and my own situated and partial knowledge is a limitation in this research. The research limitations encountered in this research suggest several possibilities for future studies.

One such limitation was the methodological constraint of a modest sample set, split between just two communities. While a sample set of 18 interviews is methodologically defensible, it would be useful to see how a similar process of framework development might occur in additional communities and with larger, more diverse groups. For example, majority of the interview participant group in this study was aged 50 and older; a younger participant group may provide differing insights. Additionally, this research did not engage with Indigenous communities, nor did it primarily employ Indigenous-specific methodology or theory. Yet, some notable results suggested a link between Indigenous and Northern identities and connection to place. This research cannot speak to this overlap extensively but proposes that future research is undertaken in alignment with the work that Indigenous scholars are already exploring (Christianson, 2015; Christianson et al., 2014; McGregor, 2021) and in ways that address the need for researchers in Canada to address the calls to action for reconciliation (Wong et al., 2020).

Another limitation in this study was imposed by the onset of the COVID-19 pandemic, which limited researcher and participant in-person engagement for majority of the research process. Research methods were adapted, and participants persisted in their desire to engage, yet it is worth asking what might have been different (including who might have participated) if the virtual conversations were instead face-to-face in a familiar setting within the community. Alternatively, the challenges that came with the pandemic might be seen as a research opportunity; the adapted approaches to engagement and data collection might themselves be worthy of future research. Refining virtual approaches to deep and meaningful engagement with and among communities could open opportunities to conduct research with hard-to-reach communities. Whether remote or in person, a next research step might include a more hands-on

approach to investigating a post-disaster learning process in which researchers and community members work together, such as is described in this thesis. In this way, a framework such as the one shared here might be empirically tested out and further refined in a more thoroughly participatory manner.

This research sought to review Canadian wildfire management guides for community use. Broadening the scope to include relevant international documents might identify tools and processes that may be applicable in a Canadian context. This research also focused on guides (tools, processes, etc.) but not policy. A more policy-focused investigation could shed light on potential best practices from initiatives related to post-disaster, community level support. A policy focused research agenda might examine the landscape from various policy angles such as climate change adaptation, public health, public safety, women and gender equity, and support of Indigenous and Northern communities.

## **7.7 Final Thoughts**

Climate science indicates that climate change will lead to increasingly frequent and intense disaster events such as wildfire (Gaur et al., 2021; Wotton et al., 2017). How people experience these disaster events are affected by the existing social landscape, including institutions, processes, and people. High-level shifts in scholarship and policy are occurring to reflect this reality. Increasingly, it is evident in international agreements, federal policy, and academia that attention to the social dimensions of climate change impacts as well as disaster experiences is essential to sustainably address the challenges ahead. Yet, this knowledge has not thoroughly affected on-the-ground practices sufficiently, as we still see individuals and communities struggle, often in ways that perpetuate existing inequities. For example, we see this in the experiences of low-income women in the Hurricane Katrina disaster (Pardee, 2009), the experiences of women in Nepal during the 2015 earthquake (Rajbhandari, 2016); and the experiences among homeless individuals in the 2013 Colorado floods (Vickery, 2018). In Saskatchewan, closer to the research setting of this study, we also see it through the evacuation experiences of members of Hatchet Lake Denesuline First Nation (Scharbach & Waldram, 2016) and in La Ronge in the 2015 wildfire season (Walker et al., 2021).

Until such time that it is abundantly evident that top-down approaches are effective in mitigating disproportional harm to marginalized communities, and because of the large body of work demonstrating the value of bottom-up approaches, a focus on community-based resilience, capacity building and adaptations should be prioritized. There are strong arguments for bottom-up approaches, small-scale specificity, and keen awareness of how existing social structures, processes, and identities can enhance resilience and adaptive capacity to disasters (Atallah et al., 2019; Sharpe, 2016; Walker et al., 2019, 2021). This research adds support for these arguments, demonstrating that both critical knowledge and action come from lived experience, and the local-scale capacity for action, change, and adaptation.

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## APPENDIX A: ASSESSING THE RESEARCH DESIGN

This research took a social constructionist approach to knowledge creation, guided heavily by intersectional feminist influences as well as participatory and pragmatic (i.e., practical and useful) influences. Below, I use Patton’s (2015) “alternative sets of criteria for judging the quality and credibility of qualitative research” (p. 680) to summarize and assess the overall research design (Table A.1). Patton’s (2015) criteria are one way of categorizing and assessing various types of qualitative research, four of which are applied to this research (in order of importance). The left column summarizes the four categories, with the respective criteria for judging the quality and credibility of each in the middle column. The right column summarizes the elements of this research design that sought to add quality and credibility to this research. Each choice within this research design was made to address one or (ideally) more of the criteria for quality and credibility and create cohesion of the overarching research design.

Table A.1 Summary of research design in relation to Patton’s (2015) criteria

Category of qualitative research	Patton’s criteria for judging the quality and credibility of each category of qualitative research	Elements of this research design that mobilize quality and credibility
Constructionist research	Subjectivity acknowledged (e.g., reflexivity/positionality) Relationship-based Triangulation (including multiple perspectives) Particularity (attention to context specificity) Transferability (not generalizability) Credible to and deemed accurate by contributors	Methodology (FST) Methods (Interviews, workshop) Relationship building activities (especially at the beginning and end of research process) Constant comparative analysis technique
Critical change research (including feminist research)	Attentive to inequalities/injustices Attentive to power dynamics Focused on praxis/practice, capacity building Identifies change-making strategies Focused on users and action Engages those with less power	Methodology (FST) Methods (interviews, workshop) Output (PDL framework) Constant comparative analysis technique Maximum variation sampling technique

Participatory research	<p>Genuine and significant participation</p> <p>Shared power and inclusion throughout research</p> <p>Builds capacity through learning by doing</p> <p>Group reflexivity and ownership</p>	<p>Methodology (drawing on CBPR principles)</p> <p>Methods (Workshop)</p>
Pragmatic research	<p>Actionable and practical to users</p> <p>Engages users, credible to users</p> <p>Applicable to real world issues</p>	<p>Methodology (drawing on CBPR principles)</p> <p>Methods (Document analysis, interviews, workshop)</p> <p>Output (PDL framework)</p>



## APPENDIX B: DOCUMENT SEARCH STRATEGY

The search strategy included four main steps: 1) an advanced internet search; 2) a search of government documents using a custom google search engine; 3) a search of the University of Saskatchewan library catalogue; and 4) a manual search of all federal, provincial, and territorial government websites. Leads that arose from these searches were also investigated. In each step of the search process, multiple searches were conducted to allow for a variety of terms (see Table B.1). The search strategy was multifaceted, though efficiently designed so that each of the four steps was done on a single day and all within 25 days of one another.

Table B.1 Document analysis search terms and results

Search type	Variable search terms	Consistent search terms	Number of results reviewed	Totals
Step 1: Advanced internet search	Forest fire	“Community” and “tool or toolkit or workbook or template or guidebook or guide or strategy or framework”	50	230
	Wildland fire		50	
	Wildfire		50	
	Disaster emergency		80	
Step 2: Custom Google search	Forest fire	“Community” and “tool or toolkit or workbook or template or guidebook or guide or strategy or framework”	31	122
	Wildland fire		33	
	Wildfire		31	
	Disaster emergency		27	
Step 3: Library catalogue search	Forest fire	“Community” and “tool or toolkit or workbook or template or guidebook or guide or strategy or framework”	4	223
	Wildland fire		19	
	Wildfire		100	
	Disaster emergency		100	
				575

When using a search engine (steps one, two and three above), four separate searches were conducted to allow me to search for a variety of terms. While the search process undertaken may ultimately have omitted some very difficult-to-find or outdated documents, I believe it captured

those documents that would likely be found by rural communities should they conduct a similar search. Table B.1 provides a summary of the search type, terms, and results from each.

In step one, I reviewed at least the first 50 results for all four searches, continuing to review until there were 30 consecutive results that did not produce an inclusion. In total, I reviewed 230 results in the first step. In step two, I used the same search terms, resulting in the review of all 122 results. For step three, I used the same search terms, and I reviewed the top 100 results, reviewing 223 in total. For each result, I used the inclusion and exclusion criteria to determine if it should be shortlisted; most results were quickly determined to not fit the criteria. For those shortlisted, subsequent, thorough review was conducted to ensure all criteria were met. The criteria for inclusion or exclusion are detailed in Table B.2.

