Turtle Island Consulting Services Inc.

Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada

FINAL REPORT

Prepared by:
Turtle Island Consulting Services Inc.

August 2021

Cover Photo: Indigenous wildland firefighters engaged in suppressing a high-intensity, free-burning surface fire in the boreal forest region of northern Alberta during the mid-1980s. Photographer unknown – provided to M.E. Alexander courtesy of the Alberta Forest Service, Forest Technology School, Hinton, AB.

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1. Executive Summary

Overview

In Canada, the voices of Indigenous wildland firefighting personnel[1] need to be heard, valued, and recognized.

For decades, Indigenous (First Nations, Métis, and Inuit) firefighters and fire operations staff have been engaged in wildland fire suppression activities, formally and informally. They are increasingly being called upon by their communities and the broader wildfire management agency community in Canada to engage and deploy in various wildfire suppression and related duties. In the past decade, we have seen an increase in wildfire activity and the number of communities put at risk or impacted by high-intensity wildfire events. Due to the nature of this work, Indigenous Peoples engaged in wildland fire suppression activities routinely work in hazardous situations and stressful environments – impacting their physical, mental, and spiritual/cultural well-being.

Little is known or understood about the *experiences of Indigenous wildland firefighting personnel.* To address this deficit, we developed an online survey and virtual circles were conducted specifically for individuals who self-identified as Indigenous and worked in wildland firefighting and/or fire operations for at least one fire season in Canada. These participant selection criteria supported the sharing of Indigenous Peoples' voices in culturally safe spaces to help (i) increase the understanding of their jobs, (ii) enhance overall satisfaction from a cross-cultural perspective during this important work, and (iii) aid in making the future of wildland firefighting more enjoyable, safer, and culturally inviting.

> **What does this project contribute to the mandate of Natural Resources Canada?**
>
> **The *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project is the first study of its kind! This project provides preliminary data on cultural safety and occupational health and safety that is necessary to improve the understanding of Indigenous perspectives on wildland firefighting and wildland fire operations across what is now called Canada.**

From January – July 2021, Turtle Island Consulting Services Inc. (TICS Inc.) Project Team explored the following set of questions:

- *What are Indigenous wildland firefighters' and wildland fire operations staff's experiences regarding accident/injury rates, sickness presenteeism/absenteeism, chronic illness (cancer, respiratory illness, etc.), close calls, racism/discrimination/harassment?*

- *What is currently working on the fireline and fire operation centres to promote cultural safety of Indigenous wildland firefighting personnel?*

- *What are the priority needs/issues and recommendations for enhancing cultural safety for Indigenous wildland firefighting personnel?*

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[1] The term "wildland firefighting personnel" is used to reference wildland firefighters and other wildland fire operations staff, including support personnel.

This project was intended to create a better understanding of occupational resiliency from the perspectives of Indigenous wildland firefighting personnel and to promote cultural safety as part of understanding occupational health and safety - based on workers' stories and supported by relevant literature.

Methods

The TICS Inc. Project Team used the Etuaptmumk*/*Two-Eyed Seeing approach[2] and mixed methods approach of qualitative and quantitative data collection. This involved reviewing the literature which then informed the design and administration of a customized online survey and the facilitation of virtual circles. Specifically, an anonymous online questionnaire (via *Simple Survey*)[3] on cultural safety and occupational health and safety[4] was shared with prospective survey participants through social media (e.g., Facebook, Twitter), provincial/territorial/national wildfire organizational key contacts, and personal direct contacts across Canada. In total, 191 individuals answered most of the online survey. Guided by the Talking Circle which draws on the collective wisdom of the group, we facilitated four virtual circle sessions that were hosted on the Zoom videoconferencing platform. In total, six people who self-identified as Indigenous and worked in wildland firefighting and/or fire operations for at least one fire season in Canada participated in the virtual circles.

Adapting the occupational resiliency conceptual framework from the 2012 work of Langlois, Caverley, Krishnaswamy, MacGregor, Cunningham, Carlson, Eustache, & Strobl,[5] the TICS Inc. Project Team examined the cultural safety and occupational health and safety of Indigenous wildland firefighting personnel in Canada based on multiple dimensions:

- Self-identification (i.e., demographics);

- Organizational characteristics (e.g., leadership and management commitment, communications and reporting – including close calls, supportive environment, support for unique and diverse identities, involvement, training and development, productivity);

- Work-related illnesses/injuries (e.g., physical health, mental health, general health, COVID-19 pandemic);

- Work experiences (e.g., perceived safety of overall work environment, career-life experiences, and job satisfaction); and

- (Personal) values (e.g., responsibility for one's health, Indigenous cultural teachings and practices).

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[2] For more information about Etuaptmumk*/*Two-Eyed Seeing, visit http://www.integrativescience.ca/Principles/TwoEyedSeeing/.
[3] For more information on *Simple Survey*, visit https://simplesurvey.com/.
[4] The questionnaire was structured based on scholar-practitioner literature and related works, notably - Langlois, B., Caverley, N., Krishnaswamy, A., MacGregor, J.N., Cunningham, J.B., Carlson, M., Eustache, J., & Strobl, K. (2012) *Final report – Safeguarding our Indigenous communities: Measuring the health and safety culture of Aboriginal fire crews and emergency service personnel in British Columbia*. Also, we adapted survey instruments to the context of Indigenous Peoples and wildland firefighting and wildland fire operations. They included, but were not limited to, Cox and Cheyne's (2000) *Safety climate checklist*; Janssens, Brett and Smith's (1995) *Perceptions of safety level survey*; Mueller, DaSilva, Townsend and Tetrick's (1999) *Safety climate survey*; Ostrom, Wilhelmsen and Kaplan's (1993) *EG&G Idaho safety norms survey*; and Yule, Flin and Murdy's (2001) *Safety climate survey*.
[5] Langlois, B., Caverley, N., Krishnaswamy, A., MacGregor, J.N., Cunningham, J.B., Carlson, M., Eustache, J., & Strobl, K. (2012). *Final report – Safeguarding our Indigenous communities: Measuring the health and safety culture of Aboriginal fire crews and emergency service personnel in British Columbia*. Kamloops, BC: First Nations' Emergency Services Society.

The relationship among these dimensions has significant implications for Indigenous wildland firefighting personnel across Canada where there is an increasing need to enhance recruiting and selecting, rewarding and retaining, developing and coaching, and managing (worker-supervisor) relations – as a means of creating an inclusive, welcoming, healthier, and safer work environment.

Notable Findings

Career-life experiences

- The top five reasons that respondents initially became wildland firefighters and/or wildland fire operations staff were: (1) they like challenging and exciting work environments; (2) they like helping people and communities in their time of need; (3) they like being close to the land; (4) they feel a responsibility to care for Mother Earth; and (5) they received a referral from a family member/friend.

- Key individuals who influenced respondents to become wildland firefighters and/or wildland fire operations staff were family members, friends, and/or wildland firefighters.

- Respondents were in general agreement that they are "satisfied" or "extremely satisfied" with their experience in wildland firefighting and/or other aspects of wildland fire operations.

- The top five reasons respondents like being wildland firefighters and/or wildland fire operations staff were: (1) opportunity to work outdoors; (2) excitement associated with wildland firefighting and/or wildland fire operations tasks; (3) opportunities for professional training and skills development; (4) enjoyment of physical tasks associated with wildland firefighting and/or wildland fire operations; and (5) camaraderie with crew/co-workers (team atmosphere).

- Regarding career advancement, respondents who stated that they received a promotion indicated that it was based on leadership skills, job performance, and education or training. Seniority and willingness to relocate were cited less frequently.

- The top five work concerns for respondents were: (1) lack of future career advancement opportunities (e.g., opportunities to move from seasonal to permanent wildland fire protection positions); (2) cultural safety and work-related discrimination in the workplace; (3) long-term impacts on physical health from work-related exposure to hazardous and stressful conditions; (4) long term impacts on mental health from work-related exposure to hazardous and stressful conditions; and (5) illness and/or injury on the job.

- The top five occupational health and safety concerns for respondents were: (1) COVID-19 pandemic in the fire camp; (2) more frequent extreme weather events (e.g., long, more intense fire seasons); (3) hazards on the fireline; (4) more frequent and more severe insect outbreaks[6] affecting forest fuels and overall work conditions; and (5) living in fire camp conditions (e.g., group sleeping, eating, and bathing).

- Regarding career departure, for respondents who stopped being wildland firefighting personnel, the most frequent reasons were a change in career focus, lack of career advancement opportunities, and low pay.

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[6] E.g., mountain pine beetle.

Accident/injury rates (includes chronic illness)

- Respondents who indicated they experienced a mild to extreme illness/injury event reported physical health-related illnesses/injuries more often than mental health-related illnesses/injuries.

- There appeared to be a pattern where respondents who reported a given work-related illness/injury also felt supported by their employer.

- There were mixed results from respondents about whether they sought a diagnosis or not for a work-related illness/injury event (physical health or mental health-related).

- None of the respondents who indicated they experienced a mild to moderate illness/injury received workers' compensation.

- The top three individuals that respondents typically sought mental health help/support from were: (1) counsellor; (2) Elder and physician; and (3) family (includes parent), friend, spouse/partner. Respondents' mental health counselling services were typically provided by their employer benefits plan or they paid out of their own pocket.

- Reported work-related mental health incidents (experienced by crews/co-workers) focused on mental health crises, workplace hazards (included close calls), and family/relationship issues.

- For respondents who reported a crew/co-worker work-related serious illness/injury or fatality, the events were caused by being struck by an object (e.g., falling tree), transportation accident (e.g., helicopter crash) or a heart attack. Respondents indicated that their crew/wildland fire operations co-workers experienced the work-related serious illness/injury or fatality on the fire line which were typically reported to leadership/management (includes supervisors).

Sickness presenteeism/absenteeism

- The top three reasons for respondents to go to work despite being ill and/or injured were team involvement and engagement, livelihood, and work ethic.

- Similar questions on sickness presenteeism and sickness absenteeism were posed in the Langlois et al. 2012 report on Indigenous fire crews and emergency service personnel in British Columbia. Respondents in this study self-reported an average sickness absenteeism rate of 1.48 days and an average sickness presenteeism rate of 3.30 days.[7] Therefore, as a comparison to the TICS Inc. 2021 study, the sickness absenteeism rate was slightly lower for the TICS Inc. 2021 study (1.49 days for the Langlois et al. 2012 cohort vs. 0 days for the TICS Inc. 2021 Project Team cohort). The same can be said for the sickness presenteeism rate between cohorts (Langlois et al. 2012 cohort at 3.30 days vs. the TICS Inc. 2021 Project Team cohort at 0 days).

- The top five ways that respondents coped with stress during their experience in wildland firefighting and/or other aspects of wildland fire operations were: (1) socializing with supportive friends and family; (2) participating in a hobby (e.g., reading a book, playing games); (3) getting proper exercise, eating nutritious foods, practicing good sleep (between 7 – 9 hours of sleep per

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[7] Langlois, B., Caverley, N., Krishnaswamy, A., MacGregor, J.N., Cunningham, J.B., Carlson, M., Eustache, J., & Strobl, K. (2012). *Final report – Safeguarding our indigenous communities: Measuring the health and safety culture of Aboriginal fire crews and emergency service personnel in British Columbia*. Kamloops, BC: First Nations' Emergency Services Society.

night); (4) talking out the stressful issue with a crew member/co-worker; and (5) practicing cultural activities (e.g., traditional teachings, healing ceremonies).

