BC COMMUNITY FOREST PERSPECTIVES AND ENGAGEMENT IN WILDFIRE MANAGEMENT

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BC COMMUNITY FOREST PERSPECTIVES AND ENGAGEMENT IN WILDFIRE MANAGEMENT

September 2020

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Research Team

Dr. Lori D. Daniels
Forest and Conservation Sciences, Faculty of Forestry, UBC
lori.daniels@ubc.ca

Dr. Shannon M. Hagerman
Forest Resources Management, Faculty of Forestry, UBC
shannon.hagerman@ubc.ca

Kelsey Copes-Gerbitz
Forest and Conservation Sciences, Faculty of Forestry, UBC
kelsey.copes-gerbitz@ubc.ca

Sarah Dickson-Hoyle
Forest and Conservation Sciences, Faculty of Forestry, UBC
sarah.dickson-hoyle@ubc.ca

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The UBCM, FNESS and BCWS are members of British Columbia's Provincial Fuel Management Working Group, which managed the Strategic Wildfire Prevention Initiative (SWPI), recently replaced by the Community Resiliency Investment Program (CRIP).

Cover image: Post-harvest burn, Harrop-Procter Community Forest. Photo credit: Erik Leslie.

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Author Contribution Statement

S. Dickson-Hoyle and K. Copes-Gerbitz co-authored this report and provided equal contributions to project design, implementation, and writing. S.M. Hagerman and L.D. Daniels are senior authors who provided strategic project oversight and direction.

Executive Summary

The 2017 and 2018 record-breaking wildfire seasons in British Columbia highlighted the vulnerability of communities to large, intense wildfires. Today, fire-affected communities and landscapes throughout the province are still experiencing social, economic and ecological impacts. The COVID-19 pandemic has elevated the urgency of proactively addressing wildfire risk. Yet many communities remain unprepared and continue to face challenges in accessing the funding and expertise needed effectively mitigate wildfire risk.

Community Forests have emerged as leaders by employing innovative solutions to address wildfire risk and protect their communities and the forests on which they depend. For many Community Forests, the 2017/18 wildfire seasons catalyzed their focus on proactive wildfire management, and galvanized community support for these efforts. To better understand Community Forest approaches to wildfire management, including the factors that enable innovation and the ongoing challenges they face, we interviewed Community Forest managers from 24 different Community Forests in the summer of 2019. These Community Forests represent a diversity of forests, fuels, and governmental jurisdictions – their responses provide key insights for improving community engagement in proactive wildfire management.

This report documents a range of community-identified solutions, ongoing challenges, and priorities for the future of wildfire management in British Columbia.

Community Forest Solutions

Not surprisingly, this report finds that Community Forest approaches to addressing wildfire risk are as diverse as the communities they represent. These approaches include: 1) planning (e.g. developing or updating Community Wildfire Protection Plans, now known as Resilience Plans); 2) removing hazardous fuels ('fuels treatments'); 3) building capacity for wildfire response; and 4) homeowner preparedness and community outreach. While Community Forests are currently emphasizing the second approach (designing and implementing effective fuels treatments), there is an emerging focus on cross-jurisdictional and collaborative planning.

Two key insights arise from this research. First, the experiences and lessons shared by respondents illustrate the need for extensive trust-building and strong relationships between Community Forests, Indigenous communities, provincial government officials, fire scientists and other local stakeholders. Second, all Community Forest managers spoke of how critical funding is for implementing proactive wildfire management. External funding programs include the Strategic Wildfire Prevention Initiative, which transitioned to the Community Resiliency Investment program in 2019, and the Forest Enhancement Society of BC (FESBC). The FESBC funding is highly regarded by Community Forest managers because they support multi-year, multi-jurisdictional collaboration and provide funding-specific experts to support Community Forests achieve their goals.

Ongoing Challenges

While Community Forests are finding innovative solutions to wildfire risk, limited financial capacity (including administrative burdens associated with accessing funding programs), a lack of operational and scientific expertise, community expectations, and the limitations of existing planning and legislative frameworks continue pose challenges. Many Community Forests find it difficult to negotiate trade-offs between competing forest and wildfire management objectives, particularly when managing multi-value landscapes close to communities. While recent wildfire seasons have heightened community perceptions of risk and catalyzed action, immediate wildfire-recovery actions often take precedence over further proactive approaches – a worrying trend given the increasing number of communities impacted by wildfire.

Future of Wildfire Management

Community Forest managers identified three overarching priorities for the future of wildfire management in BC:

1) Refocusing management with a 'fire lens': Wildfire management is increasingly a priority and guiding objective for Community Forests. Existing management plans and policies need to be revisited given improved understanding of fire risk, and the need for greater flexibility regarding fuels treatments. Wildfire management needs to be an explicit value and objective within forest tenures.

2) Managing fire for landscape resilience: Prescribed burning can achieve multiple objectives. Restoring fire to the land as an ecological and cultural process and as fuel hazard reduction, and adaptively managing in the face of observed and predicted climate change, is a priority for many Community Forests and communities.

3) Scaling up collaboration: Big-picture thinking includes scaling up areas to be treated and planning at a landscape level. This requires broadening the focus of community wildfire protection beyond the current 2 km designated WUI boundary. Increasing collaboration between communities, tenure holders, government agencies and First Nations is key for achieving these goals.

Recommendations

The findings of this report highlight four key recommendations that can support Community Forests, and communities across BC, develop proactive solutions to address wildfire risk:

1) Continue multi-year funding programs, supported by program-specific liaisons and experts. These funding programs are critical for scaling up treatments to the landscape-level, enabling cross-tenure wildfire management, and offsetting financial challenges of removing fine fuels.

2) Provide additional tools and training to overcome persistent capacity issues around wildfire science and best practices for fuel treatments, including more prescribed fire and cultural burning led by Indigenous communities. Smaller, newer, and more remote Community Forests often struggle to find the expertise and time to dedicate to wildfire management even when it is a priority.

3) Continue to revisit forestry planning and legislative frameworks, such as the Forest and Range Practices Act and Land-Use Plans, to prioritize wildfire risk reduction where appropriate. Community Forest managers find it difficult to manage for all resource values at once, especially when they are at odds with wildfire risk reduction guidelines.

4) Expand government outreach positions dedicated to building synergistic collaborations that address wildfire risk at multiple scales beyond the Community Forest tenure. While Community Forests are uniquely situated to address risk in the WUI, very few have the capacity to work beyond their tenure to landscape-level approaches that will ensure equitable benefit to both urban and rural communities.

Table of Contents

1. Wildfires and Community Forests in British Columbia

1.1 Wildfires in BC

The 2017 and 2018 record-breaking wildfire seasons in British Columbia (BC) highlighted the current wildfire risk to communities surrounded by grasslands or forests representing a variety of fuel types. Most communities in BC recognize this risk, but many remain unprepared to address it due to a lack of internal capacity, including expertise and time, and challenges accessing funding[1,2].

In BC, Community Forests have emerged as leaders in addressing wildfire risk around their communities[3]. Community Forests are an area-based tenure developed in 1998 to manage for local cultural, ecological, economic, and social values. As of project commencement (May 2019), 58 Community Forests licenses were awarded across all BC Wildfire Service Fire Centres and Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) regions, reflecting the diversity of community, forest, and fuel types in BC. Given this diversity, Community Forests are uniquely situated to address wildfire risk through innovative solutions while negotiating trade-offs inherent in the wildland urban interface (WUI).

1.2 Funding community wildfire management

In 2004 the Strategic Wildfire Prevention Initiative (SWPI) was established as a suite of funding programs, administered by the Union of BC Municipalities, to support communities address wildfire risk by developing Community Wildfire Protection Plans (CWPPs) and implementing fuels management in the WUI. While many communities and Community Forests benefitted from the $81 million of SWPI funding[4], very few communities in BC felt prepared for the extreme 2017 and 2018 wildfire seasons.

In response to these extreme wildfire seasons the province initiated a new funding source, the Forest Enhancement Society of BC (FESBC), and transitioned the Strategic Wildfire Prevention Initiative (SWPI) into the Community Resiliency Investment (CRI) program. While the SWPI program provided $81 million to communities between 2004 and 2018, it was a cost-shared program that did not support planning or fuels reduction on private land or areas outside the 2 km WUI boundary around communities. The CRI and FESBC programs aim to address these gaps by providing funding for FireSmart activities on private land, landscape-level approaches to fuel reduction, and allowing equal access to funding in line with the recommendations from the BC Flood and Fire Review[5].

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[1] Daniels, L.D., S.M. Hagerman and S. Ravensbergen. 2018. Wildfire Prevention and Fuels Management in the Wildland-Urban Interface: BC Community Perceptions. Report to the Union of BC Municipalities, First Nations' Emergency Services Society, BC Community Forest Association and BC Wildfire Service. May 2018. 30pp. (PDF)

[2] Ravensbergen, S., K. Copes-Gerbitz, S. Dickson-Hoyle, S.M. Hagerman, and L.D. Daniels. 2020. Community Views on Wildfire Risk and Preparedness in the Wildland Urban Interface. Report to the Union of BC Municipalities, First Nations' Emergency Services Society, BC Community Forest Association and BC Wildfire Service. February 2020. 32pp. (PDF)

[3] Community Forest Indicators 2019: Measuring Benefits of Community Forestry. September 2019. British Columbia Community Forest Association. 32 pp.

[4] Saltman, J. 2018. Provincial program provides money to protect BC communities from fires. Vancouver Sun.

[5] Abbott, G. and M. Chapman. 2018. Addressing the New Normal: 21st Century Disaster Management in British Columbia. Report for Government and British Columbians. April 2018. 148pp. (PDF)

The CRI program, including $60 million for FireSmart Community Funding and up to $25 million per year through 2022 for Crown Land Wildfire Risk Reduction, continues to respond to community feedback, including increasing the maximum grant limit and providing supplemental guidance for applications. The FESBC program has supported over 250 projects valued at over $230 million (with approximately half of the projects still to be completed), specifically to help landscape-level wildfire risk reduction, low-value fibre utilisation and rehabilitation of damaged stands. The 2020 FESBC intake is continuing to offer funding for fibre utilisation and rehabilitation of damaged stands; future funding opportunities will depend on additional allocations by government..

1.3 Project overview

This project aims to better understand approaches to wildfire management undertaken by Community Forests, including the factors that enable and challenge their efforts. This report provides lessons learned and key recommendations to:

- promote Community Forests' solutions for overcoming persistent capacity and policy barriers to proactive wildfire management in BC; and
- inform policymakers, provincial government officials and community leaders of the benefits and challenges of existing factors that influence success of wildfire management in BC.

For the purposes of this report we draw on the Canadian Wildland Fire Management Glossary[6] to define 'wildfire management' as "the activities concerned with the protection of people, property and forest areas from wildfire and the use of prescribed burning for the attainment of forest management and other land use objectives, all conducted in a manner that considers environmental, social, and economic criteria". This definition encompasses activities relating to wildfire prevention, preparedness (including pre-suppression), response (detection and suppression) and recovery, and requires consideration of fire ecology relationships. In this report, we broaden the scope to include all ecosystems, including grasslands, shrublands and all types of forests.

We further define 'proactive' approaches to wildfire management as those focussed on wildfire prevention and/or preparedness, including fuel hazard treatments and mitigation.

For an overview of key terms used in this report see **Table 1** below.

Between May and August 2019, we interviewed 26 Community Forest representatives from 24 Community Forests, comprising forest managers (n=22), contractors (2), an administrator (n=1) and a board member (n=1) (for the purposes of this report, collectively referred to in the text as "managers"; positions current at time of interviewing in summer 2019). These Community Forests were selected to represent a diversity of forest and fuel types, governance arrangements, and forest and fire management jurisdictions throughout BC (**Figure 1, Table 2**). These Community Forest licenses are held by municipalities, First Nations, community non-profit societies or jointly by First Nation – municipal partnerships. Data were obtained from individual Community Forest websites and from the BCCFA Status Report table (May 30, 2019).

[6] https://www.ciffc.ca/sites/default/files/2019-03/CIFFC_Canadian_Wildland_Fire_Mgmt_Glossary_2017_10_24.pdf

Interviews averaged approximately one hour in duration and covered the following key topics: values and objectives guiding management of the Community Forest; perception of wildfire risk and hazards; current and desired approaches for wildfire management; engagement with provincial and federal wildfire funding programs (i.e. SWPI, CRI, FESBC); landscape level fire management; and visions for wildfire management into the future.

Where respondents waived confidentiality, we have referred to their specific Community Forest in this text. For respondents who requested full or partial confidentiality, we simply attribute their quotes to "Community Forest manager". A full list of respondents (excluding those who selected full confidentiality) is included in Appendix 1.

Table 1: Glossary of terms

Term	Definition[1]
fuel load	The dry weight of combustible materials per unit area.
fuel treatment	Treatment of living or dead forest fuels to diminish the likelihood of a fire starting, and to lessen the potential rate of spread and resistance to control. A form of prevention/mitigation.
mitigation	The actions taken to reduce the impact of disasters in order to protect social, cultural, environmental and economic values (including lives and property).
preparedness	Included pre-suppression activities i.e. those fire management activities in advance of fire occurrence concerned with the organization, training and management of a fire fighting force and the procurement, maintenance and inspection of improvements, equipment and supplies to ensure effective fire response. Also includes activities that prepare individuals and communities to better respond to a fire, such as planning.
prescribed burning	The knowledgeable application of fire to a specific land area to accomplish pre-determined forest management or other land use objectives.
prescribed fire	Any fire utilized for prescribed burning; usually ignited according to agency policy and management objectives.
prevention	Actions taken to avoid the occurrence of negative consequences associated with a given threat; can be part of mitigation. In BC, this falls under the emergency management pillar of 'Mitigation'.
risk	The effect of uncertainty on objectives. Often expressed in terms of a combination of the consequences of an event and the associated likelihood of occurrence.