Table B.2 Document analysis inclusion and exclusion criteria

<b>Inclusion criteria:</b>	<b>Exclusion criteria:</b>
Published in and for use in Canada	Not published within or for use in Canada
Produced/published after January 1 <sup>st</sup> , 2010	Produced/published prior to January 1 <sup>st</sup> , 2010
Available in English	Not available in English
The most current and final version of the document	A draft or an earlier version of a document which has since been updated
Intended for communities <sup>1</sup>	Not intended for communities (e.g., strictly intended for policy development, research, etc.)
Implicitly or explicitly applicable to wildfire, including documents intended for disasters in general if reasonably applicable to wildfire	Neither implicitly nor explicitly applicable to wildfire plans, disaster related but not reasonably applicable to wildfire

These three searches were each conducted on a single day within three weeks to capture the relevant data within a relatively short period. Because Google's search algorithm changes over time, the exact search results may not be precisely reproducible, but because these types of documents are not produced in high volume, attempts to reproduce the results would likely

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<sup>1</sup> As discussed in Chapter Two, 'community' here is largely defined by those living together in a shared geographic area as it is proximity to the threat of wildfire that is of interest. It also recognizes that inclusion in a community may be more than just living in a particular place; community also entails a social connection and self-organization. Importantly for this discussion, community is not intended to reflect wholly virtual communities or larger geographic boundaries (such as at the provincial level).

generate similar results. The strategies were used together to minimize the risk of missing relevant documents and to mimic the kinds of searches that community members may themselves embark on.

Finally, in step four, I manually searched the government websites of the three Canadian territories, ten provinces and the federal government website as well. Of the 14 government websites reviewed and 575 search results, seven documents were included in the end.

## APPENDIX C: DOCUMENT ANALYSIS NODE TREE

### Definitions

- Adaptive capacity
- Climate change
- Community
- Disaster
- Disaster Management
- Emergency
- Exposure
- Extreme events
- Gender
- Hazard
- Identity factors
- Learning
- Mitigation
- Post-disaster learning
- Preparedness
- Prevention
- Recovery
- Resilience
- Response
- Risk
- Sensitivity
- Social factors
- Social identities
- Social learning
- Vulnerability

### Scope

- Intended audience
- Intended time for use
- Proposed partners-supports
- Purpose
  - Purpose - Disaster
  - Purpose - Wildfire
- Recommends/directs to FireSmart
- Stages of disaster management
  - Mitigation & Prevention
  - Preparedness
  - Recovery
  - Response

### Accessibility & Inclusivity

- Communications
- Inclusivity
- Investments & accessibility

### Social Identity Factors and Influences

- Ability & disability
- Age
- Citizenship or immigration status
- Culture
- Economic status & income
- Education level
- Ethnicity
- Faith-based identities
- General reference to social dimensions
- Health status
- Intersectional awareness
- Language
- Place-based identities
- Sex & Gender
- Sexual orientation
- Social cohesion

### Post-disaster Learning

- Directs elsewhere for PDL
- Implementing PDL
- Measuring PDL
- Mechanisms for PDL
- Mobilizing PDL
- Outcomes for PDL

## **APPENDIX D: INTERVIEW CONSENT FORM**

### **Social Dimensions of Climate Hazards Project:**

Learning from wildfire: Understanding the social dimensions of community response

### **Participant Consent Form**

#### **Student Researcher**

Tina Elliott, Candidate, Master of Environment and Sustainability  
School of Environment and Sustainability  
University of Saskatchewan  
306-850-1241  
T.Elliott@usask.ca

#### **Supervisor, Project Lead**

Maureen Reed, PhD, Professor  
School of Environment and Sustainability  
University of Saskatchewan  
306-966-2298  
Maureen.Reed@usask.ca

#### **Committee Member, Project Lead**

Amber Fletcher, PhD, Associate Professor  
University of Regina  
306-585-4183  
Amber.Fletcher@uregina.ca

#### **Purpose and Objective of the Research**

- The purpose of this research is to support the empowerment of rural communities to engage in post-disaster learning that will inform future preparations and responses to wildfire.
- The objectives of this research are to better understand how social identity factors shape communities' experiences of wildfire disasters; to compare the effects of different social strategies; and stimulate a process for post-disaster learning by co-developing a community-based framework focused on social dimensions of wildfire to guide future community wildfire management plans.
- This research may also help create more socially inclusive climate adaptation policies that are beneficial to communities, while also contributing to academic knowledge on climate hazards.

#### **Procedures: Interview**

- You have been invited to participate in an **interview** with a member of the research team (approximately one hour).
- This interview will be conducted over the phone or by private online video call.
- At the end of this form, you can provide your consent for this interview.
- We will ask your permission to record all interviews.
- All recordings are kept confidential (please see more on confidentiality below).
- Only Tina Elliott, Dr. Reed and Dr. Fletcher will have access to the recordings or transcripts. We will not share this information with anyone else.
- Please let us know before the interview if you do not wish to be recorded. Interview participants can choose to have the recording device turned off anytime they want.
- The findings of this study may be used in presentations, written reports, policy briefs, or other documents. Although we might use quotations in our presentations or reports, your name will not be attached to anything you said.
- Feel free to ask any questions about the procedures and goals of the study or your role.

- You are not required to answer any questions if you don't want to.

### **Confidentiality**

- In any final reports or presentations coming from this research, your name will be removed and will not be attached to anything you said.
- The researchers named above will have access to the information you provide.

### **Right to Withdraw**

- Your participation is completely voluntary. You can choose to answer only questions that you are comfortable with.
- Whether you choose to participate or not will have no effect on your relationship with the research team or the Universities and will not affect how you will be treated by these people or organizations.
- Should you wish to withdraw your interview, please notify Tina Elliott immediately. Withdrawal will be possible up until the point that your interview is coded, and the analysis has begun (approx. 1 month after the interview). After this date, it may not be possible to withdraw your data.

### **Funding**

This project is funded by the Social Sciences and Humanities Research Council of Canada.

### **Potential Risks**

- This project involves minimal risk.
- There is a chance that you could become uncomfortable talking about your experience of a wildfire. If you experience any distress because of your participation, you can end the interview anytime. If you continue to experience any distress, please contact your family physician, Elder, or other supports.
- You will be provided with a list of mental health supports at the time of your interview.

### **Potential Benefits**

- Although benefits are not guaranteed, you may find it empowering to voice your opinion and share your experience.
- An expected output of this research is the co-development of a framework for community use. This framework will be shared with the study communities (Wadin Bay and Napatak) in formats that are accessible and useful to community members.
- We hope that the findings of this project will contribute to more beneficial climate hazard policies and programs that address the needs of people, their families, and their communities.

### **Compensation**

- An honorarium valued at \$20 will be provided for interviews with community residents.

### **Storage of Data**

- All information will be kept secure. Recorded interviews and transcripts will be stored in password-protected files on the password-protected computer of the researchers. Hard copies of consent forms will be stored in a locked filing cabinet in the researchers' office at the University of Regina or University of Saskatchewan.

- All information will be stored for at least 5 years. Information may be securely stored for long-term comparison. When the information is destroyed, it will be confidentially destroyed (e.g., shredded).

### **Follow up**

- To obtain results from the study, please contact any of the researchers named at the top of this form.
- Short reports and other information will be circulated to all participants after the study is complete.

### **Questions or Concerns**

- If you have questions or concerns, contact the researchers using the information at the top of page 1.
- This project has been approved on ethical grounds by the U of R Research Ethics Board on 10 October 2019. Any questions regarding your rights as a participant may be addressed to the committee at (306-585-4775 or research.ethics@uregina.ca). Out of town participants may call collect.

## **CONSENT TO PARTICIPATE**

I, \_\_\_\_\_, have reviewed and understand the information provided in this form. I consent to participate in an approximately 1-hour interview with Tina Elliott, MES Candidate, University of Saskatchewan. I understand the interview will be confidential and have been provided a copy of this consent form for future reference.

I can be contacted at:

\_\_\_\_\_ (phone)

\_\_\_\_\_ (email)

\_\_\_\_\_ (other: mail address, Facebook, etc.)

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of Researcher

\_\_\_\_\_  
Signature of Researcher

\_\_\_\_\_  
Date

### **Oral Consent Option**

I read and explained this Consent Form to the participant before receiving the participant's consent, and the participant had knowledge of its contents and appeared to understand it.