- Respondents who worked as wildland firefighting personnel felt they were in an unsafe work environment twice (median) <u>during</u> the 2020 wildland fire season and COVID-19 pandemic. This was similar to respondents who felt they were in an unsafe work environment the same amount of times (during their experience in wildland firefighting and/or wildland fire operations) <u>before</u> the COVID-19 pandemic.

<u>Close calls</u>

- Fifty-one out of 102 respondents (50%) reported that they had experienced a close call.

- The top three close call types (e.g., unexpected fire behaviour, helicopter-related and falling tree/snag) accounted for approximately 70% of the incidents reported in the survey.

<u>Racism/discrimination/harassment</u>

- During their time in wildland firefighting and/or wildland fire operations, 60 out of 113 respondents (53%) indicated they experienced work-related discrimination, while the remaining respondents stated they either did not experience work-related discrimination (41 out of 113; 36%) or were "not sure/uncertain" if they experienced work-related discrimination (12 out of 113; 11%).

- 47 out of 58 respondents (81%) indicated that ancestry/race (e.g., nation/band/community/tribal affiliation) was the most frequent type of work-related discrimination encountered during their time in wildland firefighting and/or wildland fire operations. Other types of work-related discrimination experienced by respondents during their time in wildland firefighting and/or wildland fire operations were physical appearance (e.g., hair length, size, skin colour, piercings, tattoos); physical ability (e.g., fitness level, weight); religious beliefs (e.g., Christianity, Indigenous spiritual practices); age and education level.

  The nature of the work-related discrimination was primarily: (1) intimidating, offensive or humiliating joke(s) or suggestions and workplace power struggles (e.g., misuse of authority, lateral violence-equal positions, not working as equal teammates); (2) gossiping; (3) false accusations, excluding potential employees during promotion/career advancement process; (4) actions of a derogatory nature (e.g., hand signs, mocking, mimicking); and (5) bullying (e.g., physically, verbally, or any other action).

- The main reasons respondents did not report their work-related discrimination experience(s) was due to: (1) fear of reprisal or retaliatory act and/or they didn't think it would matter; and/or (2) they were new to the organization, and unclear of the process to file a complaint and/or other.

<u>Cultural safety and occupational health and safety – what works</u>

- *With regards to occupational health and safety*, respondents reported very positive experiences with organizational characteristics such as leadership and management commitment, communications and reporting, supportive environment, and involvement.

- *With regards to cultural safety*, respondents reported more can be done to acknowledge and implement ways to create a respectful and safe work environment for Indigenous wildland firefighting personnel.

- Respondents felt there is a need to recognize the mission critical role of supervisors (crew leaders/wildland fire operations centre supervisors) in creating a welcoming and inclusive work environment – fierce and passionate leadership demonstrated through promoting team work and facilitating a sense of belonging, supporting diversity and inclusion – treating one another as equals, and motivating and supporting crew members and staff.

- Along with supervisors, crew members/co-workers are also instrumental in creating a welcoming and inclusive environment for Indigenous wildland firefighting personnel. Relevant competencies are recognizing and demonstrating mutual trust, honesty, fairness, and understanding (includes openness to the use of Indigenous cultural practices); participating in team work; and engaging in shared experiences (includes participating in cultural practices together).

- Strategic communications with crew leaders/supervisors and crew members/co-workers was deemed another important dimension to cultural safety in relation to occupational health and safety. Again, supervisors were viewed as pivotal in promoting two-way communications with their teams. Effective communication involved actively listening, reserving judgment, considering all ideas of the crew/staff to enhance decision-making and problem solving in wildland fire operations, and using clear and prompt top-down and horizontal communications (e.g., debriefings and fireside chats) in creating a respectful and safe work environment.

- Respondents shared stories about engaging in workplace safety training and practices (both formal and informal) which includes following safety policies and procedures (e.g., codes of conduct, occupational health and safety regulations) and participating in equity, diversity, and inclusion-related training (i.e., anti-harassment training, cultural awareness and sensitivity training).

- According to respondents, tangible actions for creating a culturally safe work environment include:

  Recognize and use traditional ecological knowledge. This includes, but is not limited to, respecting and using Indigenous cultural protocols and practices; hiring Indigenous Peoples; participating in Indigenous engagement and relationship building; and retaining Indigenous-led/operated wildfire crews and contractors.

  Have a respectful work environment. This includes, but is not limited to, maintaining a work ethic and professional conduct; participating in respectful workplace training; having equal treatment in the work environment; and having supportive leadership and management, particularly Indigenous leadership (e.g., supervisors) engaging in clear and respectful two-way communications.

Cultural safety and occupational health and safety – priority needs/issues and recommendations

- For respondents, "cultural safety" means:

  Honouring traditional ecological knowledge, cultural practices, and customs. This includes, but is not limited to, protecting one's cultural identity and way of life (e.g., embracing cultural beliefs

and values) and having a sense of belonging to others, to the land, and to safeguard Mother Earth (e.g., protecting the land and artifacts); and

Having an inclusive and respectful work environment. This includes, but is not limited to, not having to worry about racism, discrimination, harassment, and stereotypes in one's work environment; respecting people's cultures, values, and beliefs; looking out for another as a crew/team; and educating others about one's cultural identity/identities.

- For respondents, a "welcoming and inclusive work environment" means:

  Being treated as an equal regardless of race, culture, religion. This includes, but is not limited to, having barrier-free employment, hiring, career promotion/advancement, and training; and treating one another with mutual respect, understanding, and openness.

  Recognizing, celebrating, and honouring Indigenous cultural ways of knowing and methods. This includes, but is not limited to, utilizing Indigenous cultural practices, ceremonies, and traditional ecological knowledge (e.g., land acknowledgements, consultations with Indigenous communities); engaging in cultural training and learning; and protecting the land/Mother Earth.

  Feeling comfortable to be how I am in the workplace without fear of reprisal. This includes, but is not limited to, having access to a fair and trusted grievance process; and having a good team and great supervision (e.g., open communications), particularly Indigenous leadership (e.g., Indigenous Peoples working from the top down and in all areas of the service).

- Respondents indicated that having a culturally safe work environment for Indigenous Peoples is important in the wildland firefighting and wildland fire operations professions in Canada.

- **It is important to explore cultural safety as an occupational health and safety issue**. For people to feel valued in the work environment and succeed in their jobs, employers have a role in recognizing and respecting people's unique and diverse identities (e.g., race, religion, gender, socio-economic status, physical and mental ability, age, and sexual orientation).

Implications for Scholars and Practitioners

- We acknowledge the breadth of the areas explored in this project that relate to cultural safety and occupational health and safety.

- The intent was to support the sharing of preliminary data on this emerging national topic in a timely, accessible, and culturally-relevant manner.

- We recommend a focus on depth for future research and analysis regarding Indigenous wildland firefighting and wildland fire management. In particular, in the areas of mental health needs and resources in Indigenous fire services; personal style of Indigenous wildland firefighting personnel; and giving voice to the experiences of new professionals - Indigenous wildland firefighting personnel with less than five years of experience.

- In terms of policy and program recommendations:

    o Co-develop an Indigenous wildfire research agenda

    o Co-create and fund culturally-relevant and customized career development programs

    o Promote access and funding by wildfire agencies and related employers to Indigenous cultural supports/resources (e.g., traditional teachings; healing ceremonies; Elder, Knowledge Keeper and Fire Keeper engagement)[8] to aid workers in connecting (or reconnecting) to occupational health, safety, and well-being practices

    o Implement the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP) across orders of government

    o (Re)define cultural safety and a welcoming and inclusive work environment in the context of wildland firefighting and wildland fire operations

- In general, the wildfire service has an organizational culture that developed primarily from Western values as a paramilitary organization. Therefore, understanding Indigenous knowledges, ways of knowing, and values in relation to Western-based wildfire service culture is important in identifying revised leadership and management competencies that recognize and respect current and emerging opportunities in the recruitment and selection, training and development, worker-supervisor relations, promotion and career advancement of Indigenous Peoples in wildland firefighting and wildland fire operations in Canada.

  In particular, it should be recognized that what often draws Indigenous Peoples to the field of wildland firefighting and wildland fire operations is not necessarily what employers are advertising from a recruitment perspective (e.g., adrenaline rush, paramilitary). Rather, career motivators include, but are not limited to, being in challenging and exciting work environments, helping people and communities in their time of need, being close to the land, feeling a responsibility to care for Mother Earth, receiving a referral from a family member/friend, and being in a team-based work environment.

Conclusion

- This project is intended to identify cultural safety and related performance measures that are relevant for Indigenous wildland firefighting in Canada; inform and recommend methods, strategies, and proposed next steps in creating a culturally and mentally safe work environment for Indigenous wildland firefighters, and enhance capacity building in Indigenous communities with regards to wildland fire protection.

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[8] Includes, but is not limited to, using a sweat lodge as a prevention and treatment strategy; integrating Indigenous recruitment and retention practices such as Talking Circles as a tool for decision-making and debriefings related to cultural safety and occupational health and safety issues; and increasing the awareness, recognition, and use of cultural burning techniques as a community protection and ecosystem stewardship tool.

2. Disclosure Statement

- Natural Resources Canada (NRCan) – Emergency Management Strategy – Wildland Fire Resilience Initiative provided funding for the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* project.

- This report is intended to provide a summary of findings about the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* project.

- The information provided in this report was based on Turtle Island Consulting Services Inc.'s (TICS Inc.) collective work from January 1, 2021 to July 31, 2021.

- The views and opinions expressed in this report do not necessarily reflect those of NRCan or the Government of Canada.

- As this report was prepared as part of NRCan Emergency Management Strategy – Wildland Fire Resilience Initiative funding, it will not be sold to a third party at any time during or upon completion of this project.

- The reproduction of *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* for publication or other uses requires written permission from TICS Inc. (email: info@turtleislandconsulting.ca).

3. Acknowledgements and Dedications

Project Funder

- *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* was funded by Natural Resources Canada (NRCan) – Emergency Management Strategy – Wildland Fire Resilience Initiative

Contributors and Supporters

TICS Inc. also raises our hands to the following individuals and groups who contributed and/or supported our project to date:

- Amy Cardinal Christianson (NRCan – Canadian Forest Service; in-kind project contributions – subject matter advisory support)

- Len Garis (National Indigenous Fire Safety Council Project/Aboriginal Firefighters Association of Canada; subject matter advisory support and collaborator)

- Dawn McVittie (NRCan; contract management liaison)

- Lisa-Marie Taing (NRCan; contract management liaison)

- Project participants (for the online survey and virtual circles)

- Pilot test and technical content reviewers (for the online survey)

- David Watson (NRCan – Canadian Forest Service; in-kind project contributions – subject matter advisory support)

- Wildfire organizational key contacts (personal networks, provincial/territorial and federal wildfire agencies, provincial/territorial and national Indigenous emergency management and related organizations)

We thank all Indigenous Peoples in the wildland firefighting and wildland fire operations sector (past and present) who stand on the frontlines to protect Mother Earth and safeguard communities.

Findings from this project will help us shape the future of wildland firefighting and wildland fire operations across the place that is now called Canada.