[1]Adapted from CIFFC, 2017. Note: we did not edit quotations to standardize terminology and as such terminology used in quotations may vary.

Figure 1: Locations of Community Forests interviewed

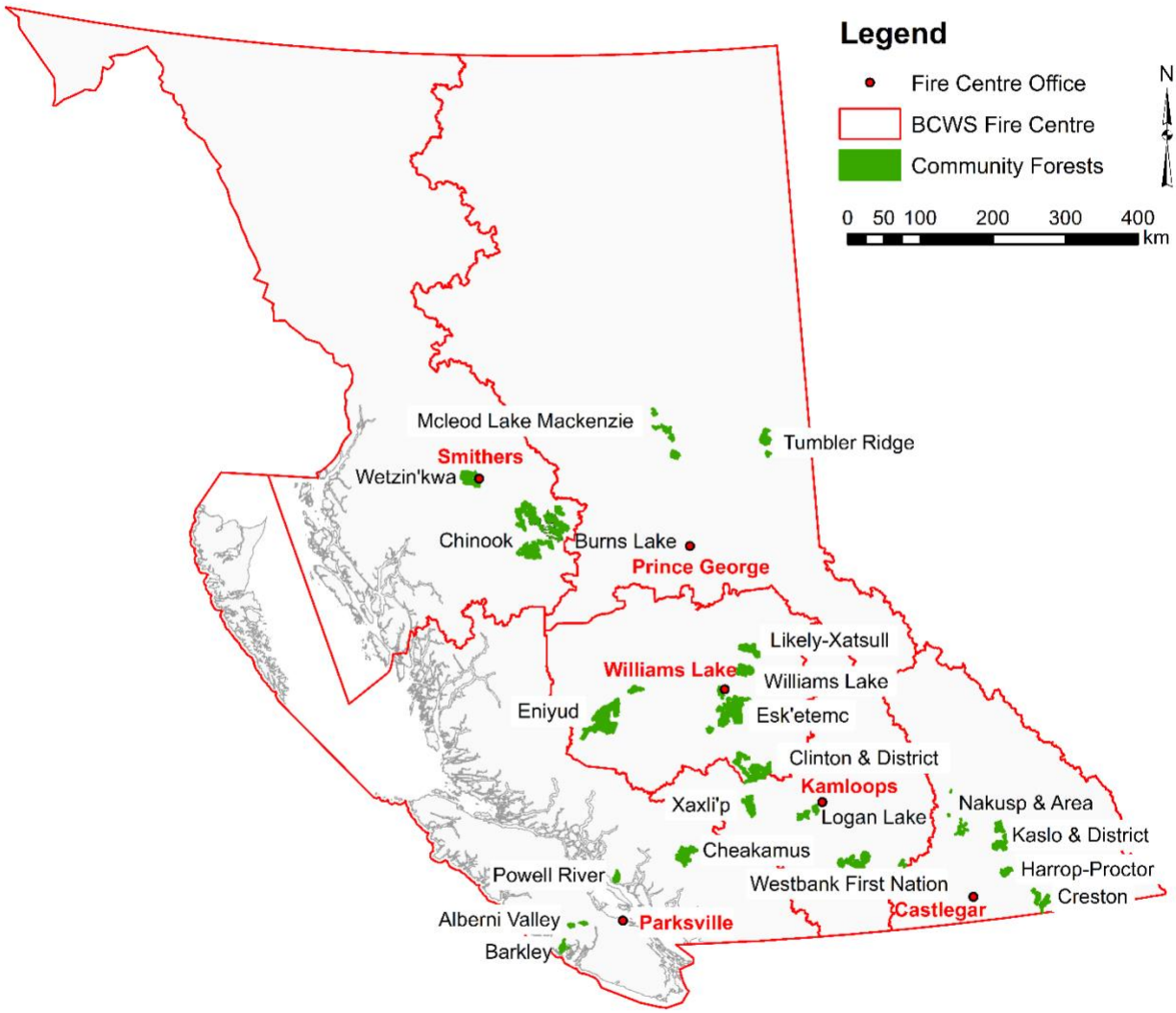

Table 2: Subset of all Community Forests interviewed

Community Forest	Area (ha)	Year Established[1]	Shareholder(s)	FLNRORD Region and District	Fire Centre
Alberni Valley Community Forest	6,378	2009	Alberni Valley Community Forest Corporation (City of Alberni Valley)	West Coast – South Island	Coastal
Barkley Community Forest	6,760	2015	Barkley Community Forest Corporation (Toquaht Nation, District of Ucluelet)	West Coast – South Island	Coastal
Burns Lake Community Forest	92,000+	2000	Burns Lake Community Forest Ltd.	Skeena - Nadina	Northwest
Cheakamus Community Forest	Approx. 33,000	2009	Squamish Nation, Lil'wat Nation, Resort Municipality of Whistler	South Coast – Sea to Sky	Coastal
Chinook Community Forest	104,000	2016	Burns Lake Band, Cheslatta Carrier Nation, Lake Babine Nation, Nee Tahi Buhn First Nation, Skin Tyee Band, Wet'suwet'en First Nation, Village of Burns Lake, Regional District of Bulkley Nechako (Areas B and E)	Skeena - Nadina	Northwest
Clinton and District Community Forest	62,000	2014	Village of Clinton	Cariboo – 100 Mile House	Cariboo
Creston Community Forest	21,408	2008[2]	Creston Valley Forest Corporation (Town of Creston, Regional District of Central Kootenay, Wildsight, Erickson Community Association, Trails for Creston Valley Society)	Kootenay/Boundary - Selkirk	Southeast
Eniyud Community Forest	Approx. 115,000	2007	Eniyud Community Forest Ltd. (Alexis Creek Tsi Del Del First Nation, Tatla Lake Resource Association)	Cariboo – Cariboo-Chilcotin	Cariboo
Eskétemc Community Forest	27,000	2006	Eskétemc First Nation	Cariboo – Cariboo-Chilcotin	Cariboo
Harrop-Procter Community Forest	11,300	2000	Harrop-Procter Community Co-operative	Kootenay/Boundary – Selkirk	Southeast
Kaslo and District Community Forest	32,416	2004[2]	Kaslo and District Community Forest Society	Kootenay/Boundary – Selkirk	Southeast
Likely Xat'sull Community Forest	20,000	2003	Likely Community Forest Society and Soda Creek Indian Band	Cariboo – Cariboo-Chilcotin	Cariboo
Logan Lake Community Forest	16,772	2008	Logan Lake Community Forest Corporation (District of Logan Lake)	Thompson/Okanagan – Thompson Rivers	Kamloops
McLeod Lake Mackenzie Community Forest	24,664	2009	McLeod Lake Indian Band, District of McKenzie	Omineca – Mackenzie	Prince George
Nakusp and Area Community Forest	Approx. 10,000	2011	Nakusp and Area Community Forest Inc. (Village of Nakusp)	Kootenay/Boundary - Selkirk	Southeast
Powell River Community Forest	7,100	2006	Powell River Community Forest Ltd. (City of Powell River)	South Coast – Sunshine Coast	Coastal
Tumbler Ridge Community Forest	19,739	2011	Tumbler Ridge Community Forest Corporation (District of Tumbler Ridge)	Northeast - Peace	Prince George
Westbank First Nation Community Forest	46,000	2004	Westbank First Nation	Thompson/Okanagan – Okanagan Shuswap	Kamloops
Wetzin'kwa Community Forest	32,897	2007	Wetzin'kwa Community Forest Corporation (Town of Smithers, Village of Telkwa)	Skeena – Skeena Stikine	Northwest
Williams Lake Community Forest	28,828	2014	Williams Lake First Nation, City of Williams Lake	Cariboo – Cariboo-Chilcotin	Cariboo
Xaxli'p Community Forest	24,5000	2011	Xaxli'p Community Forest Corporation (Xaxli'p First Nation)	Thompson/Okanagan - Cascades	Kamloops

[1]Refers to year of license issue. Note: some CFAs were initially issued Probationary CFAs licenses and/or were part of the initial CFA Pilot. In these instances, the date of establishment refers to the date of issue of these earlier licenses.
[2]One of three communities to be awarded a 15-year Non-Replaceable Forest License in 1997

2. The changing landscape of wildfire risk

2.1 Perceptions of wildfire risk

Community Forests are as diverse as the communities across BC, and every Community Forest differs in its approach to managing for priority values, its reasons for establishment, and its perceived risks. Wildfire is one of many risks that Community Forests face, yet there is variation across the province in how severe the perceived risk is; from "*a risk…but not a high risk*" in the Barkley Community Forest on the coast to being "inevitable" in other parts of the province. One Community Forest manager highlighted this perceived inevitability in predicting that "*eventually everything is going to burn anyways*." Several managers spoke of decades of inaction addressing wildfire risk contributing to this inevitability, which is noteworthy given the potential for catastrophic impacts:

"*From a catastrophic perspective, I would say that fire is probably the biggest risk for us and it would hold true for anybody with a forest tenure, because it's a risk you can't measure or you can't really control.*"
(Community Forest manager)

This risk is particularly acute for Community Forests because of the nature of their area-based tenure. Several Community Forests spoke of the unique long-term implications of being impacted by fire in an area-based tenure compared to a volume-based tenure:

"[Fires like those in 2017], that's our biggest fear. We have an area-based tenure. If we lose 20,000 ha out of 80,000, that's a quarter of our operating area. And we might be able to salvage harvest in that 20,000 ha for three years and then after that it's game over for that area for us in our lifetime. For a Community Forest the stakes are much higher…we're tied to the land...so we have to do something to manage the fires rather than just react to them or go and focus in some other area."
(Eskétemc Community Forest manager)

Despite wildfire being a broadly accepted risk, managers' risk perception and approaches to addressing risk reflect the unique context of their Community Forest, including specific values, ignition sources and fuel types. Wildfire is often considered a direct risk to important Community Forest values, with people being a primary ignition concern:

"*Fire is a big risk, especially for water quality. If we burn up our watershed our water quality's going to be out the window…And the risk goes up with more public out there. And unfortunately there's a pretty high component of that public that don't have a clue in terms of fires.*"
(Powell River Community Forest manager)

Lightning ignitions are also of concern, especially in areas of high fuel loads and hazardous fuel types such as in mountain-pine beetle affected-stands:

"*I'm very nervous about where pine was a minor component of a stand and is now laying on the ground. You can hardly walk through these forests right now and they are constrained because of ECA [Equivalent Clearcut Area], visuals etc. These forests are a HUGE, huge fire risk…should we get a lightning strike in one of those…you're not stopping that fire*" (Westbank First Nation Community Forest manager)

Wildfire risk is also variable depending on the forest type, which is closely tied to where in the province Community Forests are located. One Community Forest on the coast noted:

"*I think there's a difference between our old growth and the interior's second-growth. Old growth doesn't burn as much as second growth…The duff layer is important, we have some fine [fuels], but second growth is different - you got a lot of twigs, a lot of branches – old growth not as much*."
(Barkley Community Forest manager)

Regardless of the perceived level of wildfire risk, all Community Forest managers discussed ways in which they are working to mitigate this risk (see Section 2.2 and 3). In general, their approaches are targeted to where the perceived risk is the highest, which has prompted some managers to think beyond the boundaries of their Community Forest:

"*We're in the interface zone yes because we're 2km from the interface, but we're away from any structures. [Fuel management] is always a priority, but there are other areas in the vicinity [outside of the Community Forest including private land] where fuel management work could be done…because there are some houses and there is some high fuel loading there*." (Community Forest manager)

As described by the Powell River Community Forest manager on page 6, community perceptions of wildfire risk are not necessarily the same as Community Forest managers'. While this has posed a challenge to some Community Forests' ability to undertake proactive wildfire management (discussed in Section 4.2), many managers spoke to the 2017 and 2018 wildfire seasons as a catalyst for shifting perceptions of wildfire risk:

"*You know these big fires that we're experiencing, with really erratic fire behaviour, it's eye opening. And it would be naïve to think that we wouldn't experience that. We absolutely would."*
(Logan Lake Community Forest management)

Some Community Forest managers noted that the 2017 and 2018 wildfire seasons were their "wake-up call" for the importance of proactive wildfire management:

"I mean the diligent people should be doing [fire mitigation] on their own, but it takes a major event like we had in 2017 to kind of slap everybody in the face and wake up a bit, right?"
(Likely Xat'sull Community Forest manager)

The 2017 and 2018 wildfire seasons also enhanced many community members' perceptions of wildfire risk. Several managers spoke of how the *"timing was right"* to address risk after the 2017 and 2018 wildfire seasons and the urgency with which community members were asking for mitigation: "*literally our phone was ringing and people were saying, 'When are you going to start? Couldn't you start soon?'"*. This urgency allowed Community Forest managers to work in areas where people were previously opposed to works being done, with one manager stating that "*There's more awareness of the problem and that allows us to take it further than we would 10 years ago*".