\_\_\_\_\_  
*Name of Participant*

\_\_\_\_\_  
*Researcher or Witness Signature*

\_\_\_\_\_  
*Date*



## **APPENDIX E: SEMI-STRUCTURED INTERVIEW GUIDE**

1. Can you tell me a bit about yourself?
2. How would you describe the roles you take on in different contexts of your life, including in the family and at home, in your work, in the community, and in other areas? [Refer to word cloud].
3. In your mind, what are the defining features of your community?
4. Do you have any “go to” people or places in your community – people or places you know you could go for help or support if you needed it during a fire or other emergency?
5. Are there any places you wouldn’t go for help? What are they? Why would you not go there for help?
6. What do you think of when you think of resilience, a resilient community? Do you think your community is resilient? Why or why not?
7. Prior to the 2015 wildfires, did you feel safe with regard to wildfire affecting you, your family, and your community? If yes, what made you feel safe? If no, why not?
8. Prior to the 2015 wildfires, did you, or you and your household, do anything in particular to prepare for wildfires? If yes, what did you do? If no, why not?
9. Think back to how you described yourself and the roles you fill earlier in our conversation. Did being \_\_\_\_\_ affect how you prepared (or didn’t) for the 2015 wildfires? If so, how?
10. [Study community] is a Fire Smart community. Are you involved with the program? If yes, can you tell me more? If no, why not?
11. Can you tell me about your experience of the fire?
12. Did your roles as (\_\_\_\_\_) affect your experiences during the fire? If yes, how?
13. Are there any resources that you had or did not have that might have caused you to do things differently? (E.g., financial, information, training, technical/infrastructural items, health supports, childcare). If yes, what were they?
14. Who did you cooperate with from the community during the fire? Why did you cooperate with them?
15. Can you tell me about people from outside the community who got involved during the fire?
16. Thinking back to how you described yourself and the roles you fill, how did being (\_\_\_\_\_) affect your experiences after the fire?
17. Tell me about the support that was available to you after the event? How did this help (or not help) you? Were there any supports that you didn’t have access to that might have helped?

18. Do you think your experience of the 2015 wildfires might have been either more or less difficult compared to others in the area? Why or why not?
19. What were the key things you learned from your experience?
20. How did your role(s) as \_\_\_\_\_ affect the things you learned?
21. What facilitated your learning?
22. Have you had opportunities at the community level to share what you learned with others and to learn from them? If yes, can you tell me more?
23. Of all that you learned through your experience, what would you most like to share with others?
24. What actions have you taken since the 2015 wildfires to prepare for a future wildfire event?
25. Has your experience from 2015 changed the way you've prepared? If yes, how? If not, why not?
26. Have you had opportunities to put your learning into practice? If yes, can you tell me more? about this? What facilitated these opportunities? When were they?
27. Has your community had opportunities to work together to put your collective learning into action? If yes, can you tell me more?
28. Thinking back one more time to the roles you described, did your role(s) as \_\_\_\_\_ affect how you've been able to act on the things you learned? If yes, in what ways?
29. If a fire was to happen in the future, how could things be done differently to make the event easier on you?
30. Is there anything else that you'd like to share with me?

## APPENDIX F: WORD CLOUD PROMPT FOR INTERVIEWS



## APPENDIX G: INTERVIEW CODE BOOK

In the table below, I have provided an illustrative quote for each code. Parent codes are shaded dark grey, child nodes are light grey and grandchild nodes are white. Codes without child or grandchild nodes are labelled the same as parent nodes (dark grey).

CODE NAME	SAMPLE QUOTE	REF
Self-Descriptions	Senior, father, gardener	143
Description of study community	I think it's a very happy community. Helpful. interactive, considerate community. I think for the most part the community works very well together.	51
Social identity factors (SIFs)		
SIF: Socio-economic Status	We own our house, so we would have insurance on this place, and it would be covered ...But, you know, it's – I guess just ... Just being older and being more comfortable, whereas we're not just starting out and we would lose everything that we had already – you know, like ... We would lose our home, lose our – for some people, even their livelihood, right?	26
SIF: Age	The biggest problem if you ask me right now is the young people are not taking an active role in the community and that's got to change and that's sort of what I'm kind of pushing towards right now. Somebody's got to take over.	27
SIF: Disability, health	My situation wouldn't allow me to stay because [of my health] the smoke would be just too much... So, I found that kind of disturbing myself because I didn't wouldn't be able to hang around and look out for my property.	4
SIF: Gender	And another thing was a couple of the gals, wives, they were the – they stayed back and cooked the meals.	27
SIF: Geography	Living where we do, FireSmarting is such an essential part of living in the wilderness, in the bush. It's the way our community's situated, there's only one road - we need to have a greater awareness.	49
Geography: Cultural ties to place	Napatak is one of those places where you can you don't have to go jump on the boat and go across the Lake for two hours to get to the Bush, you're right here...So living off the land as much as I can being comfortable on the land and now growing medicines right in my yard now, as well as harvesting the wild ones. So that's a lot about what I do in my life, in my spare time, and I guess what's kind of important to me.	9
Geography: Jurisdictional complexities	So, two government agencies, literally they sit side by side each other, work in the same building in La Ronge. And if you want to – because I've been in there asking permission to cut down a tree, and then I tell them where it is, oh, that's not Parks, that's this guy,	4

	and they call that guy over. You can see him sitting there. He comes over and [laughs] ... So, a lot of bureaucracy here.	
Geography: Northerner	We've lived most of our life in the North...We like the North; we understand the North. We understand issues associated with living here, the perspective that you're living in an interface area where you're actually in the forest. So, you're very susceptible to wildfire, and that's something we've become accustomed to...The North is a big, big part of my life, always has been.	16
Geography: Resident status (PT/FT)	Most summers we're not there all summer. So, we're only there long weekends or, you know, a week or two here and there, but we're not there all the time. So, I think a lot of those kinds of duties are given to people who are there full time and that to me is some of the issue. They don't really reach out to us part-timers.	22
Influence of SIFs in mitigation, prevention	Communication has been a strong part of my career, [in my career] my job was...getting information to the people who needed it and helping them figure out how to best use it. I learned a lot in that job about effective communication and it just stuck with me... So, I think there's been lots in my life that I could draw from to know that communication was going to be critical.	22
Influence of SIFs in response	We would be having like little meetings about, okay, where are you at with your system and how are you feeling about it? Or what are your obstacles? That kind of stuff. And we'd meet ... and we continued it throughout the whole process of the fires. And that was a really good thing to do because people started talking about the reality of what does a block captain mean? ...Realistically, what does a block captain? If our block captain has like three children and needs to leave, the community is not going to be effective.	53
Influence of SIFs in recovery	[After the wildfires] there's been a few more people install sprinklers, but that, again, it's coming out of your own pocket, not everybody's got, three or four thousand to go throw some sprinklers on top of the house.	24
<b>Strategy: Communicate</b>		
Communicate	The other thing I would say is really, really important, and it's important in general, but it's especially important in crises, is communication. Having communication systems, having good communication. Having good communicators and we've been very fortunate with that. One of the main things the Community Association did, it was set up a good communication system and use it. And that's really been, that's why we're a community.	33
Using technology	So, I think if they [community leadership/cabin association] could involve technology more you know, do meetings, or allow people to give their input through sending emails, that would help a lot. Especially for the people that aren't there full time because we don't see absolutely everything that's going on all the time either. So, it's an easier way to give our input...So if there were other	10

	options available, I think that would really help people get more involved	
With government, authorities	I think we'd just like to see more cooperation between our provincial government and the federal government and FireSmart. I think there's some communication that is lacking there and that would be our biggest obstacle in my opinion.	9
<b>Strategy: Engage</b>		
Engage	Anybody who was up there that summer was engaged and involved. You just – you couldn't not be. Everybody was talking to everybody... So that summer everybody was engaged and involved	14
Involvement in FireSmart	The FireSmart [events] are really good, we get together and clean up a couple of times a year and you meet a lot of people that way. It's the best way to meet people, or if you're new to a community especially, because you can talk to 50 people and introduce yourself, and, you know, get to know who's who, and where they live, and what they do.	34
Volunteerism & outreach	From the beginning ... I was involved, I guess it's something I learned from my parents that you stay and be involved with and support your community in whatever way you can. So, I was always interested in that and tried to build a better community, get people working together.	23
Strategy: Educate	I think the only reason I was going in prepared as much as I did is because I had some knowledge. I was lucky enough to have some training in FireSmart and that made the biggest difference of doing something to protect the property.	20
Strategy: Lead and Govern	The community association is the center of the hourglass, and so they need to be able to work very well with Northern Municipal Services above them, and they need to be able to work very well with the community below them. They are the center of that hourglass.	42
Strategy: Collaborate	As you progress you learn there has to be collaboration. I mean, you can go in and say, "I'm the big boss and blah, blah" but that doesn't get you very far. And with [community leader]'s whole leadership style they've learned sometimes you have to put your foot down and say this is the way, but it works better if it's more that collaborative approach.	18
<b>Principle: Inclusivity and belonging</b>		
Inclusivity and belonging	We knew that this was the right place for us and in large part it was because of the people. Napatak is made up of both cabin owners and permanent residents, and we developed relationships with both of those groups, and among both of those groups there. And people who live in the North or who spend time in the North have some common values, I think, that bring us together, and just	52