Turtle Island Consulting Services Inc. Project Team

TICS Inc. is located on the unceded traditional territory of the W̱SÁNEĆ People.

Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada was a multidisciplinary, collaborative team-based project.

TICS Inc. intentionally assembled a project team that was reflective of bringing together Western and Indigenous knowledge systems – hence, the use of the Etuaptmumk/Two-Eyed Seeing approach and mixed methods approach of qualitative and quantitative data collection. Members of the project team collectively have experience in wildland fire research, wildland firefighting, occupational health and safety, organizational development, and/or counselling psychology. The project team was comprised of Indigenous scholar-practitioners and non-Indigenous allied researchers.

The following list acknowledges all project team members – alphabetized according to last name:

- Martin (Marty) Alexander, Subject Matter Expert and Peer Reviewer

- Natasha Caverley, Principal Investigator

- Joe Gilchrist, Subject Matter Expert and Peer Reviewer

- James (Jim) MacGregor, Subject Matter Expert and Peer Reviewer

- Brad McDonald, Subject Matter Expert and Peer Reviewer

- Kathy Offet-Gartner, Co-Investigator

As noted earlier, Amy Cardinal Christianson (NRCan), Len Garis (National Indigenous Fire Safety Council Project/Aboriginal Firefighters Association of Canada), and David (Dave) Watson (NRCan) were project advisors to the TICS Inc. Project Team.

Appendix A of this report provides further information about project team members who are geographically located in British Columbia and Alberta, respectively.

A wildfire in the Okanagan region (in British Columbia, Canada) circa 2009. Photo credit: Brad McDonald

4. Introduction

In Canada, the voices of Indigenous wildland firefighters and other wildland fire operations staff including support personnel (aka wildland firefighting personnel)[9] need to be heard, valued, and recognized. The *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project provides preliminary data that is necessary to improve the understanding of Indigenous perspectives on wildland firefighting and wildland fire operations across what is now called Canada.

4.1 Research Project General Overview

For decades, Indigenous (First Nations, Métis, and Inuit) wildland firefighting personnel have been engaged in wildland fire suppression activities, formally and informally. They are increasingly being called upon by their communities and broader wildfire management agency structure in Canada to engage and deploy in various wildfire suppression and related duties. In the past decade, we have seen an increase in wildfire activity and the number of communities put at risk or impacted by high-intensity wildfire events. Due to the nature of this work, Indigenous Peoples engaged in wildland fire suppression activities routinely work in hazardous situations and stressful environments – impacting their physical, mental, and cultural/spiritual well-being.

Little is known or understood about the *experiences of Indigenous wildland firefighting personnel*. To address this deficit, in the spring of 2021, the Turtle Island Consulting Services Inc. (TICS Inc.) Project Team invited Indigenous wildland firefighting personnel to share their voices to help (i) increase the understanding of their jobs, (ii) enhance overall satisfaction from a cross-cultural perspective during this important work, and (iii) aid in making the future of wildland firefighting more enjoyable, safer, and culturally inviting.

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[9] The term "wildland firefighting personnel" is used in this report to reference wildland firefighters and other wildland fire operations staff, including support personnel.

4.2 Research Question, Objectives, and Outcomes

The *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project explored the following set of questions:

- What are Indigenous wildland firefighting personnel's experiences regarding accident/injury rates, sickness presenteeism/absenteeism, chronic illness (cancer, respiratory illness, etc.), close calls, racism/discrimination/harassment?

- What is currently working on the fireline and fire operation centres to promote cultural safety of Indigenous wildland firefighting personnel?

- What are the priority needs/issues and recommendations for enhancing cultural safety for Indigenous wildland firefighting personnel?

This project is intended to create a better understanding of occupational resiliency from the perspectives of Indigenous wildland firefighting personnel, and to promote cultural safety as part of understanding occupational health and safety - based on workers' stories and supported by relevant literature.

Note: For a list of key terms used throughout this report, please refer to Appendix B.

4.3 Considerations

In the spirit of openness and transparency, the TICS Inc. Project Team took into consideration the following factors in advancing the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project:

- **Pilot study**. As a first of its kind study in Canada, the TICS Inc. Project Team gathered preliminary information about perspectives on cultural safety and occupational health and safety from Indigenous wildland firefighting personnel. Our project team recognized that Indigenous wildland firefighting personnel have often had their voices and perspectives displaced, ignored or marginalized at the micro, meso, and macro levels in research and in broader organizational and public policy contexts.

- **Timelines**. To be flexible and inclusive of wildland firefighter and wildfire operations staff recall notices across Canada during the COVID-19 pandemic and early deployments due to emergency callouts for the 2021 wildfire season, timelines for the online survey and virtual circles were flexible in nature. This included accommodating deadline extension requests.

- **Nature of work**. In addition to the bullet points noted above, we recognize that the nature of work and employment in wildland firefighting and wildland fire operations is across multiple agencies and orders of government in Canada (Indigenous, municipal/regional, provincial/ territorial, and federal) and is seasonal in nature. This makes it challenging to determine the full representation of past and present wildland firefighting personnel who self-identify as Indigenous.

- **COVID-19 pandemic**. Based on the realities of the COVID-19 pandemic while recognizing the need for consistent approaches in advancing this project, the TICS Inc. team used videoconferencing to conduct research meetings and proceed with the various phases of the project. The project team is based in British Columbia and Alberta. As such, research activities

were intentionally virtual in nature (e.g., survey, virtual circles, literature search/review) – in compliance with COVID-19 provincial/territorial and federal health officers' directives.

- **Low survey response rates**. There are often limited response rates for Indigenous Peoples, communities, and self-identified Indigenous organizations to complete surveys. Therefore, use of the project team's professional networks and respective communication pathways (includes social media) were ways that we mitigated this challenge – as a means of increasing response rates. We also kept the online survey active for approximately three months.

- **Nature of questions**. In the survey and virtual circle sessions, questions posed in both formats were not diagnostic in nature (in the case of work-related illnesses and/or injuries) nor official complaint mechanisms (in the case of any disclosures of racism, harassment and/or discrimination in the work environment). Rather, the stories and experiences shared in the survey and virtual circle sessions were self-reported by respondents.

- **Triggering conversation**. The TICS Inc. Project Team recognized that some of the questions explored in the project required respondents to recall experiences that may be sensitive or difficult to deal with emotionally. As such, TICS Inc. Project Team adhered to ethics protocols (from our professional bodies/associations) by encouraging respondents during both the online survey process and virtual circle sessions to contact a mental health specialist/counsellor, their local Elder or Knowledge Keeper or other support person. They could also consult: https://www.crisisservicescanada.ca/en/looking-for-local-resources-support/. Furthermore, the TICS Inc. Project Team had an informed consent process which included respondents' rights to choose the questions that they felt comfortable in responding to without fear of any reprisal (refer to Appendix C).

- **Survey optimization**. During the pilot test phase for the online survey, the TICS Inc. Project Team identified that *Simple Survey* was optimized for viewing on a laptop or desktop computer. However, it could also be completed on a smartphone or tablet. Therefore, we included this information in our official survey announcement to advise prospective participants about survey accessibility options.

- **Language accessibility**. As *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* is a baseline project, with a required short turn-around time, the online survey, the virtual circle sessions, and related project communications were prepared and conducted in English. It is our intention that for future studies, we can include French and Indigenous languages in the scope of our work on this important topic. We received a small amount of queries on this matter. We stated our rationale as noted above and apologized in advance if this was a limiting factor for project participation.

5. Background and Context

In Canada, it is predicted that climate change will likely increase the annual area burned in some regions as well as impact the severity and length of the fire season.[10] There has been a series of increasingly catastrophic wildland fire events in recent years including, but not limited to, multiple regions in British Columbia (2017, 2018, and currently 2021); and Alberta (2011, 2016, and 2019) for example – all of which have significant Indigenous populations.

Wildland fire suppression is widely recognized as a hazardous occupation and dangerous line of work in terms of physical strain (e.g., heavy lifting), high-risk environments (e.g., exposure to extreme fire behaviour, falling trees/snags) [11] and associated psychological trauma when attending to victims.[12] As such, wildland firefighting personnel are exposed to harmful and unsafe situations that the general population likely does not experience as part of their daily work routine. In fact, some Indigenous wildland firefighting personnel have died as a result of wildfire entrapments and burn-overs.[13]

Indigenous[14] wildland firefighting personnel are increasingly being called upon by their respective communities, the broader non-Indigenous regional municipalities, provincial/territorial and federal wildfire management agencies to be deployed to engage in wildfire suppression and related duties. Due to the nature of this work, Indigenous wildland firefighting personnel routinely work in hazardous situations and environments throughout Canada – impacting and influencing their employment, work-related illness and injury rates, sickness absenteeism, and sickness presenteeism in relation to physiological, psychological, cross-cultural, and organizational characteristics in the work environment.

As there is growing interest by Indigenous Peoples across Canada to actively engage more in wildland fire suppression, it is important to better understand cultural safety as it relates to occupational health and safety in wildland firefighting and wildland fire operations – to enhance capacity building by identifying strengths and opportunities while addressing challenges and barriers to this group of valuable workers. Wildland firefighting personnel that are affected by work-related discrimination and by illness and/or injury events impact the existing team dynamic in terms of cultural safety and occupational health and safety culture in the work environment. Cultural safety, illnesses and/or injuries among Indigenous wildland firefighting personnel are of importance to wildfire management agencies, emergency services, the health services community (Western medicine and Indigenous healing), and the general public due to the potential financial and legal implications of illnesses and/or injuries to occupational exposures for workers.

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[10] Flannigan, M.D., Cantin, A.S., de Groot, W.J., & Wotton, M. (2013). Global wildland fire season severity in the 21st Century. *Forest Ecology and Management, 294*, 54-61.
&
Moritz, M.A., Parisien, M.A., Batllori, E., Krawchuk, M.A., Van Dorn, J., & Ganz, D.J. (2012). Climate change and disruptions to global fire activity. *Ecosphere, 3*(6), art49.

[11] Alexander, M.E. & Buxton-Carr, P. (2011). Wildland fire suppression related fatalities in Canada, 1941-2010: A preliminary report. In: R.L. Fox (Ed.). *Proceedings of the 11th International wildland fire safety summit, Missoula, Montana*. 4-8 April 2011. International Association of Wildland Fire, Missoula, MT, 1-15.
&
Alexander, M.E., Mutch, R.W., Davis, K.M. & Bucks, C.M. (2017). Wildland fires: Dangers and survival. In: P.S. Auerbach (Ed.). *Auerbach's Wilderness Medicine, Volume 1*. (7th ed.), Philadelphia, PA: Elsevier, 276-318.

[12] Wilson-Millar, G. (1992). *Critical incident stress in wildland firefighting*. Fairfield, WA: International Association of Wildland Fire.

[13] Keller, K. (2002). *Wildfire Wars: Frontline Stories of BC's Worst Forest Fires*. Madeira Park, BC: Harbour.

[14] Unless specified, the information presented in this report can be applied to all Indigenous Peoples in Canada (First Nations – Status and Non-Status, Métis, and Inuit).

Furthermore, many provincial/territorial governments (e.g., Government of British Columbia) and the Government of Canada have or are in the process of committing to implementing various aspects of the *Truth and Reconciliation Commission of Canada Calls to Action* and the *United Nations Declaration on the Rights of Indigenous Peoples*. Appendix D summarizes notable (national and international) reports and declarations pertaining to emergency management and Indigenous relations that informed the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project.