However, the extent of this increased awareness among community members largely depended on whether individual communities were affected by wildfire in 2017 or 2018. When asked whether the community perspectives shifted in the same way that managers' did after the 2017 and 2018 wildfire seasons, the manager of Burns Lake Community Forest responded: "*I think in 2017, I'm not sure they really did, not around here, because it wasn't in their backyard. Right? I think 2018 because it was right in our backyard, it really brought it to the forefront.*"

Community Forest managers also worry that perceptions of risk among community members will wane if BC does not experience widespread wildfire seasons in subsequent years. Reflecting on the wet summer of 2019 during which only 21,000 ha burned in BC (compared to 2.5 million ha in 2017 and 2018), the Chinook Community Forest manager said: *"If we go through another two summers of a wet one like we are, [wildfire] will be off the publics' radar again."* However, the manager noted that it was their responsibility to continue addressing wildfire risk despite the current weather because of its inevitability:

"As long as I'm manager [wildfire] won't be off my radar. I'll keep pushing for it whether it's raining or not…we live in a fire-based ecosystem, so it's going to burn whether we want it to or not."

2.2 Addressing wildfire risk in the Community Forest context

Wildfire risk is often at the forefront of management decisions, yet other perceived risks (e.g. timber economy and forest health), community values (e.g. recreation, Indigenous cultural values, community watersheds), and legal planning frameworks must also be considered; negotiating these trade-offs is discussed in more detail in Section 4.3.

Despite the complexity of these trade-offs, the Community Forest tenure *"allows [us] to be far-sighted"* in approaching wildfire management. Through this tenure, Community Forests have the flexibility to drive innovation or to be *"first out the door"* (Burns Lake Community Forest manager) in protecting communities:

"*From a prescription perspective, because we've been on the leading edge sometimes, we'll have groups of agency reps out there and if nobody can agree that it's been done correctly to their perspective, we think we must be pretty close to where we want to be. Because nobody is quite happy, but most people are okay with what we've done. You can't manage for everything in one space when it comes to community protection. And we have to find that middle ground, but edge toward community protection. People seem to be accepting of that.*" (Community Forest manager)

Community Forest tenure is particularly important for allowing managers to respond directly to the perceived inevitability of wildfire impacts: *"I know one day it's going to burn, [but] we can mitigate how much it's going to burn"* (Chinook Community Forest manager). The diversity of approaches to address wildfire risk reflects the unique context of each Community Forest:

"*What's going to work for Williams Lake and Quesnel and Burns Lake and their exposure to different pulls on the land base and perceptions of risks and threats, isn't necessarily going to work in a community that's been shielded from smoke and mountain pine beetle damage.*" (Community Forest manager)

3. Fuels treatments to FireSmart: proactive approaches to wildfire

The majority of Community Forest managers interviewed have been successful in applying for funding through one or more of the SWPI, CRI or FESBC programs. Managers see this funding as being critical for supporting a range of wildfire prevention and preparedness initiatives within the Community Forests and the WUI more broadly. When discussing the FESBC funding, one Community Forest manager emphasized that *"without the funding, we wouldn't be doing any of it…[the funding] is critical to the success of those programs"*. These funding programs support a diversity of approaches to wildfire management at both local and regional scales, which fall broadly into the following four categories: 1) planning (e.g. developing or updating Community Wildfire Protection Plans, now known as Resilience Plans); 2) fuels treatments; 3) building capacity for wildfire response; and 4) homeowner preparedness and community outreach.

3.1 Planning

Many communities represented in this project have a current CWPP and the Community Forests played an important role in seeking funding for, developing and/or implementing the CWPP. In some cases, this is through the municipality or regional district developing the CWPP and working closely with the Community Forest to complete fuel treatments. For example, the Resort Municipality of Whistler has a Memorandum of Understanding with the Cheakamus Community Forest to contract the Community Forest for any fuel treatments within the Community Forest tenure. Through this arrangement the Cheakamus Community Forest is delivering the municipality's landscape fuel break plan and has completed SWPI-funded projects, including a fuels treatment in the WUI above the Alpine Meadows neighbourhood, with the municipality contributing the matching funding.

However, for many communities including Nakusp and Eskétemc, the Community Forest itself has been responsible for leading the development of the CWPP. Managers described how having a Community Forest take on this leadership is particularly important for municipalities that lack the internal capacity or resources to navigate funding applications and coordinate planning processes:

"Some municipalities are so far behind they don't even have a CWPP done. And we recognize how lucky we are to have that connection and have a Community Forest that is on board for taking over that. Because I think that is key for a municipality. And for Community Forests, it seems like most of them are…taking on that role." (McLeod Lake Mackenzie Community Forest board member)

Community Forests are also undertaking strategic or landscape level wildfire planning outside of the CWPP process. For Kaslo and District Community Forest this has involved the development of the *2020 Landscape Level Fire Plan*[7]. This plan was funded through a 2018 $50,000 grant from FESBC and is intended as a planning tool to implement strategic fuels treatment areas within the Community Forest tenure. The Burns Lake Community Forest manager spoke of how the recently completed *Burns Lake Community Forest Landscape Fire Management Plan*[8] guides wildfire management as part of forest stewardship and harvesting planning:

[7] https://kaslocommunityforest.org/wp-content/uploads/2020/03/KDCFS-2020-LLWP-REPORT-Signed.pdf
[8] https://blcomfor.com/wp-content/uploads/2019/05/Burns-Lake-LFMP_14May2019_FINAL.pdf

"I'm hoping that as a result of this plan, I can now utilize it to sort of step off and go 'in relation to the fire management plan, here's my proposed forest stewardship plan for stocking standards for fire-based ecosystem management.' Or 'here's my strategy for tactical operational harvesting within the 2km zone or the 5km zone, or within the rest of the Community Forest.'… I feel like it set the stage for me to hang those key pieces on."

Other Community Forest managers similarly talked about the importance of considering wildfire risk when developing forest stewardship plans and timber supply analyses. For example, Creston Community Forest explicitly considered high risk WUI areas and the need for fuels treatments when conducting their timber supply analysis, and successfully proposed to exclude certain areas from their timber harvest land base in order to avoid replanting post-treatment. The manager of Logan Lake Community Forest emphasized the importance of strategic planning, including engaging with BC Wildfire Service and FLNRORD, at a landscape level and of creating a mosaic of vegetation types and structures across the landscape. From a forest management perspective this involves promotion of deciduous species, consideration of new species such as larch, and analyses of strategic fire breaks and access and egress routes. A focus on engaging stakeholders during planning processes was also highlighted by the manager of Westbank First Nation Community Forest. At the time of interviewing, this Community Forest was about to commence a community and stakeholder planning process to identify wildfire risks and important values across their tenure, and to discuss how to integrate wildfire risk analyses and management into their existing forest management and conservation planning units.

3.2 Fuels treatments

One of the most frequently mentioned approaches to managing wildfire risk in Community Forests was conducting treatments to alter fuel arrangements and reduce fuel loads to mitigate the associated risk of high intensity wildfire ('fuels treatments'). Fuels treatments were also discussed as being a key focus of funding applications.

Community Forests play an important role in leading the development of prescriptions and implementing fuels treatments, both in the Community Forest tenure and in the broader WUI. These prescriptions vary substantially both within and between Community Forests, reflecting ecological and topographic diversity as well as analyses of wildfire risk. A commonly described approach was to initially focus intensive management within close proximity (e.g. within 500 meters) of the community itself then work outwards. Over the past five years Westbank First Nation Community Forest has received funding to treat approximately 150 hectares of the interface, predominantly around Glenrosa and Rose Valley neighborhoods:

"Our first line of defence at the interface is the SWPI and FESBC funded treatments. It's gorgeous when we're done, the areas look like a park. We're down to between 300 and 350 stems per hectare of generally fairly large diameter Douglas-fir… and ponderosa pine."
(Westbank First Nation Community Forest manager)

Beyond these interface treatments, Westbank First Nation Community Forest have treated approximately 200 additional hectares through thinning and partial cuts; an approach that the manager described as similar to the SWPI- and FESBC-funded interface treatments but not *"as pretty afterwards".* Another Community Forest manager also referred to the *"park-like"* look of treatments within the WUI, which involve thinning to approximately 350-400 stems per hectare compared to more intensive (e.g. 200 - 250 stems per hectare) treatments further away from town.

Similarly, Harrop-Procter Community Forest is prioritizing areas high wildfire risk areas at lower elevations, closer to towns, for fuels treatments. Their manager spoke of two fuels treatments planned adjacent to the towns of Harrop and Procter. These are planned as partial cuts involving thinning from below, removal of surface and ladder fuels, and breaking the canopy up to try to reduce the canopy to approximately 20-40% canopy closure (down from 60-100%). In 2019 Creston Community Forest completed the first phase of fuels treatment in close proximity to the residential areas of Canyon and Lister, focussing on opening the overstory to achieve a canopy spacing of approximately six to eight metres.

In addition to these treatments immediately adjacent to residential areas, many Community Forests are focussing on creating strategic linear fuel breaks to reduce the risk of wildfire spread and to support safe access and egress during a wildfire event. Macleod Lake McKenzie Community Forest aims to improve safety along the single evacuation road from McKenzie to Prince George by treating up to 150 meters of forest on either side of a 39-kilometer length of road. This treatment would involve working closely with private landholders, other tenure holders and the municipality. For Logan Lake Community Forest, a key concern is the potential for ignitions alongside the Coquihalla Highway, which runs parallel to part of their Community Forest. To reduce this risk they are constructing a new road within the Community Forest, parallel to and offset approximately 150 metres from the highway, and plan to thin the area in between. While these treatments would all take a 'thinning from below' approach, the Logan Lake Community Forest manager emphasized the importance of *"boots on the ground"* to develop unique prescriptions based on local ecologies and fuel types. In the Cariboo Region, Eskétemc Community Forest is combining the relocation of a range fence with construction of a fuel corridor that will serve as an anchor point in the case of landscape level fires. To do this, they have been working closely with a local Landowners Association and the Fire Chief to identify how multiple community needs, including ranching and wildfire management, can be met simultaneously.

The labour-intensive requirements of conducting these fuel treatments was frequently mentioned by managers throughout the province:

"The debris clean up on the ground is huge, because in logging obviously there's waste rules that they have to follow. But for the fuel thinning, one kilogram per cubic metre is all of the fine fuel that can be left on the ground, so to convince those guys that "yes you have to go and pick up sticks!"
(Community Forest manager) (Figure 2)

Figure 2: Phase 1 of constructing a landscape fuel break that is approximately 36 ha along Cheakamus Lake Road. Funding was provided through FESBC and the Resort Municipality of Whistler and contracted works to Lil'wat Forestry Ventures. Photo shows roadside biomass recovery: 3000m^3 was sent to the Whistler Composting Facility with the remainder chipped or burned on site.

While many Community Forest managers spoke of using specialized machinery to conduct these treatments – utilizing smaller equipment such as harvester processors or small forwarders – others mentioned that fuels treatments close to town were done by hand (i.e. use of hand fallers and pruners, followed by pile burning) or horse logging, as is the case with Xaxli'p Community Forest. Logan Lake Community Forest, in collaboration with the District of Logan Lake and the Logan Lake Wellness, Health & Youth Society, combines fuels treatments with community outreach and skills building by paying local youth primarily high school students to conduct treatments – under supervision, and with hand tools only (Figure 3).

The intensive nature of fuels treatments is associated with high costs: managers quoted between $5,000 per hectare (interior dry forests) to up to $35,000 per hectare (coastal forests). As such, some Community Forest managers are integrating hazard reduction into their forestry operations:

> *"The key thing is don't log too early, especially in the second-growth fir. If you log too early there's way more waste. Like if you log at 40 to 50 years, there's way more waste than if you log at 60 or 70 years. Because so much of the tree is topped and the branches haven't self-pruned you create way more slash, whereas if you wait for 60 or 70 years all the lower limbs have self-pruned and broken down and degraded. And then you have a higher percentage of the volume [that] is utilized than left behind as waste."* (Alberni Valley Community Forest manager)

Figure 3: Logan Lake Fire Chief Dan Leighton discussing the value of conducting fuels treatments in mitigating the wildfire intensity and spread with Logan Lake Secondary School students.

The manager of Tumbler Ridge Community Forest shared their approach of employing a select harvest model in a forest patch dominated by white spruce and lodgepole pine that immediately borders the northern edge of Tumbler Ridge (Figure 4). The site plan outlines the dual objectives of reducing fuel loads around the community, while also salvaging mountain pine beetle affected lodgepole pine.

Figure 4: Block 21, with a total area 54.8 ha, located north of Tumbler Ridge, before (above) and after (below) a selective harvesting treatment. This block also contained a network of horse trails, which were retained. The road was also converted to a horse-riding trail when harvesting was complete.

This manager described their approach of 'testing' silviculture prescriptions to create a multi-storied stand and the recommendations from 'fire experts' to not replant these and other similarly treated stands, but rather to let the deciduous species such as aspen come up: something he plans to apply for an exemption from the Province to do. This approach reflects the way in which fuels treatments are often seen as being at odds with traditional forest management:

"We have a few cutting permits...and we got some funding through FESBC to do some fuel mitigation that's a little bit backwards to most logging operations in that we are leaving the mature trees in there and actually almost raking the forest floor and really cleaning up the fine fuels."
(Community Forest manager)

Figure 5: Veteran trees and small stem clumps remaining after fuel mitigation to enhance mule deer winter range in the 100 Mile House Community Forest.

Despite the widespread implementation of fuels treatments there is a high level of uncertainty as to how effective these treatments would be in the case of wildfire.