	that neighbourliness, the peace and quiet, the friendliness that we all appreciate, draws us actually closer.	
Gratitude	I automatically now think about the fires and how our community pulled together to save our cabins during that time. So, I really appreciate every cabin owner that stayed and fought those fires because I wouldn't have a cabin if they didn't.	10
<b>Principle: Connection to Place</b>		
Connection to place	As a kid growing up here all my life I loved the water, I loved the lake. Having a place we could access a road as we started to have careers was a big part, but still having the lake at my back door, the water, whether it's canoeing, kayaking, fishing, whatever, the lake is the number one piece for me and being somewhat quieter than being in the community in the forested area. Like I said, I love walking, I love hiking, you can just do that out your back door, go for a walk. It's fall time right now, this time of year, to me, it's utterly beautiful. Had a stressful day at work? Go for a walk out here and the stress is gone.	33
<b>Principle: Resilience, Risk, Vulnerability</b>		
Community resilient assessments	I think we're vulnerable, but on the other hand, our community members are creating a resilient community and [for example] people here are not willing just to sit back on their laurels and say, "well, you know, maybe we'll bring in the fire brigade" right? Like when push comes to shove and there is a situation, people come together, I am going to do what it takes to make sure that we're safe and we protect our community.	20
Resilience from vulnerability	So, if you were fairly self-sustaining, like I always try and be, I guess it comes from living on a farm when I was a kid...we didn't have the store. So I was, I am always able to survive for quite a length of time without getting to a grocery store and so, it was no hardship for me. I had everything I needed to provide food for us or to do all the baking that I did or whatever.	9
Risk and safety (current)	It's a very safe community.	12
Risk and safety (mitigation and prevention)	I think because we've had many precursors up to what we call the big fire, I felt safer. We'd done a lot of groundwork becoming part of FireSmart. So, did I feel safe? Yes. But was I completely comfortable in that safety? No.	36
Risk and safety (recovery)	We like the North; we understand the North. We understand issues associated with living here, the perspective that you're living in an interface area where you're actually in the forest. So, you're very susceptible to wildfire, and that's something we've become accustomed to. We thought we did until the fire in 2015 and found out a few things we didn't know.	12
Risk and safety (response)	I guess the knowing that the fire was, there was a huge situation brewing, and that it was close, it made me think, "okay, it's time to get your ducks in a row, make sure you know what you're doing	15

	and get your game on.” That's how I felt about it...and the lesson is no matter what other people say, what you know, what you need is to bank on [yourself]. And it doesn't matter if they think you're crazy. It doesn't matter... I don't care. You know? This is, this is my whole life.	
Understanding of resilience	I would say that a community that comes through a difficult time stronger than they went in I would classify as a resilient community. A community that actually developed more connections during a tough time I would call resilient. A community that is able to come together and help each other during tough times is probably resilient.	24
Understanding of risk	I knew there were risks, I knew that there were things that we could do to mitigate those risks, but I wasn't yet educated what those things were. So, I had to educate myself on the fire smart ...and developed my own understanding so that I could then speak with community members in groups or on a one-to-one basis, to just explain to them what that would mean in our community, what it would look like in our community. And certainly, those conversations were easier to have after the fires. [Laughs]. People all of a sudden really, really understood the risk.	35
Understanding of vulnerability	I guess we had a series of events. The other thing we often have - less so than we used to - is power outages... they were frequent power outages and brownouts. And so, you get used to dealing with that, cause in the winter you can survive a few hours. But after that it's an emergency...So, the community was used to organizing for crises, none as big as this fire. Then the flood when the bridge was flooded for two days, and you couldn't go in or out of the community. We've had lost kids. So, we've had bears often, every summer, usually we have a bear in the community. It's all those things. We just needed a system. We realized we need to be able to quickly communicate.	16
<b>Principle: Capacity</b>		
Assets – Economic and other	Highways decided they weren't going to come in and grade our roads anymore. So, we, you know, people just got together, and we bought our own gravel, and they bought a few things to scrape and do our own roads, and we put our own dust control chemicals down on the road ourselves. Rather than fight with anybody.	19
Assets - Physical & technical	We have members of our community that not only help people with cleanup but during the 2015 fires we had people donating their time and materials to set up sprinklers on other people's cabins. And we had people driving down the road in a truck with a big tank of water and spraying the ditches all around the community to make sure that they stayed good and wet. We had a guy offer to recut an old firebreak.	19
Assets - Social	At that [Annual General] meeting, for example, one of the people in the community... [was] a psychologist. So, he kind of led us,	37



	informally, into that setting...if he would see somebody acting out of the ordinary, probably take you aside and have a little chat with you and see how things are going and you know just try to keep track of everybody to make sure that we're all on the straight and narrow. But yeah, definitely stuff like that helps.	
External resources - FireSmart	FireSmart offers a grant every year for that community clean-up thing, and they want it to be used to bring your community together in a social atmosphere. And so, combining the clean-up and a barbecue after meets their criteria. So, they support it not only in their materials, where they say get your community involved, get the kids involved, get everybody involved, they also submit it with the financial backing in the form of grants.	18
External resources - Government	We certainly knew we were not going to get any help from our fire suppression people...because there's only so many of them and they did actually just get back on the initial attack groups as well. So, they weren't physically capable of taking care of the other fires that were starting up as they were starting up, just because of cutbacks. So, we knew that they were going to have their hands full, we knew that they had to go with the greater of the problems and everything so they're protecting La Ronge and Wadin Bay was getting some protection. We were all on our own, all on our own. There was just nobody left at all.	25
External resources - Neighbouring communities	The guys from Sucker River came over and helped our guys because they were busy protecting the community and they helped Wadin Bay. So that, and then I think the guys helped them as well in Sucker River. So, it was nice to see that happening. And a lot of them were... just doing it to save their communities and not for any other reason.	7
Self-sufficiency	People who didn't have certain things or had things that they didn't need... [there was the] food bank idea...Because I said, 'basic needs,' right? What are my basic needs? Who do I need to provide them for? And when people started coming about food and just basic means, I thought, 'okay, this has to be done. Somebody has to do something about it.' And I just did it.	11
<b>Post-disaster learning</b>		
Experience as motivation	Well, I now see the importance of getting rid of deadfall that's around the forest, especially in the community. And a lot of us got sprinkler systems after the fires for the top our cabins, which is a great idea. I think, as a community, we're a little bit more prepared because we have the actual experience that we went through to fight fires, even though we're not trained firefighters.	9
Implementation of PDL	I think we were able to stress in that annual meeting just how important it is for people's homes and cottages to be protected. We, as a [small group] can't do it all, couldn't do it all.... But we realized the importance of people taking responsibility for their own homes...Have we changed that perspective? Yes.	16

Interest in, valuation of PDL	So yes, to have somebody that could come into a community after and sit down and have those kinds of debriefings would be probably quite helpful because it would maybe get things off your chest that you don't necessarily talk about to anybody... so, the idea of debriefing, like people need outlets to talk and some people are going to be very vocal all the time and other people needed time to digest everything. And then they do need to talk.	24
Key lessons learned	Preparation is everything. Having a good leadership structure, communication system, education, communication, just being prepared. The event itself kind of in an emergency, things kind of take their own course. It's everything you've done up until the emergency that matters. The emergency itself just kind of happens and if people are prepared, they'll know their jobs and they'll do their thing. If people are unprepared, it'll just run around like crazy, and no one will know what anyone else is doing. So be prepared, communications, organization, education.	76
Experience with wildfire, crisis (prior to 2015)	I think there's a bit of a naiveté and everybody has that, we thought that the government would have it under control, and if anything happens, don't worry. We have fire suppression in the Town of La Ronge. We have numerous people in the community that have worked with Wildfire Management...so we all had that kind of you know, "if something happens, push comes to shove, don't worry. We can handle it", and then 2006 fires hit us, yes, definitely got us thinking about it.	21
Opportunities for PDL	There's lots of informal exchange of information like that. And I'm sure the Community Association had some discussions, but there was no sort of formal event where everybody sat down and debriefed as such that I can recall.	38
Recommendations to FireSmart	I'd like to see a program where it's available to have some consultation about land use planning around our community, where we get some step-by-step planning to...[do] individualized community, land use planning...A process that you'd work with FireSmart to develop an individualized plan for your community that you'd get some information about like costs and land development and that kind of stuff, because right now there's a lot of recommendations, but ...what was the process of developing that and how much did that cost, how did they set it up?	20
Recommendations to governments	You need to have an agency take the lead and I'm not sure if they've ever done that. ... You need to have a leader and the leader needs to be the keeper of information. Like it needs be able to say, "this worked in 2015, this did not". And I hate to keep going back, but they need that list of essential services. And I think when we had the fire in '99, it was an argument then. What are essential services? And then we have the fire in 2015 and we sort of ironed it out a little bit, but I don't think anything is etched in stone. At	18