> *It is important to actively listen and give voice to cultural safety for Indigenous wildland firefighting personnel across what is now called Canada – recognizing strengths and opportunities, while addressing barriers and challenges that may be posing potential physical, mental, cultural/spiritual health and safety risks.*

In the current literature, little is known about how Indigenous wildland firefighting personnel experience and perceive cultural safety as it relates to occupational health and safety in their work environment. At present, there is very limited scientific research or related practical-based publications that have analyzed occupational health and safety culture, and related indicators in relation to wildland firefighting and wildland fire operations. The former National Aboriginal Health Organization (2006)[15] and Smye & Browne (2002)[16] observed and documented that Indigenous workers are generally underrepresented in health/safety scientific analyses. In addition, the 2009 First Nations, forestry, and natural resource information needs in British Columbia assessment[17] found that 39% of Indigenous respondents said their participation in natural resource management has improved over the years, but a lack of science-based information particularly as it relates to Indigenous issues was identified as a barrier. Having said that, groundbreaking works[18] by the First Nations' Emergency Services Society (FNESS) and their research team in British Columbia provided a platform for further research and corresponding knowledge sharing for our project.

> *Without engaging in current research that involves Indigenous voices and perspectives on cultural safety in relation to occupational health and safety, it will be challenging to bring forth timely, culturally-relevant, evidence-based policy, planning, and program decisions which respectfully and fully engage Indigenous Peoples in wildfire suppression across Canada.*

A multidisciplinary approach to cultural safety in relation to occupational health and safety was a cross-cultural informed way of honouring and understanding worldviews of Indigenous Peoples who have or who are currently engaged in wildland firefighting and wildland fire operations across what is now called Canada.

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[15] National Aboriginal Health Organization—NAHO (2006). *First Nations occupational health and safety: A discussion paper.* Ottawa, ON: NAHO.

[16] Smye, V., & Browne, A.J. (2002). "Cultural safety" and the analysis of health policy affecting Aboriginal People, *Nurse Researcher, 9*(3), 42-56.

[17] Krishnaswamy, A., Simmons, E., & Joseph, L. (2012). Increasing the resilience of British Columbia's rural communities to natural disturbances and climate change. *BC Journal of Ecosystems and Management, 13*(1), 1-15.

[18] Langlois, B., Caverley, N., Krishnaswamy, A., MacGregor, J.N., Cunningham, J.B., Carlson, M., Eustache, J., & Strobl, K. (2012). *Final report – Safeguarding our Indigenous communities: Measuring the health and safety culture of Aboriginal fire crews and emergency service personnel in British Columbia*. Kamloops, BC: First Nations' Emergency Services Society.
&
Langlois, B., Caverley, N., MacGregor, J.N., Cunningham, J.B. (2017). *Final report – Indigenous leadership in structural firefighting: Developing tomorrow's leaders in British Columbia*. Kamloops, BC: First Nations' Emergency Services Society.

Cultural Safety and Occupational Health and Safety

Initially based on Māori experiences in the healthcare system[19], "cultural safety" has been defined (in broad terms) as "an outcome based on respectful engagement that recognizes and strives to address power imbalances inherent in the system. It results in an environment free of racism and discrimination, where people feel safe."[20] Furthermore, "cultural safety is based on a framework of two or more cultures interacting in a colonized space - where one culture is legitimized and the other is marginalized. This can happen in hospitals, schools, workplace[s], and in many different service settings."[21]

Occupational health and safety is viewed as part of a broader workforce strategy that aligns with worker and employer contributions towards the overall performance of a given organization, profession and/or sector.[22] As it applies to occupational health and safety, cultural safety relates to employers, leaders and management (includes supervisors), and workers (particularly from BIPOC communities – Black, Indigenous, People of Colour) identifying, accessing, and using resources that support welcoming and inclusive work environments with health and safety values that promote anti-racism, anti-harassment, and anti-discrimination.

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[19] For more information on cultural safety, view the seminal 1996 work of Elaine Papps and Irihapeti Ramsden - Cultural safety in nursing: The New Zealand experience. *International Journal for Quality in Health Care*, 8(5), 491-497. https://doi.org/10.1093/intqhc/8.5.491.

[20] https://www.fnha.ca/wellness/wellness-and-the-first-nations-health-authority/cultural-safety-and-humility

[21] https://www2.gov.bc.ca/assets/gov/family-and-social-supports/child-care/ics_resource_guide.pdf

[22] Curtis, J., & Scott, L.R. (2004). Integrating disability management into strategic plans. *Workplace Health & Safety, 52*, 298-301.

6. Methods

Informed by current scholastic research and practical-based literature, the use of the Etuaptmumk/Two-Eyed Seeing approach[23] and mixed methods approach were used which involved the administration of an online survey followed by the facilitation of virtual circles. As the research was conducted with Indigenous Peoples, care was given to choosing the appropriate method of study. It is crucial to recognize that Euro-American approaches to gathering data may not be appropriate in their current form.[24] Choosing an appropriate methodological approach is critical because it influences which research methods are utilized and shapes data analysis.[25] There was a cultural interface to our work. This resulted in a methodological process for collaborative data instrument design, analysis, and subsequent reporting (process) that was of equal importance and significance as the findings themselves (final product/ deliverable) – based on our cross-cultural approach.

TICS Inc. intentionally assembled a project team that was reflective of bringing together Western and Indigenous knowledge systems – hence, the use of the Etuaptmumk/Two-Eyed Seeing approach and mixed methods approach of qualitative and quantitative data collection. Members of the project team collectively have experience in wildland fire research, wildland firefighting, occupational health and safety, organizational development, and/or counselling psychology. The project team was comprised of Indigenous scholar-practitioners and non-Indigenous allied researchers.

We are exploring an under-researched area and working with a defined population (Indigenous wildland firefighting personnel) whose views on cultural safety and occupational health and safety in wildland firefighting and wildland fire operations in Canada are relatively unknown. As a collective, we aimed to analyze and ultimately report on a rich thematic description of the survey and virtual circle data sets so readers get a sense of notable themes.

For the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project, we prioritized Indigenous interests without displacing other knowledge systems.

Equally, from an Indigenous research perspective, we acknowledged and honoured all respondents who engaged in this project – however far they progressed in the online survey and/or virtual circle sessions. *All respondents' voices and stories matter*.

We remained committed in recognizing both the journey (cross-cultural research process) and reflections (research findings) that, woven together, respect healing, career-life growth and development, truth and reconciliation in relation to the themes explored in this multidisciplinary collaborative research endeavour.

The *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project was conducted within the norms of our team's respective ethics protocols by ensuring informed consent throughout the research process – which includes protecting participants from being identified and protecting their confidentiality. Please refer to Appendix C for a summary of the ethical considerations for the project.

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[23] For more information about Etuaptmumk/Two-Eyed Seeing, visit
http://www.integrativescience.ca/Principles/TwoEyedSeeing/.

[24] Adamowicz, W. et al. (1998) In search of forest resource values of Indigenous peoples: Are nonmarket valuation techniques. *Society & Natural Resources, 11*(1). 51.
&
Castleden, H., Garvin, T. and Huu-ay-aht First Nation (2008) Modifying Photovoice for community-based participatory Indigenous research. *Social Science & Medicine, 66*(6), 1393-1405.
&
Smith, L.T. (1999) *Decolonizing methodologies: Research and Indigenous peoples*. University of Otago Press, Dunedin, New Zealand.

[25] Smith, L.T. (1999) *Decolonizing methodologies: Research and Indigenous peoples*. University of Otago Press, Dunedin, New Zealand.

6.1 Online Survey

An anonymous online questionnaire on cultural safety and occupational health and safety[26] was shared (via the online platform *Simple Survey*) with prospective survey respondents contacted through social media (e.g., Facebook, Twitter), provincial/territorial/national wildfire organizational key contacts, Indigenous emergency management and related organizations, and personal direct contacts across Canada.

Pilot testing was conducted to check the overall reliability and validity of the questions being posed as well as the accessibility and functionality of the online survey platform across various electronic devices (e.g., desktop computer, laptop, tablet, smartphone).

6.1.1 Data Collection

The *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* survey was open to individuals who self-identified as Indigenous and worked in wildland firefighting and/or fire operations for at least one fire season in Canada.

The survey used an online platform (*Simple Survey*) where respondents shared their knowledge, wisdom, perspectives, and stories about being Indigenous and engaging in wildland firefighting and/or fire operations in Canada which informed the understanding of occupational health and safety (including cultural safety) for wildland firefighting and wildland fire operations.

Respondents were invited to complete the survey via the internet or if requested, by telephone with a project team member. *Note: The option of completing a telephone survey aligns with cross-cultural research practices in engaging Indigenous populations through oral communications as a means of strengthening relationship building and trust throughout the project.[27]*

The main section of the survey (Questions #1 – #68) took approximately 30 – 45 minutes to complete, depending on how many questions respondents answered. There were also four optional sets of questions in the survey that respondents could answer. These were concerned with *job satisfaction* (approximately 2 – 5 minutes to complete), *work-related experiences with the COVID-19 pandemic* (approximately 5 – 10 minutes to complete), *work-related illnesses and/or injuries* (approximately 15 – 20 minutes to complete), and *general health* (approximately 2 – 5 minutes to complete). The survey included a combination of rating scale questions, dropdown questions, open-ended questions, and demographic questions. Definitions of key terms were also included for some of the survey questions.

Respondents were encouraged to take their time to reflect on and respond to the survey questions as their voices matter. As such, we encouraged respondents to read through all of the survey questions – recognizing that they may not answer all of them. Through the *Simple Survey* medium, respondents also

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[26] The survey was structured based on scholar-practitioner literature and related works, notably - Langlois et al.'s (2012) *Final report – Safeguarding our Indigenous communities: Measuring the health and safety culture of Aboriginal fire crews and emergency service personnel in British Columbia*. Also, we adapted survey instruments to the context of Indigenous Peoples and wildland firefighting and wildland fire operations. They included, but were not limited to, Cox and Cheyne's (2000) *Safety climate checklist*; Janssens, Brett and Smith's (1995) *Perceptions of safety level survey*; Mueller, DaSilva, Townsend and Tetrick's (1999) *Safety climate survey*; Ostrom, Wilhelmsen and Kaplan's (1993) *EG&G Idaho safety norms survey*; and Yule, Flin and Murdy's (2001) *Safety climate survey*.

[27] Snively, G. & Williams, L. (2005). The Aboriginal knowledge and science education research project. In W.M. Roth (Ed.), *CONNECTIONS '05*. 233-250.

had the option of using the "save and continue" feature to take breaks while completing the survey – therefore, respondents did not have to complete the survey in one sitting.

Participation in our survey was completely voluntary.

The survey was optimized for viewing on a laptop or desktop computer; however, it could also be completed on a smartphone or tablet.

The online survey was launched on March 22, 2021 and closed on June 27, 2021 and included up to three friendly reminder messages being circulated and posted via social media (e.g., Facebook, Twitter), provincial/territorial/national wildfire organizational key contacts, Indigenous emergency management and related organizations, and personal direct contacts across Canada.

6.1.2 Data Analysis

In total, 303 respondents agreed to participate in the online survey. From there, two screening questions were posed to ensure that participants met the project criteria: self-identified as Indigenous, and worked in wildland firefighting and/or fire operations for at least one fire season in Canada. This resulted in 191 individuals answering most of the online survey.