"Well that's the million dollar, literally the million dollar question! Because until we have a fire, we won't know how efficient or how effective they are" (Community Forest manager)

Some Community Forest managers shared experiences of wildfire igniting in or spreading to their tenure, and anecdotal evidence of treated areas preventing further wildfire spread:

"In 2017 we had another fire that was started in our zero to 500 metre [spaced and pruned] range there. And it didn't go anywhere…you could see where it had licked up the boles of the Douglas-fir, and never got into the crown" (Logan Lake Community Forest management, see Figure 3)

However, there was a general acceptance that these treatments would never stop a 'boiler' fire and that the best they can hope for is for treatments to slow a wildfire's spread and reduce its intensity enough to enable effective response and suppression and provide a "*fighting chance of stopping it before it gets to peoples' houses"* (Westbank First Nation Community Forest manager).

3.3 Building capacity for wildfire response

Community Forests vary widely in their capacities to respond to wildfire events on their tenures. Many managers mentioned ways in which they are currently working to build this capacity, from purchasing equipment and conducting training, to strengthening relationships with local fire departments and BC Wildfire Service. One of the integral parts of this training is ensuring that all contractors are aware of the legal requirements under the *Wildfire Act* and *Wildfire Regulation* and are trained appropriately:

"*I follow the updated Wildfire Regulations, do the S-100 training with the crew, get a certified trainer to come in and make sure they have all the equipment starting April 1st to October 1st - that is the dangerous season - and that they're monitoring the weather daily. That's the requirement, it's in their contract. That's our due diligence.*" (Barkley Community Forest manager)

For more remote Community Forests, building this local capacity is seen as critical to enable rapid response to wildfire – particularly during intensive wildfire seasons when local crews are often contracted elsewhere:

"We have local fire crews, but, quite often, when things get bad it's bad in the interior. Our crews will actually leave the town. And we're isolated by ferries so we're concerned. They, industry, tell us we're covered by fire fighters in Campbell River. They're on standby, that can jump in a helicopter. But we're still concerned because there's times that you can't fly a helicopter into Powell River… And we just want to make sure we can get out there and be on that fire as soon as we can."
(Powell River Community Forest manager)

For Powell River Community Forest, building response and suppression capacity has involved mapping of access roads and water sources as well as purchasing equipment such as sprinkler trailers to respond to interface fires.

A key motivation for proactively engaging wildfire agencies is ensuring that communication and operational systems are aligned:

"[the] big thing right now is talking to stakeholders…the volunteer fire department in town, then talking to BC Wildfire Service, finding out where the gaps in communication are, make sure we're using the same hoses, same radio channels, are all the hydrants mapped, that kind of thing."
(Kaslo and District Community Forest manager)

This engagement was undertaken as part of developing the Kaslo and District Community Forest's *2020 Landscape Level Fire Plan*. The manager also talked about their goal of sponsoring an S-100 course for five to ten local residents or members of the local volunteer fire department and conducting collaborative training sessions with BC Wildfire Service. Similarly, another Community Forest manager highlighted their current focus on collaborative training:

"We're also doing some interagency training, so there's a day when two Fire Departments, [the Community Forest management company], and BC Wildfire are getting together for some group [wildland fire] training…It'll also involve some sprinkler protection unit training and other strategies like that. So that's part of the grant, it really encourages interagency cooperation."

For other Community Forests, including Eskétemc, this training forms part of their focus on establishing both local and contract fire crews:

"In 2010, we established a Standing Offer with BC Wildfire to have firefighters and so we had a contract crew and that right away we became very busy... that was [a strategy] definitely from the ground up. It was a request within the community to get our own contracts."
(Eskétemc Community Forest manager)

Figure 6: Khowutzun Forest Services contract firefighting crews. Source: Cedar Elliot and Margaret Symon presentation at BCCFA 'Wildfires in Community Forests' conference, Williams Lake 2019[9]

[9] https://bccfa.ca/cfa-wildfire-workshop-2019-presentation-cedar-elliot-and-margaret-symon/

3.4 Homeowner preparedness and community outreach

Underpinning all Community Forest approaches to managing wildfire risk is a focus on community outreach and engagement. This includes outreach and education programs to support homeowners in undertaking mitigation and preparedness measures, such as FireSmart, as well as wider public and other stakeholder engagement to build support for and inform broader approaches to managing risk in the Community Forest and the WUI.

Many Community Forest managers' roles extend beyond the boundaries of the Community Forest by helping facilitate community FireSmart programs. Managers spoke positively of the FireSmart program; one Community Forest manager described it as a *"no brainer"* of *"huge benefit to the community"*. While a number of communities have a designated FireSmart coordinator, Community Forest managers often play a role in applying for funding and partnering with the municipality, municipal fire department, or regional district and supporting this local coordinator to conduct community outreach and education. For example, in 2017 Nakusp Area Community Forest applied for FireSmart funding on behalf of the village and hired a local coordinator who was initially focussed on conducting community outreach and education. The following year they partnered with the Regional District Central Kootenays, who are now coordinating a regional FireSmart program (with contributions from all represented municipalities). The regional district has now hired local coordinators to lead broader community engagement as well as the Home Partners program to conduct homeowner assessments.

Multiple managers represent communities that have been recognized as FireSmart Recognized Communities and/or have received the FireSmart Community Protection Achievement Award. These include Xaxli'p, Eskétemc, Logan Lake, Burns Lake, Cowichan Tribes, and the Resort Municipality of Whistler. The manager of one Community Forest highlighted the success of their local FireSmart program in promoting a sense of personal responsibility for managing wildfire risk:

"[We do] a FireSmart program around the homes, so we've been doing that for three years… People are really into that actually and so they are getting the message slowly that they need to clean up their homes and they have a personal responsibility for their houses, not just relying on fire fighters to protect them."

Xaxli'p's FireSmart program includes providing rebates (at approximately $25/hour) to cover the cost of doing work on properties to reduce risk, as well as holding contests and offering prizes to engage residents in the program. They have recently applied to the CRI for additional funding to continue this FireSmart program. Another Community Forest manager referred to the CRI as being *"great for getting your FireSmart program up and running. Get your residents aware, get them to making changes on the ground. It's brilliant for that. So, you know thumbs up to the province for doing that change"*.

Strong community engagement is also seen as critical for practising 'social forestry' and for being responsive to the communities that Community Forests represent. This level of engagement is enabled by the fact that managers often have a physical presence in and personal connection to these communities:

"You're close to the community – people watch you. They will voice their opinion and you will hear it. And you will hear it right away. Or the mayor will hear it right away. And so there's lots of communication that needs to happen and I think that's a very unique thing about Community Forests. The level of engagement and you know the conversations you have with community members, it's huge"
(Logan Lake Community Forest management)

The manager of Eskétemc Community Forest spoke of the *"education piece…[that has] caused us to change the way we manage our business"* in terms of a greater focus on public communication. For many Community Forests this 'education piece' involves an ongoing process of engaging with local communities to discuss wildfire risk and the implications of this risk in terms of how Community Forests are managed:

"Well the next steps are really we got to roll up our sleeves and meet with people and get the social license. I think we've been building that quietly as we move through this whole process. We've had meetings and presentations where we've talked about [wildfire] risks and some people roll their eyes and go, "oh that's not real." And some people go, "ooo." So a lot of public education I suppose, and awareness is going to increase just by what's happening." (Community Forest manager)

The community engagement approaches taken by Community Forests were often contrasted with one-way public information campaigns or 'consultation', which are seen as ineffective in building community support or engagement for management actions:

"It boils down to communication with the stakeholders. Explaining to the stakeholders and listening to the stakeholders so that we understand what their concerns and values are. Nobody likes to be told that, by somebody standing up in front of the room, "this is what we're going to do and we're going to start this, and this is the plan". When in fact it's already a done deal. So it's working from the grass roots level up, rather than dictating from the top down." (Westbank First Nation Community Forest manager)

Managers spoke of a diversity of ways by which they connect with local communities and stakeholders, including sending letters to local residents; posting announcements in local papers or social media; sharing operational plans and other information on websites and through online notification systems; holding 'wildfire open houses' in communities; meeting with residents or stakeholders on site or at their homes to discuss proposed treatments or harvesting; and liaising directly with local recreation and other stakeholder groups to ensure forestry practices don't adversely impact other community values within the Community Forest. Many managers also mentioned their 'open door policy' that encourages community members to come in and voice their questions or concerns.

Increasingly, these conversations involve talking with community members about the role of fire as an ecological disturbance process in these landscapes:

"We do a lot of discussion around why the forests look like they look like now. And the fact they didn't always look that way and they won't in the future look that way…And then people go oh! Wow. Okay! I think that's the key. Is to understand that fire history, and the fire dynamics and understand our forests as not a static thing" (Harrop-Procter Community Forest manager)

This reflects the increasing need for *"fire to become part of the conversation"* (Burns Lake Community Forest manager) to build a better public understanding of the social, environmental and economic implications of changing wildfire risk and associated management approaches.

Case study 1: Burns Lake Community Forest Boer Mountain Hazard Abatement

The Boer Mountain Hazard Abatement Project was an operational trial started in 2016 to undertake hazard abatement in a 1400-hectare area that was heavily impacted by mountain pine beetle and contained critical infrastructure and high recreational value. To address these multiple objectives, Burns Lake Community Forest implemented partial harvesting to remove the standing dead and understory trees and left most of the green standing. Rather than focusing on specific fuel management prescription objectives (such as stems per hectare or fuel load), the Community Forest manager had extensive conversations with fire management specialists discussing the partial harvesting approach more broadly and how it could be incorporated into their harvesting activities to achieve wildfire management objectives (e.g. reducing rate of spread). With FES funding to support machine piling and hand piling after harvesting, Burns Lake Community Forest reduced the fuel load from 35–60 tonnes per hectare down to 7–10 tonnes per hectare. Furthermore, because of the visibility of the area to the recreation community, this operational trial demonstrated that fuel mitigation can still maintain recreational and other resource values which are particularly important to the mountain biking community. Although at times it felt like a "*chicken and egg"* scenario without a specific prescription, the Community Forest manager said the project was "*operationally feasible, financially viable, and met our fire mitigation objectives*." Ideally prescribed fire would have been an option for helping to remove some of the fine fuels, but this operational trial allowed the Burns Lake Community Forest to address known wildfire risk in an area that was later identified as a very high hazard rating in the Landscape Fire Management Plan completed in 2019, while simultaneously balancing this against other forest values.

4. Increasing community engagement in wildfire management: enabling factors, remaining challenges and navigating trade-offs

The ability of Community Forests to actively engage in wildfire management is heavily reliant on access to funding and resources (both personnel and appropriate machinery), strong relationships with government agencies, and a level of trust and support within their communities. Conversely, limited financial capacity (including administrative burdens associated with accessing funding programs), a lack of operational and scientific expertise, community expectations, and the limitations of existing planning and legislative frameworks continue to pose challenges for many Community Forests in managing wildfire risk. Many Community Forests find it challenging to negotiate trade-offs between competing forest management and wildfire management objectives, particularly in the context of managing multi-value landscapes close to communities. While recent wildfire seasons have heightened perceptions of risk the impacts of wildfire on Community Forest tenures has often shifted focus, with immediate recovery actions taking precedence over further proactive approaches.

4.1 Enabling innovation and proactive approaches

4.1.1 Financial and resource capacity

For many Community Forests, funding from programs such as SWPI, CRI or FESBC is critical for being able to conduct fuels treatments, community engagement, and other programs to reduce wildfire risk. While Community Forest managers discussed accessing funding from both SWPI and CRI programs to conduct fuels treatments, FESBC funding was spoken of as being particularly important and on the whole, there is widespread support for and strong engagement with this program. Community Forest managers emphasized the good relationships they have with key staff at FESBC, who provide advice and expertise regarding program administration and fuels or restoration prescriptions. FESBC funding is seen as particularly valuable in that it can be used to fund multi-year or landscape/watershed level projects:

> *"FESBC allows their funding to lapse fiscals, which is fantastic. It's probably the most functional funding source that I've worked with specifically because we have the ability - if something doesn't happen because we get an early snowfall or we don't have a good winter so we don't get a lot of mechanical treatments completed - you can span that funding into the next fiscal and actually complete it when the conditions are favourable."* (Community Forest manager)

Due to the cost of implementing treatments and the SWPI requirement to match a percentage of the funding, having available funds to contribute to wildfire management programs is also key. Related to this is the ability to conduct commercially viable fuels treatments; something that is highly dependent on forest type and structure, as well as access to markets (e.g. for smaller diameter stems or biomass). For example, Tumbler Ridge Community Forest has been able to conduct all fuels treatments to date as commercial thinning or harvests.

The manager of Harrop-Procter Community Forest said that "*a lot of Community Forests are self-funding a lot of projects, whether they're formally called fuel treatments or whether they're just doing fuel treatment as a part of it [harvesting operations]"*. For Westbank First Nation Community Forest, their ability to use internal funds to cover the cost of planning and prescription development is important for being able to work around administrative timelines and move forward with operations:

"We decided to do all of the planning on our own hook rather than try to get a prescription funded through SWPI because it was just painful… So, we paid for the prescription work internally. We just did it, we did the prescription we did all of the planning work. And then we took that to SWPI saying okay we've done all of this stuff. This is what we'd like to do operationally, and we'd apply for the operations funding… Otherwise it would take four or five months just to get the prescription funding approved and by then you're already missing the window"

Being able to *"put skin in the game"* in terms of doing some of this up-front planning was described as another factor contributing to the success of funding applications. At the same time, being willing and able to absorb these costs and dedicate human resources to these planning processes and alternative approaches is enabled by Community Forests' area-based tenure:

"It's costing us a lot of money to do it [in close consultation with agencies]. Like all of these on-site meetings and changing the cutting plans a little bit as we go, it costs a lot of money to do it that way. And that's probably why it's okay for the Community Forest to be trying it out in a little different way, because if it works, maybe there's ways to bring the costs down in the future for other logging operations. But right now, we are absorbing quite a bit more of a cost to do things differently and to do more planning and to have a consultant be on-site to do the work for us." (Community Forest manager)

For other Community Forests, funding is provided by their municipality or regional district. The Regional District Central Kootenays has *"recognized that fire protection is a service they need to be investing in"* (Harrop-Procter Community Forest manager) and has hired staff to coordinate wildfire planning and funding applications. McLeod Lake Community Forest has also recently provided funding to hire a wildfire coordinator. These dedicated internal positions, and/or the capacity to hire wildfire consultants, enable communities to navigate complex funding applications and planning processes.