	least I have never seen anything. Maybe it exists, maybe it doesn't, I don't know.	
Supports post-disaster	There was lots of support during the fire, but I can't say that there was anything afterwards. I mean, afterwards it was a time of finger pointing and I just felt very discouraged afterwards.	24
Timing for PDL	Well probably within the few months after and as soon as everybody's settled down and if people return to their homes, if there's damage, maybe wait a bit if people are cleaning up or starting to rebuild, but certainly within a few months.	16
Experiences of 2015 fires		
Evacuations	The reality that Napatak is a one-road-in-one-road-out community made us really think very hard about alternate evacuation plans and trying to think of ways to do that effectively and efficiently. And we have – it took us a couple of years to really put together a plan, but we have put together a plan.	17
Communication during the fire	There could have been better coordination and communication and Tammy Cook-Searson by default filled that role, fortunately. If she hadn't filled that role, I think there would've been a lot more chaos certainly in the Band, but in the whole tri-communities area. She stepped in.	39
Impact statements, trauma	I know that when you have like those kinds of, it's like a form of trauma, you can carry that for a while, and it can impact you.	56
Resources	Basically, what we did is we opened up the garage. We took donations from everybody in the area, like old cans of beans that were in the closet and that kind of thing. And we stacked them all up and just got everybody to come in and grab some food and whatever you wanted. And they did!	39
Strategies during the fire	What it came down to for us is that everybody that stayed all had a voice and there's nobody that said, "you're following me and we're in the trenches together." It was "we're discussing this, this is what the plan is, how about if we try this" and somebody else would say "well, how about if we try that instead" ...I guess we all felt, we're all bringing the same amount to the table. We all stand to lose as much one as the other. So, at the end of the day, there's nobody that's putting on the superman cape leading us into battle. It's "we're working together to save the community."	31

## **APPENDIX H: WORKSHOP CONSENT FORM**

### **Social Dimensions of Climate Hazards Project:**

Learning from wildfire: Understanding the social dimensions of community response

### **Online Workshop Participant Consent Form**

#### **Student Researcher**

Tina Elliott, Candidate, Master of Environment and Sustainability  
School of Environment and Sustainability  
University of Saskatchewan  
306-850-1241  
T.Elliott@usask.ca

#### **Supervisor, Project Lead**

Maureen Reed, PhD, Professor  
School of Environment and Sustainability  
University of Saskatchewan  
306-966-2298  
Maureen.Reed@usask.ca

#### **Committee Member, Project Lead**

Amber Fletcher, PhD, Associate Professor  
University of Regina  
306-585-4183  
Amber.Fletcher@uregina.ca

#### **Purpose and Objective of the Research**

- The purpose of this research is to support the empowerment of rural communities to engage in post-disaster learning that will inform future preparations and responses to wildfire.
- The objectives of this research are to better understand how social identity factors shape communities' experiences of wildfire disasters; to compare the effects of different social strategies; and stimulate a process for post-disaster learning by co-developing a community-based framework focused on social dimensions of wildfire to guide future community wildfire management plans.
- This research may also help create more socially inclusive climate adaptation policies that are beneficial to communities, while also contributing to academic knowledge on climate hazards.

#### **Procedures: Online Workshop**

- You have been invited to participate in an online workshop where you will be asked to collaborate with a community member from Napatak, SK and Wadin Bay, SK as well as a member of the research team (Tina Elliott).
- The purpose of the online workshop is to discuss and collaboratively develop a framework for community-based, post-disaster (i.e., wildfire) learning.
- The online workshop includes (1) a telephone conversation with a community member (approximately 30-60 minutes) and (2) contributing to a collaborative online document (approximately 1-2 hours).

- The first portion (1) of the workshop is a one-on-one guided conversation over the phone with another workshop participant(s). Participants will be asked to take notes about their conversation and share them with the large group and researcher.
- The second and final portion (2) of the workshop asks participants to review and contribute to a collaborative online document.
- Only Tina Elliott, Dr. Reed and Dr. Fletcher will have access to the recordings or transcripts. We will not share this information with anyone else.
- The findings of this study may be used in presentations, written reports, policy briefs, or other documents. Although we might use quotations in our presentations or reports, your name will not be attached to anything you said.
- The workshop will be recorded in written form.
- All recordings of the workshop will be kept confidential. However, please note that while we ask all participants hold the information shared in the workshop in confidence, we cannot guarantee confidentiality (see more on confidentiality below)
- Feel free to ask any questions about the procedures and goals of the study or your role.
- You are not required to answer any questions if you don't want to.
- At the end of this form, you can provide your consent for participation in this online workshop.

### **Confidentiality**

- In any final reports or presentations coming from this research, your name will be removed and will not be attached to anything you said.
- The researchers named above will have access to the information you provide.
- Participation in the workshop is not confidential. While we will ask participants to keep information that is shared confidential, other participants will know that you participated and what you said. We cannot guarantee confidentiality within the workshop.
- All workshop participants will be introduced at the beginning of the process, so you will be aware of who you are collaborating with.
- Phone numbers and email addresses for participants will be shared among participants due to the nature of communication in this process. We ask participants to keep this the contact information of other participants private but cannot guarantee this.
- Please respect the confidentiality of the other members of the group by not disclosing the contents of this discussion outside the group.

### **Right to Withdraw**

- Your participation is completely voluntary. You can choose to answer only questions that you are comfortable with.
- Whether you choose to participate or not will have no effect on your relationship with the research team or the Universities and will not affect how you will be treated by these people or organizations.
- Due to the collaborative nature of the online workshop, participants may withdraw up until the workshop begins. However, both components of the online workshop will produce collaboratively created input and therefore cannot be withdrawn after participation.

## **Funding**

This project is funded by the Social Sciences and Humanities Research Council of Canada.

## **Potential Risks**

- This project involves minimal risk.
- There is a chance that you could become uncomfortable talking about your experience of a wildfire. If you experience any distress because of your participation, you can end your participation in the online workshop. If you continue to experience any distress, please contact your family physician, Elder, or other supports.
- If you have not previously been provided a list of mental health supports at the time of your interview, you will be provided with said list prior to the online workshop.

## **Potential Benefits**

- Although benefits are not guaranteed, you may find it empowering to voice your opinion and share your experience.
- An expected output of this research is the co-development of a framework for community use. This framework will be shared with the study communities (Wadin Bay, SK and Napatak, SK) in formats that are accessible and useful to community members.
- We hope that the findings of this project will contribute to more beneficial climate hazard policies and programs that address the needs of people, their families, and their communities.

## **Compensation**

- An honorarium valued at \$50 will be provided to participants of the online workshop.

## **Storage of Data**

- All information will be kept secure. Recordings of workshop data will be stored in password-protected files on the password-protected computer of the researchers. Hard copies of consent forms will be stored in a locked filing cabinet in the researchers' office at the University of Regina or University of Saskatchewan.
- All information will be stored for at least 5 years. Information may be securely stored for long-term comparison. When the information is destroyed, it will be confidentially destroyed (e.g., shredded).

## **Follow up**

- To obtain results from the study, please contact any of the researchers named at the top of this form.
- Short reports and other information will be circulated to all participants after the study is complete.

## **Questions or Concerns**

- If you have questions or concerns, contact the researchers using the information at the top of page 1.
- This project has been approved on ethical grounds by the U of R Research Ethics Board on 10 October 2019. Any questions regarding your rights as a participant may be addressed to the

committee at (306-585-4775 or research.ethics@uregina.ca). Out of town participants may call collect.

## **CONSENT TO PARTICIPATE**

I, \_\_\_\_\_, have reviewed and understand the information provided in this form. I consent to participate in an online workshop as described above with Tina Elliott, MES Candidate, University of Saskatchewan. I understand my responsibilities and the limitations around confidentiality and have been provided a copy of this consent form for future reference.

I can be contacted at:

\_\_\_\_\_ (phone)

\_\_\_\_\_ (email)

\_\_\_\_\_ (other: mail address, Facebook, etc.)

_____	_____	_____
Name of Participant	Signature of Participant	Date
_____	_____	_____
Name of Researcher	Signature of Researcher	Date

### **Oral Consent Option**

I read and explained this Consent Form to the participant before receiving the participant's consent, and the participant had knowledge of its contents and appeared to understand it.