As previously mentioned, upon completion of the main section of the survey, respondents were extended an invitation to complete up to four optional sections that focused on job satisfaction, work-related experiences with the COVID-19 pandemic, work-related illnesses and/or injuries, and general health.

Through the use of *Simple Survey*, completed responses to each question in the survey were automatically uploaded to a summary report and spreadsheet – thereby, maximizing quality control and minimizing any potential data entry errors made by our project team. Outlying responses were checked for accuracy. Descriptive statistics were used in analyzing the survey data. These statistics measured central tendency (i.e., mean, median) and variability (i.e., standard deviation).

In small and large group formats (with at least two raters), themes (particularly from open-ended text responses) were reviewed by designated members of the project team as a peer review check and to identify areas in need of clarification, while preserving the confidentiality of survey respondents.

6.2 Virtual Circles

Guided by the Talking Circle which draws on the collective wisdom of the group, we facilitated four virtual circle sessions that were hosted on the *Zoom* videoconferencing platform. In total, six people who self-identified as Indigenous and who had worked in wildland firefighting and/or fire operations for at least one fire season in Canada participated in the virtual circles.

Invitations to participate in the virtual circle sessions were shared via the following communication pathways: project online survey,[28] social media (e.g., Facebook, Twitter), provincial/territorial/national wildfire organizational key contacts, Indigenous emergency management and related organizations, and personal direct contacts across Canada.

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[28] Respondents completing the online survey had the option of sending a confidential email message directly to the Principal Investigator and Co-Investigator expressing interest to participate in the virtual circles. *Note: Expressions of interest to participate in the virtual circles were not connected in any way with respondents' survey responses.*

6.2.1 Sharing Stories

Each virtual circle was audio/video recorded (supplemented with note taking) and involved respondents sharing stories about their perspectives on wildland firefighting and wildland fire operations; including Indigenous teachings and practices; and welcoming, respectful, and inclusive work environments.[29] If time permitted, participants explored additional topics/issues that they felt were important to explore as Indigenous wildland firefighting personnel.

Participation was completely voluntary.

For attending, actively participating, and sharing knowledge and expertise during the virtual circle, participants were provided with honoraria after the completion of the session. Twelve individuals formally expressed interest to participate in the virtual circle sessions. From there, six individuals confirmed their participation and provided informed consent to engage in a scheduled virtual circle session.

Virtual circles were approximately two hours in length and took place via *Zoom*. Sessions were held from May 29, 2021 to June 22, 2021 at mutually agreed upon dates/times between respondents and co-facilitators. Access to reliable internet (Wi-Fi connection) and computer (or electronic device - e.g., laptop, tablet, smartphone) in a quiet and confidential setting was necessary to participate in the virtual circle discussion. The virtual circles were co-facilitated by two members of the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project Team: Brad McDonald and Kathy Offet-Gartner. Natasha Caverley served as the logistics coordinator for the virtual circle process.

The virtual circle format creates a safer and non-judgmental place where participants have the opportunity to contribute to the discussion of important issues. The intent is to provide a safe place for connection and dialogue, meaning that all participants are open to being influenced by what happens during the process and do not enter the process hoping to persuade others or expecting a specific outcome.

6.2.2 Data Analysis

Content analysis was used to analyze the data collected from the virtual circles. In small group formats (with at least two raters), themes (from the virtual circle sessions) were reviewed by designated members of the project team as a peer review check and to identify areas in need of clarification, while preserving the confidentiality of virtual circle participants. This allowed us to search for patterns and elicit dimensions, images, and words that participants utilized to describe their feelings, thoughts, and experiences.[30]

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[29] We were inspired by the spirit and intent of the Echo Approach to aid us in understanding priorities and issues that are part of a given group or culture. This technique is culturally-congruent with Indigenous ways of knowing and promotes authentic participation with Indigenous participants in the virtual circles—acknowledging the process of building relationships and trust with Indigenous wildland firefighting personnel. Also, this particular method acknowledges that the participants are the subject matter experts of their own stories and lived experiences, with researchers being the learners.

For more information about the Echo Approach, refer to Bavelas, A. (1942). A method for investigating individual and group ideology. *Sociometry*, 5, 371-377 & Cunningham, J.B. (2001). *Researching organizational values & beliefs: The echo approach*. Westport, CT: Quorum Books.

For more information about Indigenous research methods and ways of knowing, refer to Snively, G. & Williams, L. (2005). The Aboriginal knowledge and science education research project. In W.M. Roth (Ed.), *CONNECTIONS '05*. 233-250.

[30] For more information about the mixed methods approach, refer to Creswell, J.W. (2003). *Research design: Qualitative, quantitative and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage.

7. Summary of Findings

Through responses via the online survey and virtual circle discussions, this section of the report represents the voices and perspectives of Indigenous wildland firefighting personnel across Canada. The summary of findings on cultural safety and occupational health and safety in wildland firefighting and wildland fire operations in Canada align with the key components of our cultural safety and occupational health and safety conceptual framework.

7.1 Conceptual Framework

Adapting the occupational resiliency conceptual framework from the 2012 work of Langlois et al.,[31] we examined cultural safety and occupational health and safety for Indigenous wildland firefighting personnel in Canada based on multiple dimensions. Figure 1 along with corresponding descriptors recognize the holistic and interconnected understanding of cultural safety in relation to occupational health and safety for Indigenous wildland firefighting personnel across Canada.

Figure 1. Cultural safety and occupational health and safety framework

Tashakkori, A., & Teddlie, C. (2003). *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage.
[31] Langlois, B., Caverley, N., Krishnaswamy, A., MacGregor, J.N., Cunningham, J.B., Carlson, M., Eustache, J., & Strobl, K. (2012). *Final report – Safeguarding our indigenous communities: Measuring the health and safety culture of Aboriginal fire crews and emergency service personnel in British Columbia*. Kamloops, BC: First Nations' Emergency Services Society.

SELF-IDENTIFICATION (DEMOGRAPHICS)

- Characteristics such as age, gender, geographic location, years of experience, position, and department type that aid in determining whether relationships exist within and between defined cultural safety and occupational health and safety outcomes.

ORGANIZATIONAL CHARACTERISTICS

- **Leadership and management commitment.**[32] Commitment involves individual and collective management with occupational health and safety policies, practices, and programs that support all workers – in particular, workers that are ill/injured due to work-related events. Leadership and management commitment also signify the ability to: (i) demonstrate an enduring and positive attitude toward occupational health and safety (including cultural safety); (ii) provide resources for the safe use of equipment and supplies; and (iii) develop and implement policies and procedures for their crews/staff pertaining to occupational health and safety (including cultural safety), recruitment and selection, training and development, and work schedules.

- **Communications and reporting (includes close calls/near misses[33]).** Communication involves leadership and management (including supervisors) connecting with crews and wildland fire operations staff about occupational health and safety and discussing how safety performance is reported in the workplace. In terms of reporting (and documenting), this involves communicating an occupational health and safety concern and having the necessary feedback mechanisms in place to aid wildland fire crews and wildland fire operations staff and their employers in mitigating future occupational health and safety risks.

- **Supportive environment.** This involves how crew members/co-workers help each other in dealing with occupational health and safety issues and creating a respectful and safe work environment. For the purpose of this project, a supportive environment extended beyond team cohesion to include access and use of safety gear (personal protective equipment – PPE) in one's work environment; thereby, enhancing occupational health and safety culture.

- **Support for unique and diverse identities.** This involves support by others (e.g., crew leader/ supervisor, crew/co-workers) in recognizing and respecting people's unique and diverse identities (e.g., race, religion, gender, socio-economic status, physical and mental ability, age, and sexual orientation); includes developing safeguards to protect the expression of peoples' identities and their needs, rights, and expectations in the work environment.

- **Involvement.** Involvement includes the extent to which occupational health and safety are a focus for all workers, particularly in terms of worker empowerment – having a voice in occupational health and safety decision-making, being accountable for their actions, and taking pride in their organization's occupational health and safety record.[34] For the purpose of this project, the term "involvement" also included co-creating a respectful and safe work environment, and fostering innovation to enhance occupational health and safety practices.

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[32] Includes crew leaders/wildland fire operation supervisors.

[33] These are work-related illnesses and/or injuries that almost happened. The U.S. National Wildfire Coordinating Group (https://www.nwcg.gov/glossary/a-z) defines a "near miss" as any potential accident which, through prevention, education, hazard reduction, or luck, did not occur.

[34] Zohar, D. & Luria, G. (2003). The use of supervisory practices as leverage to improve safety behavior: A cross-level intervention model. *Journal of Safety Research, 34*, 567-77. 10.1016/j.jsr.2003.05.006.

- **Training and development.** This involves understanding the access to, level, and type of safety-related training and development for wildland firefighting personnel.

- **Productivity (includes sickness presenteeism and sickness absenteeism).** This involves attending work despite being ill and/or injured (sickness presenteeism), while sickness absenteeism refers to sick leave. Together, both sickness presenteeism and sickness absenteeism are an estimate of work performance (i.e., productivity).

WORK-RELATED ILLNESSES/INJURIES

- **Physical health (includes illness/injury type, severity, rate, reporting, and related supports).** Involves exposure to work-related physical health illnesses/injuries experienced by respondents in relation to specific events. *Note: Excludes the COVID-19 pandemic.*

- **Mental health (includes illness/injury type, severity, rate, reporting, and related supports).** Involves exposure to work-related mental health illnesses/injuries experienced by respondents in relation to specific events. *Note: Excludes the COVID-19 pandemic.*

- **General health (includes perceived health and well-being, health behaviours).** Involves the general (or overall) self-reported state of health of respondents; includes the type of health behaviours used when coping with stress.

- **COVID-19 pandemic.**[35] Involves the effects and influences of the COVID-19 pandemic on various aspects of our life – including our work experiences and physical/mental/spiritual well-being individually and collectively.

WORK EXPERIENCES

- **Perceived safety of overall work environment.** Involves respondents' overall perception of safety in their work environment.

- **Career-life experiences.** Involves career and life motivators, influencers, and concerns experienced by respondents.

- **Job satisfaction.** Involves a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience; results from a person's perception that their job actually provides what they value in the work situation.

(PERSONAL) VALUES

- **Responsibility for one's health.** Involves respondents' perceptions of influence and control over their lives – particularly in the areas of personal health and well-being.

- **Indigenous cultural teachings and practices.** Involves the degree of engagement by respondents in traditional teachings and/or healing ceremonies.

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[35] COVID-19 was first detected in late December 2019 and was officially declared a pandemic by the World Health Organization on March 11, 2020. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

The relationship of these dimensions with cultural safety and with occupational health and safety has significant implications for Indigenous wildland firefighting personnel across Canada where there is an increasing need to enhance recruiting and selecting, rewarding and retaining, developing and coaching, and managing (worker-supervisor) relations – as a means of creating an inclusive, welcoming, healthier, and safer work environment.

Note 1: For confidentiality purposes, respondent numbers and/or pseudonyms are utilized for direct quotations about Indigenous perspectives on cultural safety and occupational health and safety. For respondent numbers, they relate to a randomly assigned "response number" in the online survey, while pseudonyms were used for the virtual circle fireside chats.