Other Community Forest managers highlighted the importance of finding contractors who have both the skills and machinery to conduct highly specific fuels treatments and respond to community concerns about 'industrial' logging:

"They [the public] had some concerns about that because once again, it just appears like it's industrial [logging], and I said okay well what can we do?…So I hired another contractor who has a much smaller machine called a harvester processor. And they went in there, actually I saw what they were doing, and it was just remarkable...Just really low impact and it could just maneuver in tight areas and do that type of selective logging that we wanted to do...the number one thing is just finding the right contractor." (Creston Community Forest manager)

However, even when these alternative contractors are not available, many Community Forest managers emphasized the value of spending time in the field training and providing oversight to build this capacity:

"The first parts we did together, it needed a lot of hand holding and oversight. Because we were really hiring a bunch of loggers. But now they understand the differences and know how to do it better. So that's been really great." (Community Forest manager)

4.1.2 Relationships, trust and community support

Strong relationships with government agencies, stakeholder organizations and local and Indigenous communities are critical not only for building trust and maintaining a social license to operate, but also for developing coordinated approaches to wildfire management. Community Forest managers emphasized the importance of *"getting to know a key contact"* in the relevant Fire Zone or Centre who can assist with funding applications and fuel management planning and are important contacts in the case of a wildfire event:

"Ensure that you talk to the BC Wildfire Service folks who overlay your Community Forest – whether it's the fuel mitigation folks, fuel management folks, the initial attack folks – make sure you have a working relationship with those people. That's going to serve you well in the future." (Community Forest manager)

These working relationships with BC Wildfire Service, as well as with the First Nations Emergency Services Society, are particularly important for success of FireSmart programs and conducting prescribed burns (including post-harvest broadcast burns); something many Community Forests would like to do more of (see Section 5.2). Having pre-existing relationships with the Fire Zone prior to wildfire seasons is also critical for enabling rapid and coordinated wildfire response:

"Because of a pre-existing relationship that I had with the zone guy, our fire zone…. I was one of the first phone calls that he made when the fire started, because he knew that I'd be hearing about it, people would be asking me. And I made some suggestions around how access might be provided because I knew that piece of ground and they hadn't had a chance to look at all that."
(Harrop-Procter Community Forest manager)

Managers also spoke of the need to work closely with FLNRORD when planning and implementing fuels treatments, for example to ensure compliance with forest management obligations or to access unallocated Crown Lands to conduct landscape level treatments. Similarly, many Community Forests are working closely with local landowners, forest and range tenure holders and stakeholder groups to integrate approaches to wildfire management across multiple tenures. For Powell River Community Forest this means reaching out to neighbouring woodlots and First Nations to collaborate on wildfire response. As their manager said:

"It doesn't matter where the fire starts it's going to impact each other right? So we're trying to pool our resources to be able to work together. And where there's a fire doesn't matter, I don't care if it's on my neighbor's property I'm going to go help put it out."

Nakusp Area Community Forest has also been working closely with the forest industry to implement the CWPP and coordinate fuels treatments across the landscape:

"To be successful we have to bring all the stakeholders together right? We have been working closely with the licensees and BC Timber Sales as potential treatment units within their tenure areas. So we're saying: 'Okay where are you guys going to cut? And, let's see what we can do here and how we can integrate their plans into the CWPP." (Nakusp and Area Community Forest manager)

Due to their local presence and relationships with external agencies, Community Forests are well placed to play a central role in community organizing during wildfire events. Likely-Xatsull Community Forest shared their story of how they provided the infrastructure, including phone lines, generators, and fire-fighting equipment, to act as community organisers during the 2017 wildfire season:

"It was nerve-wracking trying to make sure people were calm and getting the right information…because there was a glitch in the Cariboo Regional District robocall telling them they were being evacuated…And I said, 'you're not evacuated, go back home, stay in touch with us.'…We also have a small fire-fighting set-up and for people to protect their homes during [the 2017 fires] we lent out fire hoses."

Some managers spoke of the importance of having local 'champions' and leadership, such as active local Fire Chiefs or Mayors, who support new initiatives and work closely with the Community Forest. Community Forest managers themselves also play a key role in facilitating stakeholder and community engagement to build local trust in and support for Community Forest management (including wildfire management). This is particularly the case for managers who are longstanding members of their local community. In these cases, 'engagement' often takes the form of informal, day to day interactions with local residents, for example on local ferries (Chinook Community Forest) or in the local supermarket:

"When I'm at [supermarket chain] Nesters buying my lettuce people can come up to me as they will and do, and say hey [manager name] what the heck's going on?... I have lived here a long time I know everybody and their dog and so I hope that I am seen as somebody credible, approachable, knowledgeable and that they feel comfortable to come and talk to me." (Community Forest manager)

These local relationships are important for raising awareness of, and at times overcoming initial opposition to, fuels treatments within the WUI. As well as impromptu consultation sessions at their local supermarket, the Community Forest manager quoted above also shared an experience of educating fellow mountain bike riders – a major recreational and Community Forest stakeholder group in Whistler – about fuels treatments, and the change in attitudes this resulted in:

"So, we're riding along this trail along the river and at one point it kind of curves up and you can see where all of the wildfire thinning was done that the Community Forest had just finished. And I caught up with my friends they were like 'what the hell?! This logging looks terrible what, this is awful awful!' And I said well actually that was the wildfire fuel thinning project that we just completed. "Oh! Oh that's great!" It's exactly the same thing but because it's wildfire people have a totally different lens on it."
(Community Forest manager)

This reflects the increasing levels of community support for fuels treatments observed by many Community Forest managers in recent years: *"The public wants to minimize the fire hazard, so most of the public is more open to harvesting in rural areas in order to protect their homes and infrastructure"* (Community Forest manager). Particularly in areas badly affected by the 2017 and 2018 wildfires, many communities are now advocating for fuels treatments around their properties and in the interface:

"People are asking for us to go in there and do some work. They're afraid for their own properties. After the 2017 fires everybody looked very nervously up on that hill, because it was pretty bad...And literally our phone was ringing, people were saying 'When are you going to start? When can you start? Couldn't you start soon?' So people were actually asking us. And so we wanted to strike while it was literally still fresh in peoples' minds about the fires from 2017 and we knew that there would be a lot more public acceptance for us being in their backyard right away." (Community Forest manager)

4.2 Challenges in proactive wildfire management

4.2.1 Financial and resource capacity

While strong financial and resource capacity and community support are critical to success, Community Forest managers highlighted ongoing challenges in accessing funding or building community support. Several Community Forest managers spoke of frustrations with provincial funding programs relating to timing, lack of appropriate scope and the administrative burden of accessing the funding. Even Community Forests that do successfully engage with funding programs question the reactive nature of the funding:

"*I mean 2010 was a bad year too, and in 2011 everyone was up in arms about wildfire risk reduction and it died off, so we'll see what happens in the next few years after 2017. But with all this funding that's out there, I find it a little harder to believe this is just going to die off, but you never know.*" (Community Forest manager)

Other Community Forests struggle with the scope of provincial funding programs, including the jurisdictions addressed by SWPI and CRIP:

"*We completed a CWPP back in 2013…through the SWPI program…but it was very small in scope…We weren't allowed to address anything outside the IR [Indian Reserve] lands. So we had these little postage stamps…and we were going 'this is crazy, this makes no sense at all, the wildfire is going to come from outside these square blocks, why are we doing this?'*" (Eskétemc Community Forest manager)

For some Community Forests these frustrations were attributed to SWPI's *"one-size-fits-all mentality".* One Community Forest manager claimed: *"we had one very bad experience and we will not be accessing that under its present form ever again."*

In 2019 SWPI transitioned to CRIP to provide additional money for FireSmart and private property. However, some Community Forest managers still don't think there is enough funding available, especially for rural properties:

"*If people aren't willing to take the initiative to FireSmart their own properties, there really isn't a whole lot of funding for it…If people are actually looking at bunching fibre, they're pretty expansive properties out there in a rural setting, so you have a lot of ground…It's pretty extensive and it's quite expensive, so the amount that they would receive is fairly insignificant.*" (Community Forest manager)

With the introduction of FESBC in 2017 additional funding was made available for wildfire management on Crown land. Although widely accessed, several Community Forest managers spoke to challenges with the specific requirements of FESBC not being realistic from an operational perspective:

"*[The funders] were very, very adamant that there needed to be a very specific hard-line separation between legally required Community Forest obligations and hazard abatement. And I get that too, absolutely, for multiple reasons. But there also needs to be an understanding that, operationally, there's very little separation there. [The contractor is] not going to load all his equipment up, take it off site, and then when he gets approval, load all his equipment back up and bring it back. That's not realistic – it's operationally not feasible.*" (Burns Lake Community Forest manager)

Case study 2: Creston Community Forest fuels treatments and community engagement

Over the past two years Creston Community Forest has been conducting fuels treatments in two high risk interface areas within their tenure, in the Canyon-Lister area (2018-2019) and at Goat Mountain (commenced winter 2020). The Canyon-Lister site was identified as being a high risk due to proximity to private properties. Due to this public accessibility, the presence of recreation trails, and the planned treatments to open up the stand, the Community Forest manager also saw potential to utilize this location a forest education or 'demonstration' site to showcase fuels treatments and forest management.

However, the Community Forest had to first overcome two key challenges: gaining community support and finding a contractor who could conduct this specialized work. After initially sending out a letter to local residents and hearing concerns about 'industrial logging' or clearcuts, the manager spent time meeting with residents and recreationists to explain their planned approach, including maintaining recreation trails, and explored different options of lower impact machinery. After failing to find a horse logger in the Kootenays they eventually hired a contractor from Nelson with a small forwarder processer. The manager spent time in the field with this contractor to explain their requirements of low impact selecting harvesting and the importance of removing understory fuels. Despite the initial community opposition, the manager explained that *"once we were finished, everybody in the whole area was like, 'we're on board!'. Even our biggest critic…they like the fact that we did exactly what we said we'd do. I had a vision...but how do you convey that to the public when sometimes they don't have that forestry background?...How do you get that trust? Well, you do something like [this project] I guess. So now we have our model".*

Since then, Creston Community Forest has received three-year funding from FESBC to conduct fuels treatments at Goat Mountain, which is also of high concern regarding the risk of wildfires. In winter 2020 they treated approximately 52 hectares across multiple sites through a combination of selective harvesting – including to address low to moderate levels of Douglas-fir beetle infestation – and, in fuel treatment blocks, thinning of live understory stems to reduce densities of smaller (<12.5 cm DBH) conifer stems to 100 stems per hectare, pruning, followed by hand-piling of debris for subsequent mulching on site. Feedback from local residents so far has been positive, with residents appreciating the "open forest" appearance.

The strict requirements around free-to-grow has also posed challenges for Community Forests to achieve mitigation objectives:

"*We applied to FESBC funding to…prune those maples. But because those blocks weren't free-growing, they just said 'no we can't because we can't contribute to you achieving your free-to-grow, we can't fund you to achieve your obligations.' But we also planted to higher densities, like we plant to 1400 stems per hectare just to make sure that if we retain the deciduous, we've always got an extra tree to pick for a free-growing tree. So even if we didn't brush the maple coppices, we'd still achieve free-growing. But because we haven't already achieved free growing, they won't fund us…They would pay us to go and kill all the alder along our river and convert it to coniferous, they'd pay us to go and reduce our biodiversity and create a more fire-prone stand, but they won't pay us to create a fire resistant stand.*"
(Alberni Valley Community Forest manager)

Most Community Forests, even those with extensive experience successfully accessing provincial funding, spoke to the administrative burden of the application process:

"*I can say that we've been successful in all the programs and we've done them year over year. And I can also say in the same breath that it's complicated…And you know we'll end getting delayed in our payments by months because we're point one hectare off in our reporting on an area on a database. So it's frustrating. Right? And I get why other communities don't participate in the program. Because if you're not aware of that kind of stuff, you'd go nuts.*" (Logan Lake Community Forest management)

This administrative burden is daunting for Community Forests that have less experience navigating provincial funding programs. The manager of one Community Forest, which was successful receiving SWPI funding, said: "*In 2017 when we first cracked open the SWPI file, it was kind of a little bit overwhelming trying to navigate it, especially in the context of doing your other job".* One Community Forest manager who had not yet accessed any provincial funding said they would be more likely to engage with funding if:

"[We] had a little more time to dedicate to [it]. I mean a lot of this stuff in these communities you need a champion. You need somebody that's going to take it on and do it and we all have jobs already. We don't have a position in the Community Forest that just pursues grants. At this time in our operations none of us really have the time to sit down and start pursuing other funding grants."
(Likely Xat'sull Community Forest manager)

A lack of financial capacity, including barriers to accessing funding, is of concern to Community Forests because of the high cost of fuel treatments, especially for those that are further from sawmills or waste processing facilities. Most Community Forests undertaking fuel treatments are especially frustrated with the lack of a market for logging slash and fine fuels, with financial constraints associated with long-distance trucking expenses for lower value forest products. One Community Forest manager noted that the huge cost of removing debris on the coast is "*killing us financially*." These financial challenges affect the profits of Community Forests, some of which could be used for continued wildfire mitigation:

"*It's not going to be financially feasible basically because we're going to be taking out the small trees not the big ones and we're going to be horse logging it because the community doesn't want machinery. All these restrictions make it really hard to make money*" (Community Forest manager)

Recent revisions to the stumpage process did not help alleviate some of this financial strain:

"*The way it works is you do your logging, we do a waste survey. Pay your waste. Come back with the hogging guy, he does his operation. Grinds it up into hog. And we pay stumpage again on the same material to government. Twice… I thought with the changes they were going to make it better, but they've now actually made it worse. So now we do the same process but now we pay triple*"
(Powell River Community Forest manager)

Ultimately, the lack of a market for these materials means that many Community Forests are burning slash piles rather than utilizing the waste in a more sustainable manner:

"*I have piles, some big piles of logging debris sitting on that hill above [town] that I'm going to have to burn because it's my responsibility, right? I have that hazard mitigation thing. And I don't want to burn them. I want to utilize them. I want to do anything but burn them. I want to chip them, I'd do whatever I can, but we don't have a market for the stuff.*" (Community Forest manager)

For other Community Forests, the *Open Burning Smoke Control Regulation* has meant they have been unable to pile burn in treated blocks that are located close to private residences. Due to these restrictions, Creston Community Forest is now considering bringing in a track mulcher to mulch on site.