_____	_____	_____
<i>Name of Participant</i>	<i>Researcher or Witness Signature</i>	<i>Date</i>

## APPENDIX I: WORKSHOP WORKSHEET

Do this part **by yourself** before talking with your partner

Your name:

Your partner's name:

You can type in this word document and email it **OR** whatever is most convenient to you. For example, you can write it out with a pen and paper, take a picture and text it to me.

### **List of key terms with definitions:**

1. **Buy-in:** The willingness of community members to acknowledge the value of the learning from each other and the value of wildfire management planning.
2. **Capacity:** The total of all types of assets of the community including but not limited to human, physical, and material assets, including lived experience and Traditional Knowledge.
3. **Collaboration:** Community members working together; a coordinated set of activities that happen together resulting from ongoing attempts to create and maintain a shared idea of the problem.
4. **Commitment:** Ongoing statements and actions that support post-disaster learning and wildfire management planning.
5. **Communication:** Including but not limited to using technology to communicate to members of the community, being heard by others, ability to listen to others, being informed by external bodies.
6. **Community governance:** Structured leadership with established decision-making processes within the community that is supported by the community and seen as legitimate.
7. **Connection to the land:** Community members have a relationship with the land itself, including physical features such as bodies of water, the forest, wildlife, etc. This relationship may or may not be rooted in culture or spirituality.
8. **Context:** Consideration of the specific characteristics of a community including but not limited to its physical geography, demographics, climate, political environment, economic situation, etc.
9. **Education:** The process of receiving information and instruction regarding wildfire management practices.
10. **External support & coordination:** Coordination and/or support with external bodies such as Governments and their various departments, other communities, organizations such as FireSmart.
11. **Inclusivity & belonging:** Community members sense that they are part of and connected to others in the community; are welcome to participate; can speak freely; and have supports in the community.
12. **Interdependence:** The idea that community members depend on one another and affect each other.
13. **Self-sufficiency:** The ability of a community to meet its own needs.



**14. Understanding risk:** Understanding of the likelihood that a wildfire will impact the community and the potential for negative consequences.

**15. Understanding vulnerability:** The understanding of the characteristics and circumstances of a community that make it susceptible to the damaging effects of wildfire.

### Thinking about importance SLIDE 12



Estimated time: 5 mins

Action item: Rank the words in order of importance.

You do not have to rank them 1, 2, 3... There can be multiple #1s, #2s, etc.

\_\_\_ Buy-in

\_\_\_ Education

\_\_\_ Capacity

\_\_\_ External support & coordination

\_\_\_ Collaboration

\_\_\_ Inclusivity & belonging

\_\_\_ Commitment

\_\_\_ Interdependence

\_\_\_ Communication

\_\_\_ Self-sufficiency

\_\_\_ Community governance

\_\_\_ Understanding risk

\_\_\_ Connection to the land

\_\_\_ Understanding vulnerability

\_\_\_ Context

Q: Why did you choose this ranking?

Q: Are there any words you would add to this list? Remove? If so, why?

### Thinking about categories SLIDE 13



Estimated time: 5 mins

Action item: Put the terms into groups in a way that makes the most sense to you. Make as few or as many groups as you need. It is okay if some terms are left as individuals. If you can, name the groups.

Q: Why did you group them this way?

Q: Are there any words you would add? Remove? If so, why?

### Thinking about relationships SLIDE 14



Estimated time: 5 mins

Action item: Write (or draw) about how these terms are related or connected. You can start with the list of words and connect them one by one, or you can use the groups you made and connect them.

Q: Why did you connect them this way?

Q: Were there any that are important but didn't connect easily to the rest?

Q: Are there any words you would add? Remove? If so, why?

## Do this part with your partner



Estimated time: 15-45 minutes

Action item: Call your partner, introduce yourselves and decide if one or both of you are taking notes. You will be asked to share these notes via email with Tina, therefore take notes in whatever way is most convenient to do so. Together, work through the following steps.

Action item: Share your rankings, categories, and relationships with your partner including your reasons why (your answers to Slides 12, 13 and 14).

Action item: Using the questions (below) discuss the answers you shared with each other. You **do not** have to answer every question; these questions are meant to prompt discussion. **Please do** take notes about the questions you have time for and what strikes you as interesting and important.

Discussion questions:

- Were there some things that rang true for one *person* but not the other? What were they?
- What were they?
- Where did you agree and come up with similar ideas?
- Where did you disagree and come up with different ideas?
- Now that you've seen your partner's ideas and heard their reasons, would you change your answers? Why or why not?
- Is it possible to combine your ideas about the relationships (slide 14) to come up with something that makes sense for both of you? If so, what might that look like?
- Is there anything that needs to be added to or removed from the list? Is there anything surprising that came of your discussion? If so, what was it?
- What have you learned by participating in this activity?
- Is there anything else you want to share?

## APPENDIX J: DRAFT FRAMEWORK DESCRIPTION

In Figure J.1, the five stages rest on a foundation (in gray) which represented *Context* and *Communicate* to underscore the importance of these terms throughout the learning process. While other principles and strategies fit more clearly within one or two of the stages, *Communicate* and *Context* were found to be outliers in the data. Although they ranked as relatively important, they did not clearly ‘fit’ well in any single stage of the process. Participants indicated that *Context* and *Communicate* were important throughout the process, forming the foundation of the PDL process.



Figure J.1 Draft framework for community-based post-disaster learning

The principles and strategies were placed within the five stages (Table J.1). At this stage of the draft framework development, a key element of transformative learning theory was added and would become a point of discussion in the community workshop described below: *Reflect*. I included *Reflect* at the beginning of stage one and two and the end of stage five. This addition served two purposes: 1) to emphasize the importance of individual and collective reflection as a primary driver of learning and 2) to tie the beginning and end of the process together, thereby reinforcing the iterative nature of learning. Lastly, I proposed some guiding questions and learning outcomes to the workshop participants (Tables J.2 and J.3).

Table J.1 Principles and strategies in each stage of the draft framework

Stage I: Connect	Stage II: Understand	Stage III: Organize	Stage IV: Plan	Stage V: Act
<b>PRINCIPLES</b>				
Inclusivity, Engagement and Belonging	Inclusivity, Engagement and Belonging	Inclusivity, Engagement and Belonging	Capacity	Capacity
Interdependence	Understandings of Resilience, Risk, and Vulnerability	Capacity	Self-sufficiency	Self-sufficiency
Connection to the Land			Commitment	Engagement with External Supports
<b>STRATEGIES</b>				
Reflect	Reflect	Lead and Govern	Collaborate	Reflect
	Educate			Collaborate

Table J.2 Examples of guiding questions for each stage of the draft framework

Stage I: Connect	Stage II: Understand	Stage III: Organize	Stage IV: Plan	Stage V: Act
Who or what do I depend on to keep me safe (during a wildfire or otherwise)? What connects me to this place and the land? What does resilience mean to me? What was unexpected or surprising about my wildfire/disaster experiences?	What are some challenges about our community's social, geographic or political environment? What do I do to address or overcome my vulnerabilities? What have strategies have I developed because of a vulnerability or challenge I face?	Is our organization easy to access? (E.g., for part-time residents or parents) How can we empower and support new leaders in the community? Are there communication technologies that can help with scheduling or distance barriers?	What assets does the community already have? What is unique about our community and its members that needs attention in our plans? In what ways will the community likely need external supports?	What challenges make it difficult to put plans into action? How can we encourage collaboration and communication as we work toward our goal? How can we keep communicating if/when plans change?

Table J.3 Examples of learning outcomes for each stage of the draft framework

Stage I: Connect	Stage II: Understand	Stage III: Organize	Stage IV: Plan	Stage V: Act
Identify how experience of a wildfire did not match prior plans, expectations.  Identify how connections to the land may motivate people to prepare for wildfire in different ways.	Identify ways that vulnerabilities can produce diverse and innovative strategies.  Explore the ways complacency shows up in the community.	Reach out to unengaged community members.  Develop or strengthen an inclusive leadership and/or governance structure.  Identify new roles individuals can play in community organizing.	Identify uses for community assets, especially experience, knowledge and strategies not previously recognized.  Identify self-sufficiency goals and the barriers that may restrict some community members from achieving the same goals.	Access and mobilize external supports to address areas where community is not self sufficient.  Communicate with relevant external bodies about plans, ideas, gaps, and needs.

## APPENDIX K: TRANSCRIPT RELEASE FORM



UNIVERSITY OF SASKATCHEWAN

School of Environment  
and Sustainability

USASK.CA/SENS

### Participant Transcript Release Form

**Note to researcher and participants:** This transcript release form should be signed after the participant has had the opportunity to read and revise his/her transcript in order to acknowledge that it accurately portrays what he/she said.