Note 2: Unless the TICS Inc. Project Team noted a significant cultural safety and/or occupational health and safety event which cannot identify respondents, findings for survey items where there were less than six respondents (n<6) were not reported to protect respondents' privacy.

Note 3: Percentages were rounded to the nearest whole number.

Note 4: In cases where the distribution is skewed, we report the median rather than mean as the average.

7.2 Self-Identification (Demographics)

For this project, self-identification refers to demographics - characteristics such as age, gender, geographic location, years of experience, position, and department type that aid in determining whether relationships exist within and between defined cultural safety and occupational health and safety outcomes.

Survey

Respondents self-identified primarily as First Nations males who worked in wildland firefighting or operations in Canada for at least one fire season at some point between 1970 – 2020 with many engaging in seasonal positions (typically as members of fire suppression crews). The average respondent fell in the range of 40-49 years of age with 10-14 years of experience in wildland firefighting and/or wildland fire operations. While the majority of respondents were based in northern and western Canada for most of their careers, there was representation from every province and territory except for Nunavut and Newfoundland and Labrador. For more information, refer to the following tables and descriptions for a further snapshot of survey respondents.

Table 1. Overall profile of survey respondents

Characteristics	Respondents	Percentage (%)
Self-Identity[36]		
• First Nations	183	65%
• Métis	41	15%
• Biracial/Multiracial with Indigenous heritage	15	5%
• Inuit	3	1%
• Non-Indigenous	39	14%

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[36] Mandatory screening questions for the online survey. The survey was for individuals who self-identified as Indigenous and worked in wildland firefighting and/or fire operations for at least one fire season in Canada.

Characteristics	Respondents	Percentage (%)
Self-Identity[37]		
• Worked in wildland firefighting or operations in Canada for at least one fire season at some point between 1950 – 2020	261	86%
Gender		
• Male	158	82%
• Female	27	14%
• Two-Spirit	3	2%
• Gender Fluid	1	1%
• Not listed	1	1%
Decades of activity as a firefighter and/or fire operations staff person		
• 1970 – 1979	18	N/A
• 1980 – 1989	36	
• 1990 – 1999	72	
• 2000 – 2009	93	
• 2010 – 2020	154	
Member of a fire suppression crew	150	80%
Position held during most recent season of wildland firefighting[38]		
• Crew leader	63	34%
• Crew member	47	25%
• Some other capacity (refer to Table 2 for details)	38	20%
• Did not work on a crew/none of the above	40	21%
Type of position held		
• Seasonal positions	133	47%
• Permanent, year-round positions	83	29%
• Emergency, as needed positions	63	22%
• Other	3	2%
Received a promotion	101 out of 180	56%
Highest position held		
• Director	3	4%
• Manager	11	15%
• Coordinator	17	24%
• Officer[39]	7	10%
• Technician[40]	16	22%
• Crew Leader	13	18%
• Crew Member	2	3%
• Support Staff	3	4%
Total number of years of experience	10 – 14 years	N/A
Total number of years of experience *with current employer*	5 – 9 years	N/A
Average number of weeks worked during a wildfire season	20 weeks	N/A

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[37] Mandatory screening questions for the online survey. The survey was for individuals who self-identified as Indigenous and worked in wildland firefighting and/or fire operations for at least one fire season in Canada.
[38] If applicable to respondents who served on a fire suppression crew.
[39] E.g., Fire Management Officer
[40] E.g., Fire Prevention Technician

Characteristics	Respondents	Percentage (%)
Average number of hours worked a week	60 hours (Mean)	N/A
Number of hours worked a week considered "overtime"	20 hours (Median)	N/A
Member of a union and/or association	91	55%
Union and/or association membership • Aboriginal Firefighters Association of Canada • International Association of Wildland Fire • National Fire Protection Association • First Nations' Emergency Services Society • Provincial Fire Chief Associations	 22 7 7 4 4	 16% 5% 5% 3% 3%
Geography • British Columbia • Alberta • Northwest Territories • Yukon • Other provinces (except Nunavut, Newfoundland and Labrador)	 47 32 22 8 57	 28% 19% 13% 5% 35%
Age range	40 – 49 years	N/A
Highest level of education completed • High school or higher	 149 out of 166	 90%

Table 2. Position held during most recent season of wildland firefighting

Choice	Percentage	Respondents
Type 1 Crew Leader	23%	44
Type 2 Crew Leader	7%	13
Type 3 Crew Leader	3%	6
Type 1 Crew Member	18%	33
Type 2 Crew Member	5%	10
Type 3 Crew Member	2%	4
None of the above/did not work on a crew	22%	40
Other	20%	38
Total	100%	188

Of the 38 responses noted as "other", 18 (49%) were in supervisory positions, 10 (27%) were in specialist/technical positions (e.g., Air Attack Officer, Danger Tree Assessor/Feller, Fire Behaviour Analyst), 6 (16%) were in crew positions, while 4 (8%) were undetermined.

The majority of respondents did not serve as a Single Resource[41] and, for simplicity, the following table has been limited to those respondents who did. Also, because of attendance at many incidents, respondents held multiple roles over the course of a season. In fact, the table indicates a total of 277 roles, of which the majority were at Level 1[42] (57%), the remainder were evenly split between Level 2 (22%) and Level 3 (21%). The most commonly held positions were Incident Commander (19%), Strike Team Leader (17%), and Division Supervisor (16%). The least common positions were Section Chiefs of Planning (8%), Logistics (8%), and Finance (3%).

Table 3. Type of ICS Single Resource position held

	Level 1[43]	Level 2	Level 3
Incident Commander	19	17	16
Operations Section Chief	22	10	5
Planning Section Chief	11	8	4
Logistics Section Chief	9	6	7
Finance Section Chief	4	2	3
Division Supervisor	28	8	8
Strike Team Leader	33	8	7
Task Force Leader	31	3	8

Seventy-five respondents provided a total of 76 classifiable responses. Of these, 12 were not applicable to ICS and 10 repeated positions already given to previous questions. Of the remainder, 23 reported the position of Danger Tree Assessor/Faller, 10 were technical specialists (e.g., Fire Behaviour Analyst, Air Attack Officer, Line Locator, Aerial Ignition Specialist), 8 were Pump Operators, 6 were Dozer of Fire Truck Operators and 7 were miscellaneous positions (e.g., Liaison Officer, technical support, Incident Commander Level 4, Information Officer).

Table 4. Type of position held

Choice	Percentage	Respondents
A career wildland firefighter and/or wildland fire operations staff person (i.e., paid/salaried/full time) for a provincial/territorial agency or Parks Canada	22%	63
A career wildland firefighter and/or wildland fire operations staff person (i.e., paid/salaried/full time) in the private sector (contractor/business/company)	7%	20
A seasonal wildland firefighter and/or wildland fire operations staff person (i.e., only during the fire season) for a provincial/territorial agency or Parks Canada	30%	84
A seasonal wildland firefighter and/or wildland fire operations staff person (i.e., only during the fire season) in the private sector (contractor/business/company)	17%	49

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[41] Based on the Incident Command System (ICS) and is in reference to respondents' most recent season of wildland firefighting.
[42] For the purpose of this project, Levels 1, 2, and 3 are interchangeable with Type. According to the *ICS Canada Glossary - July 2019 Update*, type refers to "an Incident Command System resource classification that refers to capability. Type 1 is generally considered to be more capable than Types 2, 3, or 4, respectively, because of size, power, capacity, or (in the case of incident management teams) experience and qualifications." (p. 12). Source: https://www.icscanada.ca/images/upload/docs/ICS%20Canada%20Glossary%20Jul2019update.pdf
[43] Same as above.

Choice	Percentage	Respondents
An emergency wildland firefighter and/or wildland fire operations staff person for a provincial/territorial agency or Parks Canada employee	10%	28
An emergency wildland firefighter and/or wildland fire operations staff person in the private sector (contractor/business/company)	12%	35
Other	2%	3
Total	100%	282

One-hundred and eighty participants reported the types of career position they currently held and in the past, resulting in 282 positions being identified. The majority of these were seasonal positions (47%), followed by permanent, year-round positions (29%), then emergency, as-needed positions (22%).

Table 5. Highest level of education

Choice	Percentage	Respondents
Some elementary school	0%	0
Elementary school	0%	0
Some high school	10%	16
High school	20%	31
Some post-secondary (university/college)	31%	48
Post-secondary (university/college) degree	35%	54
Graduate degree (e.g., M.Sc.)	4%	7
Total	100%	156

Of respondents who specified their highest level of education, 90% had completed high school or higher – with the majority of respondents having either some post-secondary education (31%) or a university or college degree (35%).

Virtual Circles

All six participants in the virtual circles identified as male and resided in either western or northern Canada. Their years of experience in wildland firefighting ranged from 21 years to 43 years, with the most common averaging between 40-43 years of experience as a wildland firefighter or wildland fire operations staff person. Virtual circle participants shared that they began their wildland fire career in their teen years; one as young as 14 years of age and the eldest entering at 19 years of age. Furthermore, virtual circle participants typically began their careers in the late 1970s or early 1980s; with one beginning their wildland firefighting career in 2000. Virtual circle participants began their involvement in wildland firefighting as a summer job and all spoke of loving the roles they engaged in. All virtual circle participants ascended through most, if not all levels (ranks) of wildland firefighting or wildland fire operations – beginning with entry level positions and working up into management roles.

7.3 Organizational Characteristics

7.3.1 Leadership and Management Commitment

During their most recent experience in wildland firefighting and/or wildland fire operations (excluding the COVID-19 pandemic from December 31, 2019 to present), respondents (107) rated *leadership and management commitment* to occupational health and safety on a five-point scale, ranging from "strongly disagree" to "strongly agree."

Respondents indicated the following with regards to *leadership and management commitment*:

- Disagreed that crew leaders/wildland fire operations centre supervisors do not show much concern for safety until there is an accident [82 out of 107 respondents; 77%; Mean = 2.04/5].

- Disagreed that safety matters are given a low priority in meetings with their employer (85 out of 107 respondents; 79%; Mean = 1.88/5).

In addition to exploring leadership and management commitment to occupational health and safety in wildland firefighting and wildland fire operations in Canada, the project team was interested in exploring the connections between leadership and management commitment and the creation of a respectful and safe work environment – whereby all crew members and staff feel valued in the work environment and succeed in their jobs. Eighty-one respondents shared ways that their crew leaders/wildland fire operations centre supervisors created a respectful and safe work environment.

Voices from the frontlines…

The major theme arising from stories about crew leaders/wildland fire operations centre supervisors creating a respectful and safe work environment was the demonstration of fierce and passionate leadership. This includes promoting team work and facilitating a sense of belonging, supporting diversity and inclusion – treating one another as equals, and motivating and supporting crew members and staff.

The following are notable stories on ways that crew leaders/wildland fire operations centre supervisors created a respectful and safe work environment.