The lack of financial viability of fuels treatments arises not only from a lack of market for slash materials but also from the high cost of specialized contractors and equipment. One Community Forest manager in the interior noted they had contractors from as far away as Vancouver Island submit bids to bring smaller equipment that could navigate steep slopes, which they worried may not be economically viable. One Community Forest considered investing in their own chippers to deal with slash and fine fuels, but the costs of equipment and associated changes to logging infrastructure (e.g. roads) were prohibitively high. Some Community Forest managers mentioned trying to build capacity within their own communities, but noted it will be challenging because "*nobody around here has the equipment that's needed…you know like the small pieces of equipment that's needed to get in there and take out some of these, to do the thinning*" (Community Forest manager). These financial challenges are significant, especially when trying to scale-up fuels treatments:

"*I think there needs to be a more strategic balance to make sure that we can treat a significant area and not just treat a small amount of area to a real high intensity. The cost per hectare is just unachievable across a large scale*." (Community Forest manager)

4.2.2 Lack of expertise

Lack of relevant expertise is also viewed as a major barrier to undertaking proactive wildfire management. Many Community Forests with smaller financial portfolios or further from population centres struggle to access the expertise needed to develop plans and prescriptions, pursue funding or build the relationships with provincial agencies necessary for successful risk reduction. While several consultants were repeatedly highlighted as key experts in fire science, planning, and management, some communities simply do not have the capacity to access that expertise. This lack of expertise within communities is especially challenging when the onus is on communities to address wildfire risk:

"*We don't have staff to do [any more work]. And we don't have the expertise. If it's paying bills we can pay bills, but we often don't know even what we're looking at. Because we're not really loggers we need to have that consultant acting on our behalf that can read those invoices…So we don't really have the staffing, we don't really have the expertise, and we don't really have the money always to pay somebody to do that for us.*" (Community Forest manager)

Across the province there is a perceived lack of expertise in fire science. One Community Forest manager also highlighted the fact that much of the current wildfire research focusses on boreal forests, or the chaparral landscape in the western United States, with very little data available for the ecosystems, landscapes and fuel types of southern BC. This affects the ability of forest professionals to fully understand the relationships between forestry and wildfire:

"*We've got HUGE gaps: the basic fire science, the modelling, the calibration and all that stuff. [The province is] weak as a jurisdiction…we talk about our forestry being so advanced and science-based and all that. On the fire side, I think it's pretty weak*" (Harrop-Procter Community Forest manager)

Wildfire is a complex topic and without the right expertise driving proactive approaches to mitigation, effectiveness of funding and treatments may be at risk:

"*Not everybody can just up and pick up wildfire behavior. One of the biggest things that I've seen is everybody seems to want to be involved in it, but I've done an extensive amount of research to get to the point where we can understand the concepts of wildfire behavior and how to manipulate it…And it's one of those things that you need to be engaged in it and you need to truly want to understand it, because it's complicated. Yes there's some general processes that people go by, it's like this is the tonnage we want to achieve, this is how we want to manipulate the stand, and there's lots of silviculturalists out there that could tell you how to manipulate a stand to make it so wildfire wouldn't spread. But the biggest thing is making sure that you have a competent professional working on the process so that you make the right decisions because that funding isn't going to last forever and you want to make the most of it, so employ the right people.*" (Community Forest manager)

This lack of expertise is a particular challenge for implementing prescribed fire. Several Community Forest managers commented that while they would like to incorporate more prescribed fire into their prescriptions, it was challenging to find the right person to *"light the match"*. This lack of expertise seriously limits the likelihood that prescribed fire can be part of the wildfire management toolbox:

"*The problem is there isn't anybody that's willing, and the expertise is not around enough to be able to implement it…There are a few individuals that are very experienced in developing the plans, but there's very few who are willing to light the match. And be able to monitor and adjust based on fire behavior that they're seeing. That expertise I think we've lost, it's not there. And I know from having conversations here and there, that there's hesitation from certain organizations to take that on.*"
(Burns Lake Community Forest manager)

Community Forest managers recognize that this lack of prescribed fire expertise is in part due to a provincial focus on addressing other environmental issues over recent decades: "*But we've lost the ability to burn, or lost the techniques of burning because we haven't done it for so long and plus we've been focussed on pine beetle for fifteen or twenty years in the interior.*" (Tumbler Ridge Community Forest manager).

4.2.3 Community expectations

Maintaining trust and social license are central to successful wildfire management, especially in a Community Forest context when communities have a stronger interest in the management of the forest. Because of this interest, many Community Forests experience pushback from some community members when trying to implement certain approaches: "*There's some landowners that don't want to see any activity by their private property. Fair enough, but when your house does burn down, don't come knocking on our door saying "why didn't you do anything?*" (Chinook Community Forest manager)

Community acceptance widely varies depending on the specific approach and the history of forestry and fire in the area. One Community Forest Manager spoke of the "rainforest" mentality on the coast that means the public generally perceives a lower wildfire risk – and may therefore be less amenable to proactive wildfire management. The manager of Eskétemc Community Forest, for example, noted that "*prescribed burning is a social issue*," highlighting how challenging it is to do prescribing burning without community support. Several Community Forest managers spoke of nervousness towards undertaking proactive approaches because doing so may jeopardise their social license:

"*My biggest fear would be that we finally get to log this block which we think is awesome and creating a fuel break and stuff and the logging truck rolls down the valley and gets blockaded. Because that's what happened the last time a logging truck came here.*" (Community Forest manager)

This social license can be particularly precarious since so many Community Forests employ local community members as contractors. Several managers spoke of pushback from local contractors during the wildfire season when government guidelines (including weather stations and shutdown notices) did not align with locally specific perceptions of wildfire risk:

"This spring I was monitoring the weather and I said "no, we've got to shut down." Nobody else had shut down, but I said "the fire risk around here is way too high, we're shutting down." And then, because the government station says you can keep working, I get a lot of pushback from my contractors, because they need to work to make money right?" (Alberni Valley Community Forest manager)

FireSmart was an approach that many community members were hesitant to engage with due to a lack of awareness and understanding of the program guidelines and process:

"We have 100 assessments that we said we were going to do, and we have 12 people signed up. And a lot of inhibition because people think "oh well my house might [not be clean]," well, we don't go inside. Or, "my yard is messy, I don't want you to come." "Oh well it involves paperwork," we say "no, we will do all the paperwork." (Community Forest manager)

The Community Forest above was eventually successful in implementing their FireSmart program and completing the home assessments, but they were not the only Community Forest to experience push back from the public. One Community Forest manager spoke of community concerns over data privacy which limited engagement in the FireSmart program:

"*I know that in the first year initially there was some resistance to people having home assessments because they didn't want their information going to government. They wanted the anonymity…You know is this going to affect insurance or is this going to affect tax base? These are real concerns.*"
(Nakusp and Area Community Forest manager)

4.2.4 Existing planning frameworks

Developing and undertaking proactive wildfire management is complicated by existing planning frameworks, including provincial legislation and policies such as the *Forest and Range Practices Act* and Land-Use Plans. Many Community Forests struggle to balance wildfire management within these frameworks, specifically regarding static reserves and visual areas. Several Community Forest managers questioned why, especially when reducing wildfire risk is the primary objective, these frameworks take precedence; particularly when values they were intended to protect may no longer exist:

"*You can apply that to ecosystem networks and biodiversity objectives that were established and set up in these static reserves and old-growth management areas –– areas of forest that were left to natural processes. That forest doesn't look anything like it did 30 years ago when the land-based decisions were being made. Are the values that the area was intended to provide, are they being provided in the current state of a dead pine forest?*" (Community Forest manager)

Navigating the legal planning frameworks becomes especially challenging after wildfire has affected an area: "*What do you do with visuals in the blackened landscape? The interesting thing is that there's no legislation exemptions to deal with wildfire. It's almost surprising that we never thought about that.*" (Community Forest manager).

There is also concern among Community Forests that legal objectives to replant specific species to certain densities is limiting their ability to effectively manage wildfire risk. Several Community Forest managers noted that while they would have liked to retain more deciduous trees or not replant to the densities defined for stocking standards for sustained timber yield, they were unable to because of the legal objectives. As discussed earlier, Alberni Valley Community Forest was unable to get FESBC funding to retain deciduous trees - even though they had planted to higher densities with other species - because it was considered part of their legal obligation of free-to-grow. Other Community Forests have experienced similar frustrations with the replanting obligations:

"*I've always believed that if you are treating an area, that you shouldn't be planting it. You should be maintaining it. Like you're looking at it, looking at the ecology of the site. What was it like a hundred years ago? You had wildfires going through it, cleaning up the understory and all the smaller trees. So why do you want to plant and bring up the density? And I had a good chat with FES the other week, they say you know what, you're reducing the timber harvest land base by doing that. You should be planting.*" (Creston Community Forest manager)

This is challenging for Community Forest managers because they are getting guidance from fire experts that are at odds with legal requirements:

"*We went to a select harvest model, but there's complexities with that because of the silviculture rules. You have to reforest every hectare you harvest…And I actually planted one of the blocks in a wide spacing and I've been talking to Blackwell and other fire experts and they're saying don't plant at all…just let the aspen come up.*" (Tumbler Ridge Community Forest manager)

These challenges are presented not only by planning frameworks themselves, but also by the high level of bureaucracy in planning processes. Many managers spoke of how long it could take to get approval for certain fuel treatments, which can limit their ability to achieve their objectives:

"*The goal posts for getting the prescribed burn going…it's always another thing that they need from me. It's just one more thing one more thing one more thing, and by then the burn window's gone so, that's happened two years in a row.*" (Community Forest manager)

Community Wildfire Protection Plans can also be a barrier to Community Forests undertaking proactive mitigation. While many Community Forests do have CWPPs or similar documents in place, several managers spoke of outdated CWPPs and the challenge of committing time to developing a CWPP rather than treatments:

"*The CWPP I guess is an important document, but really you know what areas need treatment, you have local knowledge. I almost feel...the CWPP is irrelevant. You can easily identify areas that need treatment on a map, you identify your important areas like your hospital, your airports and all that stuff. The powerlines. But to put together a CWPP, I think it's -I just see it as a huge waste of time, when you should be out there within half a year to a year. Because by the time you're out there, you know three or four years have elapsed*" (Creston Community Forest manager)

4.3 Negotiating trade-offs: making wildfire management a priority

As managers of multi-value landscapes, Community Forests are constantly negotiating trade-offs between legal obligations and diverse community priorities:

"*We have certain legal requirements as forest professionals and so under the Forest and Range Practices Act, we manage for all resource values…And they've got eleven of them… a nice little list to check off. But when you're managing a community forest, it's WAY beyond eleven. Because there's a lot of social forestry that happens here*" (Logan Lake Community Forest management)

With so many values to consider, wildfire risk may not always be the priority:

"*[The challenges are] very diverse, and we're challenged with mountain pine beetle infestations, we're challenged with significant wildfire risk, we're challenged with poor growing regenerating sites, with significant mistletoe. There's a lot to consider with making management decisions in that Community Forest*." (Community Forest manager)

Other key issues include climate change, forest health, and the *"volatility of the forest industry"* (Community Forest manager). While some Community Forest managers are now prioritizing wildfire as an overarching management objective (see Section 5.1), many spoke of these interrelated challenges that are at the forefront of their decision-making:

"*Climate change is a big one: what our forests are going to look like, even ten years from now. Because we're already starting to see changes with mortality…You know there are ten-, fifteen-, twenty-year-old trees that are [dying of drought]...So I know that climate change definitely has an impact and…that's a real concern.*" (Creston Community Forest manager)

In addition to negotiating these external challenges, Community Forest managers recognize the internal trade-offs between forest management and social license – in many cases prioritizing community relationships over additional profit:

"*Last year we were potentially going to log above this farm, take out some spruce that was coming down. They didn't want us crossing [the farm] so we're going to drop that section of the block and do a big riparian zone and another block…Lost a couple of hectares of wood but keep that trust. I'm not about logging every last stick - it's keeping people happy. They're our stakeholders, it's not some guy in New York.*" (Kaslo and District Community Forest manager)

Trade-offs are apparent to Community Forests undertaking fuel treatments, particularly because of the unclear or inflexible regulations (such as Land and Resource Management Plans) that do not appear to effectively address wildfire risk. Community Forests often find themselves pushing back against the existing guidance to achieve their risk mitigation objectives, especially in light of other landscape values:

"*You know one of the big challenges is the habitat folks need it to look like this (raises hand with palm up) but the wildfire people need it to look like that (raises other hand with palm up), and trying to figure out how to do forestry in between all of that is a bit challenging.*" (Community Forest manager)

Another set of guidance that Community Forests find difficult to achieve is surface fuel load objectives, especially given other landscape values. While the tonnes per hectare fuel load prescriptions can provide useful guidance, Community Forest managers worry that *"in certain timber types, they're almost unachievable*." One Community Forest manager reflected on the existing guidelines of five tonnes per hectare in Douglas-fir fuel types close to communities:

"*We've hand picked areas and raked them and…it's quite the task to maintain that when a windstorm or freezing rain event can change the entire fuel load on the ground in an instant. I mean you do your best, trying to achieve that five tonnes per hectare, but in reality, for me it's to the extent practicable. If you're spending $8000 a hectare to try and bring it down to five tonnes per hectare and you still can't achieve it, would you rather treat more [area] or would you rather treat less to a certain level? I'm assuming that the community members would rather see more area treated.*"

In some cases, through their role as innovators in wildfire risk mitigation, Community Forests are often in a position where they feel like they must push back against these standards and work to develop an approach that is more appropriate for the fuel type and other values that exist:

"*I understand rate of spread is really important, but you can't tell me that that the partial harvest we did isn't better than the 60 tonnes of fuel loading that's behind it… we looked at [the partial harvest with BC Wildfire Service] and before I told them what the number was, some of them said, "well, this looks way too clean." And I said, "I agree with you, we're not meeting our coarse woody debris objectives, we're not leaving anything for natural recycling, this is not forest management." And then after the fact I said, "by the way, this is seven tonnes per hectare, so by definition it doesn't meet your objectives." And I think what has happened as a result of that is they've gone back and had a little bit of a closer look as to where those numbers came from…And I think we've kind of found a middle ground.*"

As Forest Professionals, Community Forest managers recognize the importance of adhering to legal obligations. At the same time, they note how challenging it is to negotiate trade-offs between those obligations and wildfire risk:

"*All those values that were on the landscape and any of the values that come along, they're constantly being tested and re-tested in light of fire hazard and fire mitigation treatments and truly what their purpose was.*" (Community Forest manager)

Bringing wildfire risk to the forefront can be challenging, but Community Forest managers recognize that there are ways to achieve wildfire risk reduction while still considering and supporting other landscape values:

"*There's so many different objectives on the land base that push one another, maybe it's time to create a hierarchy of what we're trying to do in certain areas. [For] a primary fuel break, is the primary objective going to be wildlife habitat? No. Are there little things we can do to facilitate wildlife habitat and promote it? Sure. But to really push [the habitat] objective over [wildfire] becomes challenging when you're located in an area that's already laid out for a primary fuel break.*" (Community Forest manager)

4.4 Proactive wildfire management versus wildfire recovery

For Community Forests that have been affected by wildfire within their tenure, the biggest trade-off is that recovery often takes precedence over prevention and preparedness. As of May 2020, at least five managers interviewed represented Community Forests that had experienced wildfire in their tenure in 2017 or 2018. Recovering from wildfire can put proactive wildfire management efforts on hold because of the timelines around salvage and recovery operations:

"*I actually had FESBC funding last year and I just deferred. I couldn't - with all the other nonsense that was going on trying to salvage wood from [the portion of our Community Forest impacted by fire in 2017]. I simply didn't have the time to pursue it.*" (Community Forest manager)

Like the rest of the province, Community Forests are learning how best to approach wildfire recovery. After the 2017 and 2018 wildfire seasons BCCFA compiled guidance for Community Forests recovering from wildfire[10] and organized a conference to share lessons learned in recovery and preparedness[11]. Nevertheless, even for those Community Forests not directly affected by wildfire, recent wildfire seasons have disrupted many planning and treatment processes:

"*We put our funding proposal in, and, congratulations, you're the first person in the region to get a FES grant. Excellent. That's March 2017 – it was for a Strategic Wildfire Mitigation Plan. So…we start to put the plan together and get going, and 2017 wildfire season hits, and we go 'wait a minute.' We hit pause. We said 'let's see how this plays out, this is a pretty significant fire year, I know other people who have been doing fire mitigation treatments. Maybe we'll find out what works and what doesn't through other peoples' pain and loss and successes.' So we hit pause, we waited for the dust to settle… and then picked it up again that winter and started in on it...[Then we were] ready to start in on some detailed prescriptions and data collection…2018 fire season hits. So, we hit pause again.*" (Community Forest manager)

[10] https://bccfa.ca/wp-content/uploads/2020/03/WildfireRecoveryForCFAs_2020.pdf

[11] https://bccfa.ca/wildfires-on-community-forests-preparedness-management-and-recovery-workshop-%EF%BB%BF/ and https://bccfa.ca/wp-content/uploads/2019/11/BCCFA_UBC-2019-Wildfire-Workshop-Report.pdf

Figure 7: Salvage operations in a Community Forest that burned in 2018.[12]

Responding to and recovering from wildfire events is challenging for all Community Forests and can hinder their ability to focus on proactive approaches. This limitation is especially critical given the area-based tenure of Community Forests and timelines associated with recovery and lag effects of wildfire. For example, in spring 2020 the Village of Kaslo sustained major damage to the Kemp Creek Community Water System due to a debris torrent directly linked to the 2010 True Blue wildfire, where avalanches are now dislodging structurally compromised snags. The manager of the Kaslo and District Community Forest highlighted this as just one example of the long-term effects of wildfire that can continue to pose challenges for forest managers.

Many Community Forests that had experienced wildfire in their tenure spoke of how their capacity was even more limited by these wildfire events. This is of key concern if wildfire seasons continue to have widespread detrimental impacts across the province. At the same time, recovering from wildfire events has also helped Community Forest managers build relationships with response and recovery agencies (including funding and provincial) and provide a new perspective on future visions for proactive wildfire management.

[12] Photo by Amanda Follett Hosgood July 2020. https://thetyee.ca/News/2020/07/27/First-Nation-Built-Forestry-Future-From-Ashes-Past/

5. Visioning future solutions

5.1 Refocusing management with a 'fire lens'

Wildfire management is increasingly becoming a priority and guiding objective for Community Forest management: *"Wildfire, that's our number one concern now. As a community forest we've kind of shifted into that being what we're managing for"* (McLeod Lake Mackenzie Community Forest board member)

Wildfire became a key concern and priority for management following the 2017 and 2018 wildfire seasons. However, there are numerous challenges associated with this shift in focus. Some managers reflected on the lack of consideration of wildfire-related objectives or targets in established management plans and mandates, and the need to revise these in light of recent wildfire seasons and re-evaluations of risk:

"You get pigeon-holed because…we have our mission and our vision and objectives and then we have our key performance indicators and it's all embedded within our management plan… And then of course as the 2017 fire was going on I'm looking at all this stuff and I'm going 'okay, we knew that we had to manage for this [wildfire] but nowhere in here did we actually specifically note that that is a key performance indicator or that is a management prerogative.' So I think we came to the realization very quickly that all our activities are essentially trying to manage for this big ugly thing that's brewing in the background. But we weren't very explicit even in our documentation early on at saying 'this is one of those pieces that needs to be there.' So we're just working on our new management plan and it's actually very explicitly in there." (Burns Lake Community Forest manager)

Managers spoke of the need to *"take a fire lens"* (Logan Lake Community Forest management) to forest management (while still explicitly balancing assessments of fire risk against other values), and of how fire *"should be the driving force"* (Creston Community Forest manager) underpinning contemporary approaches to landscape level planning. This reflects relatively recent shifts in understanding of 'fire management' in BC, from a primary focus on wildfire response (particularly suppression) to encompassing a broader range of activities that are embedded within ongoing processes and practices of forest management:

"I would hope that fire management could become a year-round activity. I think that we need to not just think about managing fire between May 1st and September 30th. We need to talk about and we need to manage fire outside of those [months] too, whether it's through prescribed burns or it's through planning or whether it's through hazard mitigation and burning of logging debris. Or the treatment of fuel-loading that happens with harvesting." (Community Forest manager)

Managers highlighted the need to have greater flexibility when it comes to wildfire management, in particular fuels treatments, which they saw as currently being constrained by the existing forest management policy and planning context:

"Our proposed [fuel treatment] area in Arrow Creek there's an OGMA…Right away, it's: 'you shouldn't be going in there'...I think the government needs to stop thinking that way. They've just got to ease up and go okay, this is for fuels management. It's not for logging…yes we are taking out some trees [but] we're going to be leaving all the old trees…and then removing fuels." (Creston Community Forest manager)

The manager of Tumbler Ridge Community Forest put this simply in saying that wildfire *"should go into a different bucket"* in terms of planning and approvals, particularly when considering the *"low scale"* of fuels treatments in comparison with timber harvesting. Others expressed concern over the lack of certainty as to how to effectively balance forestry and wildfire risk reduction objectives while also avoiding exposure to liability or compliance issues – especially in the context of professional reliance:

"Sometimes as a professional or prescribing forester, you feel like you're out there in the wind a little bit, a little bit exposed from a liability and compliance perspective. But you have to remember that forestry is an art… it's not black and white, there are some gray areas. You have to be able to rationalize why, what, when and how. And just be comfortable where you land. That comfort level for professionals ranges, but that's how it works. So when you're protecting a community, we always tend to think we're doing the right thing." (Community Forest manager)

In this context, a willingness on the part of forest managers to innovate and take risks and an explicit inclusion of wildfire as a management value or objective within the overarching forest governance framework is needed to more effectively and proactively manage wildfire risk in forest tenures.

5.2 Managing (with) fire for landscape resilience

A greater recognition of the role of fire in shaping forest dynamics and ecological processes has paralleled this increase in focus on wildfire management. Many managers acknowledged the impacts of 20th century focus on fire suppression:

"You know those are very much fire ecosystems. And so fire naturally occurs in the area but what have we done? We've put fires out for a hundred years, or better. And so we as foresters are looking at the situation we're saying look, these are not natural ecosystems" (Logan Lake Community Forest manager)

Managers spoke of their increasing understanding of fire ecology and the importance of fire in shaping the forests that they are now tasked to manage. Others – particularly those managing First Nations led Community Forests – also highlighted the cultural significance of fire to many Indigenous peoples in BC:

"It was just a matter of just working with the Eskétemc and finding out from them what was important to them…What did they want to do with the Community Forest? What did the Community Forest mean to them? And I was quickly educated in the importance of fire, the importance of fire in the culture in the community. And why these forests need fire." (Eskétemc Community Forest manager)

As such, restoring fire to the land as both an ecological and cultural process is a priority for many Community Forests and their communities. The majority of managers expressed a desire to (re)introduce prescribed burning within their Community Forest to achieve multiple objectives, including ecological restoration, cultural revitalization and hazard reduction. Addressing issues of liability for conducting prescribed burns and building greater capacity and expertise within BC Wildfire Service, forestry professionals and communities to conduct burns are seen as priorities for achieving this goal.

Managers also highlighted the goal of managing for ecosystem resilience, and the need to promote healthy, diverse forests through both forestry and wildfire management practices. One Community Forest manager discussed the risks of viewing wildfire management too narrowly, instead advocating for a more holistic approach to treat the 'disease' rather than the 'symptoms' (wildfire):

"The disease is [lack of] ecosystem resilience and we need to make sure we manage that. If we manage that then fire comes along behind. Pest incidents comes along with that…we need to ensure that we look at the ecosystem as a whole and that resilience within that ecosystem gets managed. Not fire per se. Fire is part of that resilience package – if we keep looking [just] at fire management we'll continue to have difficulty. If we look at ecosystem resilience, I think that we'll find it easier to manage all those things that put forests at risk, not just fire."

This reflects the recent (2019) promotion, by the BC Community Forestry Association, of ecosystem resilience as a key purpose of community forestry, as well as multiple managers' emphases on adaptively managing in the face of observed and predicted climate change impacts. In practice, managers discussed the need to create structural and compositional mosaics on the landscape; managing for biodiversity, including promotion of deciduous species; the potential of assisted migration of species such as larch from outside of their natural range; and replicating ecosystem-specific natural disturbance regimes, for example through retention harvesting in small (<5 ha) plots on the coast (Cheakamus Community Forest) to replicate windfall. This requires an improved understanding of the historical role of fire and other disturbance agents in shaping BC's diverse forest ecosystems, and the ability and willingness of forest managers to trial alternative silvicultural approaches (both in terms of species selection and harvesting approaches) that promote greater landscape heterogeneity.