#### *Learning from wildfire: Understanding the social dimensions of community response*

I, \_\_\_\_\_, have reviewed the complete transcript of my personal interview in this study, and have been provided with the opportunity to add, alter, and delete information from the transcript as appropriate. I acknowledge that the transcript accurately reflects what I said in my personal interview with Tina Elliott, MES Candidate, University of Saskatchewan. I hereby authorize the release of this transcript to Tina Elliott to be used in the manner described in the Consent Form. I have received a copy of this Transcript Release Form for my own records.

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Signature of Researcher

## **APPENDIX L: GUIDING QUESTIONS AND LEARNING OUTCOMES**

The following provides a list of guiding questions and learning outcomes for each stage. The guiding questions for each stage are not an exhaustive list but provide a point of departure and examples of how to practically work through the process. The questions were designed to elicit critical reflection on assumptions, feelings, and experiences; to foster respectful and productive conversation; and to prompt exploration and testing of new roles, relationships, and approaches. Community members may also find it useful to pose their own questions. These questions are meant to tie together the principles, strategies, and learning outcomes; in other words, they can help people to address the principles by using the strategies to achieve the learning outcomes. The questions are grouped by scale:

Individual (self/household): These questions are for and about individuals, enabling them to gain a better understanding of their own ideas, feelings, and experiences.

Community (town, resort village, rural municipality): These questions are for and about the community, enabling them to gain a better understanding about others' ideas, feelings, and experiences. These questions are to be addressed collectively.

Context (regional, provincial/territorial, societal): These questions are about the broader environmental, social, economic, political, cultural landscapes in which the community exists and related effects on the community. These questions are to be addressed collectively.

The learning outcomes describe results or goals to which learners aim in the learning process. These may be abstract or practical. More abstract learning outcomes may include new knowledge, shifts in norms and perspectives, stronger critical thinking skills, or a newfound ability to see 'the big picture.' Practical learning outcomes might include developing of new skills, building new relationships, becoming involved in activism, or trying out new roles. Regardless of whether a learning outcome is abstract or practical, the learning outcomes for each stage relate to the principles and are mobilized by the strategies of said stage.

## Stage 1: Connect

**Principles:** *Inclusivity and Belonging, Connection to Place*

**Strategies:** *Reflect, Engage, Communicate*

**Guiding Questions:**

### Individual:

- *What does community mean to me?*
- *What makes me feel I belong here?*
- *What is my connection to this place?*
- *What do I value about being a part of this community (physical things, structures, people, the natural environment, etc.)?*
- *What was unexpected or surprising about my experiences of the wildfire/disaster?*
- *What resources helped me during the wildfires/disaster (e.g., things, equipment, certain people, information, ideas, financial resources, etc.)?*
- *What other resources did I need?*
- *What motivates me to prepare for a wildfire/disaster?*
- *What prevents me from preparing for a wildfire/disaster?*
- *When did I feel confused, misinformed, or uninformed?*
- *What are my responsibilities in wildfire/disaster management? Why are those my responsibility (and not the community's or governments, 'for example)?)*

### Community:

- *What barriers prevent(ed) others from participating (e.g., past conflicts, life circumstances, physical barriers, time constraints)?*
- *In what ways do we depend on one another?*
- *What is rewarding and challenging about living in my community?*
- *Who helped me and who did I help during the wildfires? How?*
- *Who relies on me to stay connected to others? Who do I rely on?*
- *What are shared, community-wide responsibilities in wildfire/disaster management?*
- *Why are those shared (and not individual or governmental, for example)?*
- *What communication tools kept our community informed during the wildfires?*
- *What are the biggest challenges to staying in touch with the community?*
- *What were our greatest assets during the wildfires/disaster (material, social, ecological, etc.)?*

### Context:

- *What did I expect from those outside the community (e.g., government, FireSmart/NGOs, neighbouring communities)?*

- *How were my expectations met? How were my expectations not met? How did that impact my experiences?*
- *What external sources of information were most helpful?*
- *What political factors impacted my experiences?*
- *What cultural factors impacted my experiences?*
- *What is my role in my relationship to the ecosystem surrounding the community?*
- *What 'big picture' factors shaped my experience of wildfire? (E.g., being a remote community, internet connection, politics, etc.)*
- *What role did government play in my experiences of wildfire/disaster?*

### **Learning Outcomes:**

- Describe your connection to the community.
- Describe your connection to the land.
- List the valuable aspects of your community (including material things, social, economic, cultural, etc.).
- Identify your own assumptions, beliefs, and expectations about wildfire.
- Assess how experiences of wildfire/disaster did not match prior plans, expectations.
- List primary motives and barriers to wildfire/disaster management.
- Recall and acknowledge past and current conflicts in the community that prevent participation.
- List barriers to participation in wildfire management and community involvement.
- Identify challenges related to resident status (part time, full time, etc.)
- Envision an ideal, shared, accessible space to work together.
- Identify communication networks (interpersonal, community-wide, and beyond the community) that are strong and those that need development.

## **Stage 2: Understand**

**Principles:** *Inclusivity and Belonging; Understandings of Resilience, Risk, and Vulnerability*

**Strategies:** *Reflect, Engage, Educate, Communicate*

### **Guiding questions:**

#### Individual:

- *What does it mean to be resilient? How am I resilient to wildfire/disaster?*
- *Who and what do I need to become or remain resilient?*
- *What are my assumptions about the risk of wildfire/disasters?*
- *How do I assess risk from wildfire/disaster? What factors do I include in my risk assessment?*
- *What do I do to reduce my risk?*



- *What would I like to do in the future to reduce my risk? What are my risk-reduction goals?*
- *What resources would help me reach those goals (financial, material, informational, social)?*
- *In what ways am I personally vulnerable in a wildfire/disaster situation?*
- *What do I do to address or overcome my vulnerabilities? What strategies have I developed because of a vulnerability or challenge I face?*
- *What would help me to be and feel less vulnerable (e.g., information, material things, social supports)?*
- *What vulnerabilities do I feel cannot be overcome?*
- *What are knowledge gaps? Where is my knowledge incomplete?*
- *What special or unique knowledge do I have about wildfire/disasters?*
- *What are my sources of information about wildfire/disaster risk?*
- *What other sources of information are available to help me learn about wildfire/disaster risk?*
- *What or who helped or hindered communication during the wildfires?*
- *How comfortable do I feel sharing my ideas, feelings, and experiences with others in the community? What could help me feel more comfortable?*

#### Community:

- *What skills or knowledge have we developed through our experience with wildfire/disaster?*
- *What are some 'big picture' lessons we can take from our experience?*
- *How can we efficiently share knowledge about risk of wildfire/disaster?*
- *How can we make learning more about wildfire/disaster risk easy and engaging for community members (e.g., location, timing, family-friendly, etc.)?*
- *Are there ways to passively educate community members about wildfire/disasters?*
- *What are some barriers to education about wildfire/disasters in the community?*
- *How can the community assert its own educational needs?*
- *How can we make the most of individuals' knowledge, skills, and abilities as a community?*
- *How can we accommodate and address different perspectives and needs in the community?*
- *What obstacles prevent knowledge sharing in the community and how might they be overcome?*
- *How can we discuss and address complacency about wildfire management?*
- *What commonalities and differences are there in the way community members define resilience?*
- *How can we make the most of the different kinds of resilience among community members?*
- *Which community members might be particularly vulnerable? How can their perspectives be prioritized in wildfire/disaster management in the community?*
- *What existing resources can be used to minimize the impacts of vulnerability within the community?*

- *Do community members have similar ideas about risk and the factors that impact a risk assessment?*
- *What surprises me about others' ideas of risk and vulnerability and the strategies they use to address risk and vulnerability?*
- *What do community members disagree about in relation to wildfire/disaster risk?*
- *What do community members agree on in relation to wildfire/disaster risk?*
- *Are there ways for people to share, communicate with the community that are anonymous?*
- *What can we do to create a safe social space for people to communicate about risk and vulnerability?*
- *Are there novel ways to communicate within the community? What are the pros and cons of each way?*
- *How can virtual communication methods be helpful? What are some challenges of using virtual communication methods?*

#### Context:

- *What external factors impact the community's risk (e.g., limited egress routes, low access to services, etc.)?*
- *What external resources could be accessed to minimize the impact of community members' vulnerabilities (e.g., grants to help with costs for rooftop sprinklers, knowledge sharing with neighbouring communities)?*
- *What are/were neighboring communities' strategies, challenges, and strengths? What can we learn from them?*
- *What are free, affordable, and/or easily accessible resources to learn about wildfire/disasters (e.g., FireSmart, Community Disaster Resilience Planning, government resources)?*

#### **Learning outcomes:**

- Improve understanding of one's own and others' assumptions, beliefs, and expectations about wildfire through critical examination and respectful dialogue.
- Discuss and acknowledge diverse perspectives about resilience, risk, and vulnerability.
- Identify ways that vulnerabilities can produce diverse and innovative strategies.
- Identify sources of information and knowledge about holistic wildfire/disaster management from within the community and from outside sources (e.g., Disability Alliance B.C. (2016)).
- Assign and execute information gathering tasks to community members.
- Connect with neighbouring communities to share learning.
- Establish communication strategies to share information and knowledge within the community.