Respondent #245 (Fierce and passionate leadership – <u>promoting team work and facilitating a sense of belonging</u>): *My supervisor made it feel like a Brotherhood and we all watched over each other.*

Respondent #251 (Fierce and passionate leadership – <u>supporting diversity and inclusion, treating one another as equals</u>): *We were all treated with the same respect and provided the same safe working/cultural environment no matter what background we are from.*

Respondent #522 (Fierce and passionate leadership – <u>motivating and supporting crew members and staff</u>): *Being proactively available. Putting in the effort. PASSION IS A [sic] MUST THAT GOES A LONG WAY. PASSIONATE PEOPLE ARE THE DRIVING FORCE BEHIND SUCCESSFUL OPERATIONS. PEOPLE WHO TRULY CARE MAKE ALL THE DIFFERENCE!*

The notion of fierce leadership is based on the work of Susan Scott - where "fierce" refers to a leadership style that demonstrates engagement and connection with people at a deep and authentic level. Fierce leaders (includes managers and supervisors) know that one of the most valuable aspects of projects, teams, programs, and services is relationships and emotional capital – includes collaborating, supporting professional/personal growth, and sharing values and ethics with others. As Scott states in her 2009 book, *Fierce leadership: A bold alternative to the worst "best" practices of business today*, "Seeking out people

with different views, different perspectives, different ideas is often challenging, because it requires us to set aside judgment and open our minds. But we have to remind ourselves that to get beyond where we are, where I believe most of us are, we would all be well served to choose our music carefully, to stop talking and listen to one another."[44]

7.3.2 Communications and Reporting

Communications and Reporting

Communications and reporting involves leadership and management (includes supervisors) connecting with crews and wildland fire operations staff about occupational health and safety (includes cultural safety) and discussing how safety performance is reported in the workplace. In terms of reporting (and documenting), this involves communicating an occupational health and safety concern (includes cultural safety) and having the necessary feedback mechanisms in place to aid wildland fire crews and wildland fire operations staff and their employers in mitigating future occupational health and safety risks. During their most recent experience in wildland firefighting and/or wildland fire operations (excluding the COVID-19 pandemic from December 31, 2019 to present), survey respondents rated ***communications and reporting to occupational health and safety*** on a five-point scale, ranging from "strongly disagree" to "strongly agree."

Respondents indicated the following with regards to *employer communications and reporting*:

- Agreed that their employer encourages employees to identify and report safety hazards (90 out of 107; 84%; Mean = 4.18/5).

Respondents indicated the following with regards to *crew leader/wildland fire operations centre supervisor communications and reporting*:

- Agreed that they are able to talk to their crew leader/wildland fire operations centre supervisor about health and safety questions or concerns (79 out of 114; 69%; Mean = 3.86/5).

- Agreed that their crew leader/wildland fire operations centre supervisor listens to them carefully (75 out of 114; 66%; Mean = 3.69/5).

- Disagreed that their crew leader/wildland fire operations centre supervisor often interrupts them when they are talking about health and safety matters (69 out of 114; 61%; Mean = 2.42/5).

Respondents indicated the following with regards to *crew/co-worker communications and reporting*:

- Agreed that their crew/co-workers listen to them carefully (93 out of 111; 84%; Mean = 4.08/5).

- Agreed that they are shown respect by their crew/co-workers for what they have to say about health and safety matters (92 out of 112; 82%; Mean = 4.07/5).

- Disagreed that their crew/co-workers often interrupt them when they are talking about health and safety matters (78 out of 112; 70%; Mean = 2.22/5).

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[44] https://www.goodreads.com/quotes/372577-seeking-out-people-with-different-views-different-perspectives-different-ideas

Furthermore, respondents shared stories about how effective communications in wildland firefighting and wildland fire operations often involves sharing experiences (in the crew and wildland fire operations centre) to promote two-way communications between crew leaders/supervisors and their teams and vice versa. This includes actively listening by reserving judgment to consider all ideas of the crew/staff to enhance decision-making and problem solving in wildland fire operations often using clear and prompt top-down and horizontal communications in creating a respectful and safe work environment.

Voices from the frontlines…

Ways that <u>crew leaders/wildland fire operations centre supervisors</u> created a respectful and safe work environment

Respondent #231 (Two-way communications – <u>open door policy</u>): *We met every morning for a debrief. With my crew we had a Prayer time and a song.*

Respondent #947 (Two-way communications – <u>open door policy</u>): *In my experience, the crew leads that I had for wildfire operations or section supervisors provided by the fire centers created respectful and safe work environments procedurally by implementing safety check-ins, having open communications, and safety briefings before and after shifts.*

Ways that <u>crew members/co-workers</u> created a respectful and safe work environment

Respondent #682 (<u>Clear and prompt communications and active listening</u>): *We all listen whenever someone else is sharing or talking about safety points for the day.*

Respondent #1152 (<u>Clear and prompt communications and active listening</u>): *Didn't sluff off a briefing, maintained situational awareness, completed all tasks with the utmost due diligence and followed up with communication. There are various approaches to creating a respectful and safe environment, but clear concise communication and expectations, in combination with honesty are the most crucial elements.*

For respondents, strategic communications with crew leaders/supervisors and crew members/co-workers involved the use of both top-down and horizontal communications through debriefings and related (fireside) chats - emphasizing the importance of maintaining a positive occupational health and safety culture in wildland firefighting and wildland fire operations.

Close Calls

Close calls (or near misses) were also examined. These are work-related illnesses or injuries that almost happened.

- Fifty-one out of 102 respondents (50%) reported that they experienced a close call.

- Forty-seven respondents shared stories about a close-call/near miss that they experienced during their time as a wildland firefighter and/or wildland fire operations staff person.

- Their stories pertained to 11 different types of close calls: unexpected fire behaviour,[45] helicopter-related, falling tree/snag, felling tree/snag, retardant/water drop, motor vehicle, bear encounter, heavy equipment rollover, hand tools, lightning, and bee sting. Other notable close calls were airplane-related and gun shots.

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[45] In general, fire behaviour represents a high-intensity fire incident (e.g., blow-up, flare-up).

- Thirty-seven out of 51 respondents (73%) indicated the events occurred on the fire line.

- The majority of respondents (41 out of 51 respondents; 80%) reported the close calls that they were involved in – reported the events primarily to their immediate supervisor and/or the incident commander/incident management team.

Voices from the frontlines…

The top three close call types (e.g., fire behaviour, helicopter-related and falling tree/snag) accounted for approximately 70% of the incidents reported in the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* survey.

Respondent #1607 (Fire behaviour): *Crew Leader sent me really far away to fall trees despite my objection, because of the intense fire behavior. Needless to say, I went there, the fire blew up, and I had to sprint 5km out of there before being burnt over.*

Respondent #1711 (Fire behaviour): *Put in a hazardous location fire burnt over us. Twice this happened to me. Overhead making decisions that can kill fire fighters. Not educated enough to hold their [sic] position. Never got compensated for this. Our crew was blamed for a decision fire command made. The politics in fire fighting are gross and no one listens to the native fire fighters. In all my years out on the line and seeing native people get hurt and killed. I have not seen any statement or acknowledgment [sic] to the native people.*

Respondent #1066 (Helicopter-related): *Flying in low visibility with a pilot [sic] that was new to the fire. He was talking to another pilot [sic] and the pilot [sic] that I was with misspoke and said they were on the west side of the drainage when they were really on the east. This was the same side the other aircraft was on and we nearly missed each other.*

Respondent #1458 (Falling tree/snag, fire behaviour): *well......the last one was when a tree top fell and hit beside me, ...while we were exiting the line due to winds picking up, ...we ran the last click [meaning one km] I think, sounded like giant walking by all the trees falling and branches falling, twigs blowing through the air, plus all the ash, smoke, ...fun times.*

7.3.3 Supportive Environment

The use of crews (or teams) is fundamental to wildland firefighting and wildland fire operations services across Canada. Therefore, a supportive environment often means understanding how crew members/co-workers help each other (i.e., team cohesion) in dealing with occupational health and safety issues and creating a respectful and safe work environment. For the purpose of this project, a supportive environment extended beyond team cohesion to include access and use of safety gear (personal protective equipment – PPE) in one's work environment; thereby, enhancing occupational health and safety culture.

During their most recent experience in wildland firefighting and/or wildland fire operations (excluding the COVID-19 pandemic from December 31, 2019 to present), survey respondents rated ***supportive environment for occupational health and safety*** on a five-point scale, ranging from "strongly disagree" to "strongly agree."

Respondents indicated the following with regards to having a *supportive environment* for occupational health and safety:

- Agreed that compliance with safety regulations is part of crew members'/wildland fire operations centre co-workers' written evaluations (77 out of 106; 73%; Mean = 4.09/5).

Respondents indicated the following with regards to *accessing and using safety gear in their work setting*:

- Agreed that they knew how to operate all equipment assigned to them (92 out of 105; 88%; Mean = 4.30/5).

- Agreed that their safety gear (PPE) was well fitted and appropriate (89 out of 105; 85%; Mean = 4.12/5).

- Agreed that they had extra safety gear (PPE) to last the duration of their deployments (84 out of 105; 80%; Mean = 4.01/5).

- Survey respondents disagreed that they may have worked in/with contaminated gear (PPE) (Median = 2/5).[46] Of the 97 respondents giving an opinion, 52 (54%) disagreed/strongly disagreed, 27 (28%) agreed/strongly agreed, while 18 (19%) were undecided – neither disagreed nor agreed.[47]

Respondents shared stories about how a supportive environment in wildland firefighting and wildland fire operations often involves the recognition and demonstration of mutual trust, honesty, fairness, and understanding (includes openness to the use of Indigenous cultural practices). These relational competencies are viewed as important ways for crew leaders/supervisors and crew members/co-workers to create a respectful and safe work environment.

Voices from the frontlines…

Ways that <u>crew leaders/wildland fire operations centre supervisors</u> created a respectful and safe work environment

Respondent #461 (Mutual trust, honesty, fairness, and understanding – <u>openness to the use of Indigenous cultural practices</u>): *My supervisors would respectfully ask me about my heritage and land based practices to include in their understanding of such matters. I am more than willing to help people understand what I know about cultural practices and living. My supervisors have never demeaned my heritage or culture and have only been supportive of my lifestyle.*

Respondent #590 (Mutual trust, honesty, fairness, and understanding – <u>openness to the use of Indigenous cultural practices</u>): *He was Indigenous…so very little was not out of the question. So as long as we did our jobs well and safely, we were respected. When we heard that someone in the community died, we were allowed to sing and drum. We also got permission to attend funerals.*

Ways that <u>crew members/co-workers</u> created a respectful and safe work environment

Respondent #1010 (<u>Mutual trust, honesty, fairness, and understanding</u>): *I tried to be straight forward and honest about my role and my job to bring them out safely and back home to their loved ones and that we are there to work and it is a dangerous job that paying attention to their surroundings is key to being safe.*

7.3.4 Support for Unique and Diverse Identities

Leadership and management (includes employers and supervisors) in wildland firefighting and wildland fire operations have a role in recognizing and respecting people's unique and diverse identities (e.g., race, religion, gender, socio-economic status, physical and mental ability, age, and sexual orientation).

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[46] In cases where the distribution is skewed, we report the median rather than mean as the average.
[47] Percentages may not add to 100% due to rounding.

Respondents shared the following with regards to **support for their unique and diverse identities:**

- Rated their *employer* as "good" (Median = 3) with regards to creating a welcoming and inclusive work environment for Indigenous wildland firefighting personnel.

- Rated their *crew and co-workers* as "good" (Median = 3) with regards to their level of inclusion of Indigenous wildland firefighting personnel.

- Agreed that they would like to have access to Indigenous cultural supports/resources to aid them in their occupational health, safety, and well-being practices (67 out of 115; 58%; Mean = 3.82/5).