5.3 Scaling up collaboration

When managers spoke about their vision for wildfire management into the future, a common theme that arose was the need to scale up in terms of area treated and to start thinking and planning at a landscape level. Goals include constructing landscape level fuel breaks; conducting prescribed burns across larger areas; proactively managing watersheds to reduce fuels and reduce the risk of wildfire impacting watershed values; and conducting landscape level modelling to understand wildfire risk and prioritize treatments. This often requires broadening the focus of community wildfire protection beyond the current 2 km designated WUI boundary:

"Doing all these fuel management projects around the towns are great. But it represents, maybe, 1% of the forests that we need to deal with. So, we got a huge fire risk outside the communities. Obviously, we need to focus on protecting communities and the infrastructure, but we need to look at harvesting as a whole." (Community Forest manager)

Managers do not underestimate the challenges – in particular financial and resource barriers – to conducting fuels treatments across the *"thousands upon thousands upon thousands of hectares that are just waiting to get lit up"* (Tumbler Ridge Community Forest manager). However, increasing collaboration between communities, tenure holders and government agencies is seen as a key mechanism to scale up wildfire management. Numerous managers expressed a desire to see greater coordination between government agencies regarding wildfire management, including for response:

"We have to work on better getting along with each other, because if one agency is doing something and another agency is doing something [that conflicts] and there's a fire, that's not going to work in the end. So that's one of the key things. I'd like to see more harmony." (Community Forest manager)

Other Community Forests are playing a leading role in both funding and facilitating these new collaborations, which include:

- Community Forests in the Kootenays working closely with the Regional District Central Kootenays' Wildfire Mitigation Supervisor to convene a multi-stakeholder committee and work together on implementing the region's CWPP;
- Westbank First Nation Community Forest's planned process of bringing together Westbank First Nation and Okanagan Nation Alliance members, including Elders, and other stakeholders such as ranchers, trappers and local municipalities to form a planning group to identify key values on the land base and prioritize approaches for wildfire risk reduction; and
- McLeod Lake McKenzie Community Forest spearheading the establishment of a multi-stakeholder wildfire advisory committee that is chaired by the Community Forest manager (see Case study 3).

Case study 3: McLeod Lake Mackenzie Wildfire Advisory Committee

The McLeod Lake Mackenzie Wildfire Advisory Committee (MWAC) was formed as a result of a key recommendation of the updated (2017) District of Mackenzie Community Wildfire Protection Plan. Led by the McLeod Lake Mackenzie Community Forest and the District of Mackenzie, the MWAC brings together key representatives from the McLeod Lake Indian Band, BC Wildfire Service, BC FLNRORD, forest industries (including local mills) and other local stakeholder groups such as the trappers' association. The committee was established to provide a forum for these stakeholders and government agencies to share information, coordinate efforts and collectively direct wildfire initiatives to mitigate wildfire risk to the community. As a Community Forest board member said: "*The hope was that we have these conversations and everyone understands the risk…when it comes time to do some work, we've got all these players that know what's going on and they can help make it happen a little faster instead of starting from scratch."*

The CWPP identifies the following priorities for the proposed steering committee (now the MWAC) to explore: 1) development of large, landscape level fuel breaks; 2) public education and awareness; 3) multi-disciplinary, multi-jurisdictional fuel treatment projects/hazard abatement projects; 4) development of funding strategy; and 5) reduction of human caused fires and fire prevention.

The committee is co-chaired by the Community Forest manager and a recently hired Wildfire Project Coordinator. The Community Forest played a major role in establishing this committee and hiring this coordinator, providing the initial $150,000 to hire this position in 2019 and support community wildfire protection activities. They had initially hoped to received funding through the CRI program to hire this coordinator, but when that funding announcement was delayed (and was eventually unsuccessful) the Community Forest made the decision to set aside a budget for wildfire activities, one of which involved providing funding to the MWAC to hire a wildfire coordinator. They have since been successful in receiving $181,00 from the CRI to support fuels treatments and FireSmart.

5.4 The role of Community Forests

Managers pointed to the work being led by Community Forests as justification to expand the Community Forestry program in BC. Managers highlighted how their area-based tenures and community ties are key in promoting alternative approaches that are responsive to community needs and values:

"We continue to push for more Community Forests and larger tenures…give us a portion of that tenure and…because of our set up and process we're going to do a better job managing it because that's what Community Forestry is all about. It's not just about forestry…we'll do whatever it takes to try to benefit the community, socially, economically, whatever." (Community Forest manager)

At the same time, Community Forest tenures are seen as key in enabling innovation. The manager of Tumbler Ridge Community Forest spoke of the mandate of Community Forests to *"be innovative and show what works"*, while a Community Forest manager spoke of pushing the boundaries and piloting new approaches:

"…doing things differently like maybe under a pilot project kind of a situation. I'm always a big fan of that because you get to try new things and be innovative and sometimes you fail but it's not really a failure if it didn't work for a certain reason. And I think that some of the rules that we've all had to play by are changing. I think the Ministry is making a lot of changes to rules. And that only happens out of necessity. It happens when there's this big threat of fire and it also happens when you push the boundaries a little bit."

Another important role that Community Forestry plays in advancing engagement and innovation in wildfire management is facilitating networking and knowledge sharing between different Community Forests. Many managers spoke about the importance of reaching out to other Community Forests and of sharing information, lessons learned, key contacts (e.g. local contractors) and resources such as emergency preparedness plan templates.

The BC Community Forestry Association – in particular its annual meeting - was spoken of as important for network connecting managers and sharing new approaches. Multiple managers spoke of attending the 2018 conference in Burns Lake and hearing Slocan Integral Forestry Cooperative (SIFCo, Slocan Community Forest) present a case study of building capacity to model fire behaviour on the Community Forest land base and adjoining areas, and using this to inform the development and implementation of the *Slocan Valley Strategic Landscape Level Wildfire Protection Plan*[13]. These findings highlight the importance of promoting this "cross pollination" of ideas and recommend expanding the scope of Community Forestry and other community-owned area-based tenures to enable communities to lead wildfire management within and beyond the WUI.

[13] https://cab12c9e-2225-453e-8f64-3709cae3803a.filesusr.com/ugd/dd58fd_75cbab4a0ab14c00b633e71c005707e8.pdf

Figure 8: Community Forest managers from the Kootenay region (SiFCO, Creston, Kaslo and District, Boundary, Harrop-Procter and Nakusp and Area) meet on-site at Creston Community Forest in December 2018 to view fuels treatments and share knowledge and experiences of managing wildfire risk in their tenures

6. Conclusions: Community Forest solutions and the future of wildfire management

Many Community Forests in BC are leading proactive approaches to wildfire management in their local communities. Due to their tenure and community focus, they are often able to employ innovative approaches that are as diverse as the forest and fuel types and community values in which they operate. For many Community Forests the 2017 and 2018 record-breaking wildfire seasons acted as a catalyst to focus on enhancing wildfire prevention, preparedness and response capacities. These wildfires also often resulted in increased community awareness of wildfire risk and associated support for proactive management.

Several themes emerged as essential to enable the solutions and future innovations in Community Forests, many of which overlap with recommendations from the 2018 BC Flood and Fire Review, *Addressing the New Normal: 21st Century Disaster Management in British Columbia*[14]. All Community Forest managers spoke of how critical funding – both internal and external – is for implementing proactive wildfire management. While the current emphasis is primarily on designing and implementing effective fuels treatments, there is an emerging focus on cross-jurisdictional and collaborative planning. This requires extensive trust-building and strong relationships between Community Forests, Indigenous communities, provincial government officials, fire scientists and other local stakeholders. The presence of a local 'champion' or a dedicated and funded position is also important for coordinating and scaling up these multi-stakeholder and cross-jurisdictional approaches. Below, we summarize four key recommendations to ensure the success of proactive wildfire management across all Community Forests, and beyond, in BC.

Key recommendation 1: Continue multi-year funding programs with multi-jurisdictional scope, supported by funding-specific liaisons and experts.

Given the strategic importance of funding, it is imperative that external funding programs continue to enable Community Forest (and broader community) solutions to proactive wildfire management, including innovation in fuels utilization. Several Community Forests with larger tenures, older licenses, or in closer proximity to centers of expertise were able to self-fund wildfire management (e.g. fuels treatments), but most required external funding to support their approaches. While experiences and levels of engagement with the SWPI, FESBC and CRI programs varied, there was widespread support for the FESBC program, both in terms of its ability to fund multi-year, landscape-level treatments – many of which require collaboration across multiple tenures or jurisdictions - and the level of expertise and support provided by staff. Time will tell if government will continue allocating funds to be administered by FESBC to support wildfire management. Nonetheless, as funding programs are continually reviewed and revised, it will be important to address the ongoing challenges that many communities face in terms of capacity and expertise to apply for and administer funding programs, many of which are perceived as having excessive administrative burdens. Providing clear frameworks and decision-support tools to help communities navigate the requirements and scope of the various funding programs, as well as dedicated staff to liaise with communities to assist in developing and implementing funding programs, would help address these challenges.

[14] https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/bc-flood-and-wildfire-review-addressing-the-new-normal-21st-century-disaster-management-in-bc-web.pdf

Key recommendation 2: Provide additional support tools for Community Forest managers and expanded training for practitioners to increase engagement with and effectiveness of wildfire management.

Capacity challenges include limited opportunities to expand training in wildfire science, issues finding appropriate contractors to implement specialized fuels prescriptions, and lack of expertise to undertake prescribed burning or evaluate the effectiveness of fuels treatments in reducing wildfire risk. Short-term solutions include guidelines on different and acceptable science-based wildfire management approaches (e.g., the 2020 Community Wildfire Resiliency Plan Instruction Guide[15]) and a compiling a list of specialized contractors that can undertake fuel treatment work. Longer-term priorities include expanded training in wildfire science, fuels mitigation, and prescribed burning that incorporates Indigenous cultural fire (led by Indigenous communities) and clarifies liability. Many Community Forest managers envision prescribed burning as a critical tool for achieving wildfire management goals, yet very few have received formal (both administrative and operational) support to do so – although with some notable exceptions, for example, in the Cariboo and Southeast Fire Centres. In addition, many Community Forests led by or in partnership with Indigenous communities are strongly pushing for the reintroduction of Indigenous cultural fire but feel their expertise and knowledge are not accepted under current training and certification guidelines.

Key recommendation 3: Continue revisiting forestry planning and legislative frameworks to enable appropriate prioritization of wildfire risk reduction where appropriate.

All Community Forest managers spoke to the challenge of prioritizing wildfire management in the context of other planning and legislative frameworks, including the requirements of the *Forest and Range Practices Act* and Land-Use Plans. Community Forest managers often struggle to work within these frameworks and balance overlapping values and objectives while also achieving best outcomes for wildfire management. While many managers have successfully found a 'middle-ground' between these requirements, they question whether other values should be equally considered when the primary reason for proactive management is to address wildfire risk to communities and critical infrastructure. Similar questions emerge for stocking densities and species requirements, which counter wildfire risk reduction guidelines. An over-arching solution is to include wildfire and resilience to climate change alongside the current primary resource values in a revised *Forest and Range Practices Act.*

Key recommendation 4: Expand government outreach positions dedicated to building synergistic collaborations to maximize the benefits of coordinated approaches to proactive wildfire management.

Community Forests are uniquely situated to lead proactive wildfire management in their tenure. As of September 2019, Community Forests have treated over 3000 hectares, invested over $2 million, and leveraged an additional $10 million[16], but many managers worry about the wildfire risk that is present outside of their jurisdiction. Some Community Forest managers serve as local champions, coordinating multi-agency or multi-stakeholder approaches to holistically address wildfire risk across larger areas and multiple jurisdictions, but very few have the capacity to do so. Community Forests will continue to lead innovative solutions to wildfire management, but to expand this approach requires leadership at the provincial level to facilitate opportunities and ensure equitable benefits to all Community Forests and communities throughout BC.

[15] https://www.ubcm.ca/assets/Funding~Programs/LGPS/CRI/cri-fcsf-2021-CWRP-supplemental-instruction-Guide.pdf
[16] https://bccfa.ca/wp-content/uploads/2019/09/BCCFA-Indicators-2019-Sept-19-links.pdf

Appendix 1: We thank the following respondents and the two respondents who chose not to be listed.

Community Forest	Respondent name	Role
Alberni Valley Community Forest	Chris Law	Community Forest Manager
Barkley Community Forest	Zolie Schaffer	General Manager
Burns Lake Community Forest	Frank Varga	Community Forest Manager
Cheakamus Community Forest	Heather Beresford	Community Forest Administrator
Cheslatta Community Forest	Jason Regnier	Community Forest Manager
Chinook Community Forest	Ken Nielsen	Community Forest Manager
Clinton and District Community Forest	Steve Law	Community Forest Manager
Creston Community Forest	Daniel Gratton	Community Forest Manager
Eniyud Community Forest	Mike Tomlinson	Community Forest Manager
Eskétemc Community Forest	Gord Chipman	Community Forest Manager
Harrop-Procter Community Forest	Erik Leslie	Community Forest Manager
Kaslo and District Community Forest	Jeff Reyden	Community Forest Manager
Likely Xat'sull Community Forest	Matt LeBourdais Lisa Ann Kraus Kathy MacBurney	General Manager Contractor Contractor
Logan Lake Community Forest	Garnet Mierau	Community Forest Manager
McLeod Lake Mackenzie Community Forest	Amber Hancock	Community Forest Board Member
Nakusp and Area Community Forest	Frances Swan	Community Forest Manager
Powell River Community Forest	Chris Laing	Community Forest Manager
Tumbler Ridge Community Forest	Duncan McKellar	Community Forest Manager
Westbank First Nation Community Forest	Dave Gill	Community Forest Manager
Wetzin'kwa Community Forest	Jay Baker	General Manager
Williams Lake Community Forest	Hugh Flinton	Community Forest Manager
Xaxli'p Community Forest	Robin Strong	Community Forest Manager