### Stage 3: Organize

**Principles:** *Inclusivity and Belonging, Capacity*

**Strategies:** *Reflect, Engage, Educate, Lead and Govern, Communicate*

**Guiding questions:**

#### Individual:

- *How would I describe my involvement and contribution to the existing governance structure?*
- *What skills, knowledge, or abilities do I have from my experiences with wildfire/disaster or life in general that I can contribute (e.g., practical skills, education, soft skills, networks, etc.)?*
- *What are some examples of assets, supports, or resources that might be considered unconventional, overlooked, or undervalued?*
- *What prevents me from participating in or contributing to leadership or governance in the community?*
- *How competent do I feel to take action to manage risk and address vulnerability?*
- *In what ways am I (or could I be) a leader? What leadership role is well-suited to me?*
- *What assets or resources do I have that support me and my household?*
- *What assets or resources do I need (e.g., funding, material things, help with labour, training, etc.)?*
- *What assets or resources do I have that can support others (material things, social connections, technical knowledge, etc.)?*
- *In what ways am I self-sufficient in relation to wildfire/disasters?*
- *What prevents me from achieving my ideal level of self-sufficiency?*
- *What kind of wildfire/disaster-focused community event would be interesting and accessible to me?*
- *What communication methods would support my involvement in leadership and governance?*
- *What supports or resources do I need, expect, or hope from outside of the community (e.g., government, regional leadership, other communities)?*
- *What relationships do I have with (existing or potential) external supports (e.g., government, NGOs, regional leadership, other communities)?*
- *How could I strategically communicate needs and feedback to existing or potential external supports?*

#### Community:

- *What kind of governance structure already exists in the community?*
- *What are its strengths and challenges?*

- *What makes our community organization welcoming and easy to join (e.g., for part-time residents, parents, etc.)?*
- *How can we improve accessibility?*
- *What are the existing leadership roles? How are people acting as leaders in an unofficial capacity?*
- *What are some new or unconventional leadership roles that might support the community's wildfire/disaster management goals?*
- *How can we empower and support new leaders in the community?*
- *What initiatives can increase feelings of competency to take action to manage risk and address vulnerability around wildfire/disasters?*
- *What kind of events and communication methods would broaden the reach of the current governance structure and its leaders?*
- *How self-sufficient is the community in general?*
- *What strategies would help people reach their ideal level of self-sufficiency in relation to wildfire/disaster management goals?*
- *What assets and resources do we/could we access and rely on from outside sources?*
- *What are barriers to effective communication within the leadership group, governance structure, and community in general?*
- *Which communication technologies can help overcome scheduling, distance, or other barriers (e.g., video calls, online calendar/scheduling tools, online workshop/collaboration tools)?*
- *Are there anonymous and/or confidential ways to communicate if need be?*

Context:

- *What existing relationships exist and support the current governance structure, its leaders, and members?*
- *How can these relationships be strengthened?*
- *How can external leaders, teachers, and other supports be brought in to support the community?*
- *What external bodies can provide resources or help the community acquire assets to help meet wildfire/disaster management goals?*

**Learning outcomes:**

- Assess strengths and challenges of the existing governance structure.
- Develop or strengthen an inclusive and accessible governance structure.
- Brainstorm and list new leadership roles based on existing gaps, as well as the strategic use of community members' skills, knowledge, and abilities.
- Designate leadership roles to community members on an experimental basis.

- Identify novel and inclusive communication methods that facilitate information flow to and from community leaders.
- List assets and resources, including those that are economic, material, social, environmental, and cultural, especially those that are typically unconventional or undervalued.
- Identify gaps in assets, resources, and supports.
- Describe sense of self-efficacy (feelings of competency to take action to manage risk and address vulnerability). Note variations among the group.
- Propose ways to improve self-efficacy (feeling competent to take action to manage risk and address vulnerability).
- Initiate the use of novel communication methods.

## **Stage 4: Plan**

**Principles:** *Capacity*

**Strategies:** *Reflect, Collaborate, Lead and Govern, Engage, Communicate*

**Guiding questions:**

Individual:

- *What new role(s) will I take and what do I need to be successful in that role?*
- *What do I need to be able to execute my plans/goals (materials, training, funding, etc.)?*
- *What do I consider to be important changes or additions to wildfire/disaster management plans going forward?*
- *Who can I partner with, engage, or support (especially those who are not yet fully involved)?*
- *How do prior/current plans include or exclude me and my household?*
- *How will I communicate the plans I am involved in developing?*
- *How can I assist those with different plans or goals than I might have?*

Community:

- *What do others consider to be important changes or additions to wildfire/disaster management plans going forward?*
- *How can we equitably address competing demands for limited resources, such as funding or material assets/resources?*
- *How can collaborations be fostered between diverse individuals or groups (e.g., people with different perspectives, skill sets, or vulnerabilities)?*
- *How do our plans going forward meaningfully address what was learned from our experiences with wildfire/disaster?*
- *How can our plans support community members with specific challenges, obstacles, or vulnerabilities?*
- *Do our plans reflect the diverse roles, skills, and needs of our community?*

- *How can plans accommodate various levels and different kinds of capacity (e.g., financial, physical, social)?*
- *Do our plans assume a personal investment of time, money, or other resources that might prevent or deter some community members from participating?*
- *What communication tools/methods can be used to get honest feedback about plans while minimizing unproductive conflict?*
- *How do we plan for future wildfire/disaster events in a way that maximizes the assets, resources, and supports we previously identified in the community?*
- *What mechanisms can be used to get honest feedback from people who are as yet unengaged or minimally engaged? How can we collect feedback on plans from community members that aren't consistently involved in the planning process?*
- *How can we buffer our wildfire management plans against complacency?*

Context:

- *How can the community mobilize the assets, resources, and supports available from external bodies (NGOs, neighbouring communities, government)?*
- *What assets and resources do we have to offer neighbouring communities to facilitate a reciprocal supportive relationship?*
- *What is unique about our community and its members that may need special attention in our plans (e.g., low access to services, limited egress routes, demographic considerations)?*
- *How can the community assertively advocate for itself to external bodies (e.g., government, NGOs)?*

**Learning outcomes:**

- Develop wildfire management practices that reflect the learning outcomes of previous stages.
- Formulate ways to use all types of community assets, especially those previously unrecognized or undervalued.
- Craft plans that address realistic self-sufficiency goals while supporting, where possible, those with limited assets or resources.
- Explore, initiate, and foster new collaborations between people with diverse perspectives or skills.
- Employ novel communication methods.
- Incorporate new information and education into wildfire/disaster management plans (e.g., risk assessment).
- Identify strategies to address concerns related to complacency.
- Position and support new leaders to engage the community
- Plan community events that target those with low engagement or challenges to engagement (e.g., new community members or part-time residents).

- Establish methods to consult the entire community, and gather feedback with options for confidentiality, if possible.

Initiate contact with external bodies that could assist the community with assets, resources, or other support (e.g., government, NGOs, etc.).

## **Stage 5: Act**

**Principles:** *Capacity*

**Strategies:** *Reflect, Collaborate, Communicate*

**Guiding questions:**

Individual:

- *What challenges am I facing as I attempt to put plans into action?*
- *How is my role empowering?*
- *What am I learning as I try out new roles, activities, or approaches?*

Community:

- *What new challenges have arisen from attempts to put the plan into action?*
- *How can we encourage collaboration and communication as we work toward our goal?*
- *How can we keep communicating effectively if/when plans change?*
- *In what ways can people ask for help, voice concerns, or express dissatisfaction?*

Context:

- *What challenges make it difficult to put plans into action?*
- *What external relationships/bodies are improving the community's capacity?*
- *How can we share our successes and challenges with other communities, NGOs, and government?*

**Learning outcomes:**

- Communicate with relevant external bodies about plans, ideas, gaps, and needs.
- Acquire assets, resources, and supports from external bodies (e.g., neighbouring communities, government, NGOs).
- Direct external supports to address areas in which the community is not self-sufficient (i.e., cannot meet its own needs).
- Implement plans from Stage Four in a collaborative and experimental spirit (i.e., learning by doing together).
- Allow time and space for learning new roles and incorporating lessons learned.