- Agreed that their employer(s) identified and genuinely respected their cultural values and practices (Median = 4/5). Of the 110 respondents who gave an opinion, 57 (52%) agreed or strongly agreed, 23 (21%) disagreed or strongly agreed, while 30 (27%) were undecided – neither disagreed nor agreed.

- Were undecided (neither agreed nor disagreed) whether they have plenty of access to Indigenous cultural supports/resources to aid them in their occupational health, safety, and well-being practices (Mean = 2.95/5). Of the 100 respondents who gave an opinion, 38 (38%) disagreed or strongly disagreed, 34 (34%) agreed or strongly agreed, while 28 (28%) were undecided – neither disagreed nor agreed.

- Disagreed that they felt unfairly treated by their employer because of their unique and diverse identities (Median = 2/5). Of the 107 respondents who gave an opinion, 62 (58%) disagreed or strongly disagreed, 26 (24%) agreed or strongly agreed, while 19 (18%) were undecided – neither disagreed nor agreed.

- Disagreed that they have been asked by their crew leader/wildland fire operations centre supervisor if they would like to access Indigenous cultural supports/resources to aid me in my occupational health, safety, and well-being practices (54 out of 114; 47%; Mean = 2.39).

Overall, respondents had somewhat conflicting views about their employers and crews/co-workers demonstrating cultural safety in their work environment. For example, respondents indicated that their employer and crews/co-workers were good at creating a welcoming and inclusive work environment, yet they were undecided if they were unfairly treated by their employer because of their unique and diverse identities or if their employers identified and genuinely respected their cultural values and practices. Respondents indicated that they would like to have access to Indigenous cultural supports/resources to aid them in their occupational health, safety, and well-being practices as they were undecided if they had plenty of access to Indigenous cultural supports/resources to aid them in their occupational health, safety, and well-being practices. Supervisors (crew leaders/wildland fire operations supervisors) continue to play an important role in cultural safety in the context of occupational health, particularly in terms of whether or not they have asked their crews/staff if they would like to access Indigenous cultural supports/resources to aid them in their occupational health, safety, and well-being practices.

Work-Related Discrimination

For this project, work-related discrimination included action(s) that diminish, demean or disempower the identity/identities and well-being of individuals based on any number of individual or collective factors (e.g., age, ancestry/race, gender, socio-economic status, sexual orientation). While many instances of

discrimination are prohibited and punishable by law (e.g., *Human Rights Code*) in Canada, there are cases of discrimination in the work environment that go unreported.

Respondents shared the following with regards to ***work-related discrimination***:

During their time in wildland firefighting and/or wildland fire operations, 60 out of 113 respondents (53%) indicated they experienced work-related discrimination, while the remaining respondents stated they either did not experience work-related discrimination (41 out of 113; 36%) or were "not sure/uncertain" if they experienced work-related discrimination (12 out of 113; 11%). Refer to the following table.

Table 6. Work-related discrimination experienced

Choice	Percentage	Respondents
Yes	53%	60
No	36%	41
Not sure/uncertain	11%	12
Total	100%	113

As a project team, we are curious about the respondents who indicated "not sure/uncertain" to experiencing work-related discrimination – did something happen? Are they not sure what work-related discrimination is and/or what work-related discrimination can look like (e.g., types of work-related discrimination which can sometimes take the form of subtle acts of discrimination)?

For respondents who indicated that they did experience work-related discrimination during their time in wildland firefighting and/or wildland fire operations, the top five types of work-related discrimination experienced are referenced in the following table. *Note. Respondents had the option of selecting more than one type of work-related discrimination they experienced during their time in wildland firefighting and/or wildland fire operations.*

Table 7. (Top five): Types of work-related discrimination experienced

Ranking	Choice	Percentage	Count
1	Ancestry/race (e.g., nation/band/community/tribal affiliation)	81%	47
2	Physical appearance (e.g., hair length, size, skin colour, piercings, tattoos)	40%	23
3	Physical ability (e.g., fitness level, weight)	33%	19
4	Religious beliefs (e.g., Christianity, Indigenous spiritual practices)	31%	18
5 (tied)	Age	28%	16
	Education level	28%	16

Of note, 47 out of 58 respondents (81%) indicated that ancestry/race (e.g., nation/band/community/tribal affiliation) was the most frequent type of work-related discrimination encountered during their time in wildland firefighting and/or wildland fire operations.

The top five descriptions about the nature of the work-related discrimination are referenced in the following table. *Note. Respondents had the option of selecting more than one description of the work-related discrimination they experienced.*

Table 8. (Top five): Nature of work-related discrimination experienced

Ranking	Choice	Percentage	Count
1 (tied)	Intimidating, offensive or humiliating joke(s) or suggestions	55%	31
	Workplace power struggles (e.g., misuse of authority, lateral violence-equal positions, not working as equal teammates)	55%	31
2	Gossiping	48%	27
3 (tied)	False accusations	39%	22
	Excluding potential employees during promotion/career advancement process	39%	22
4	Actions of a derogatory nature (e.g., hand signs, mocking, mimicking)	38%	21
5	Bullying (e.g., physically, verbally, or any other action)	34%	19

Of note, 31 out of 56 respondents (55%) indicated that intimidating, offensive or humiliating joke(s) or suggestions as well as workplace power struggles (e.g., misuse of authority, lateral violence-equal positions, not working as equal teammates) were tied as the most frequent nature of work-related discrimination encountered during their time in wildland firefighting and/or wildland fire operations.

We observed in this project that while rating their *employer* and *crew and co-workers* as "good" (Median = 3) with regards to creating a welcoming and inclusive work environment for Indigenous wildland firefighting personnel, for some respondents, work-related discrimination was typically encountered from other crews (25 out of 57; 44%) and/or their employer (23 out of 57; 40%). As discussed later in this report, respondents rated their work concerns during their experience in wildland firefighting and/or wildland fire operations. Of note, cultural safety and work-related discrimination in their workplace was ranked second in the top five list of work concerns (Mean = 2.93/5).

Work-related discrimination was typically experienced on the fire line (29 out of 58; 50%), at the fire camp (26 out of 58; 45%), and/or at a wildland fire operations centre (22 out of 58; 38%). Refer to the following table. *Note. Respondents had the option of selecting more than one location of where the work-related discrimination took place.*

Table 9. (Top three): Location where work-related discriminated was experienced

Ranking	Choice	Percentage	Count
1	On the fire line	50%	29
2	At the fire camp	45%	26
3	At a wildland fire operations centre	38%	22

Work-related discrimination experienced by respondents was not reported during their time in wildland firefighting and/or wildland fire operations (38 out of 58; 66%). The main reasons respondents did not report their work-related discrimination experience were due to: (i) fear of reprisal or retaliatory act and/or they didn't think it would matter (tied – 10 out of 16; 63%) and/or (ii) new to the organization, unclear of the process to file a complaint and/or other (tied – 4 out of 16; 25%). *Note. Respondents had the option of selecting more than one reason why they did not report their work-related discrimination experience.*

Of note, respondents who experienced work-related discrimination during their time in wildland firefighting and/or wildland fire operations and did report the work-related discrimination, they typically reported the matter to their crew leader/supervisor, another wildland fire operations centre supervisor and/or a Human Resources Representative. Furthermore, crew leaders/supervisors and wildland fire operations centre supervisors and/or crew members and wildland fire operations centre co-workers encouraged respondents' decision to file a complaint.

Respondents either did not feel or did not know if their work-related discrimination concern was taken seriously (12 out of 20; 60%), while half of respondents (10 out of 20; 50%) felt that their work-related discrimination concern was treated with the appropriate confidentiality and discreetness to feel safe among the crew in their work environment.

Respondents did not receive encouragement to file a complaint (51 out of 57; 89%). While respondents did not receive encouragement to file a complaint, the majority of respondents were also not discouraged by anyone to file a complaint about their work-related discrimination experience (42 out of 57; 74%). Interestingly enough, of respondents who indicated that they were discouraged to file a complaint about their work-related discrimination experience, they indicated that they were discouraged by their wildland fire operations centre supervisor and/or crew leader/supervisor. Throughout this project, we continue to see how the supervisor (and their corresponding duties, roles, responsibilities, and leadership competencies) are a determining factor about respondents' perceptions and experiences about cultural safety and occupational health and safety during their time as wildland firefighters and/or wildland fire operations staff.

Welcoming and Inclusive Work Environment

While understanding work-related discrimination, we wanted to counterbalance our analysis by exploring the extent of support for unique and diverse identity/identities of Indigenous wildland firefighting personnel. Therefore, we extended a further invitation for respondents to describe, in their own words, what a "welcoming and inclusive" work environment looks like. Based on the perspectives of 103 respondents, this phrase means:

- *Being treated as an equal regardless of race, culture, religion*. This includes, but is not limited to, having barrier-free employment, hiring, career promotion/advancement, and training; and treating one another with mutual respect, understanding, and openness.

- *Recognizing, celebrating, and honouring Indigenous cultural ways of knowing and methods*. This includes, but is not limited to, utilizing Indigenous cultural practices, ceremonies, and traditional ecological knowledge (e.g., land acknowledgements, consultations with Indigenous communities); engaging in cultural training and learning; and protecting the land/Mother Earth.

- *Feeling comfortable to be how I am in the workplace without fear of reprisal*. This includes, but is not limited to, having a good team and great supervision (e.g., open communications), particularly Indigenous leadership (e.g., Indigenous Peoples working from the top down and in all areas of the service).

Voices from the frontlines…

What does a "welcoming and inclusive work environment" look like?

Being treated as an equal regardless of race, culture, religion – <u>barrier-free employment, hiring, career promotion/advancement, and training</u>:

Respondent #213: *A place where Indigenous wildland firefighters feel included and part of the team, no racist comments or remarks about race or religious beliefs. Being taken serious and included in decisions operationally that affect the safety and well being of the entire team.*

Respondent #422: *It's a work environment where I am free from harassment and exclusion because I'm Indigenous. It should look like an inclusion of our traditional languages in the training and teaching materials that we are given. It should look like the acceptance of oral examinations when completing mandatory training as identified by [agencies]. It should look like having Indigenous content in our training materials and including the Indigenous experience in training.*

Respondent #1761: *One that does not have stereotypes or racism associated with my skin colour, heritage, culture, traditions, practices, etc. Being welcomed regardless of orientation, heritage, etc. and being recognized for being a person with skills desirable in the wildland firefighting/wildland fire operations staff.*

Being treated as an equal regardless of race, culture, religion – <u>treating one another with mutual respect, understanding, and openness</u>:

Respondent #1627: *…we welcome all Indigenous and non-Indigenous peoples and everyone is treated with the same respect. We do not leave people out, being inclusive in the work environment is necessary for building an effective team. It is different in other provinces. For example, when sent out on export to different provinces, Indigenous Wildland fire crews are not treated the same, they are welcomed but they do not seem to be included, very different atmosphere.*

Recognizing, celebrating, and honouring Indigenous cultural ways of knowing and methods – <u>utilizing Indigenous cultural practices, ceremonies, and traditional ecological knowledge</u>:

Respondent #890: *That our knowledge and opinions matter. That our understandings of seasons, local geography, and local weather should be considered.*

Respondent #1058: *Incorporating traditional practices, like ceremonies before dispatch, or recognizing burning practices, and making an attempt to spreading awareness.*

What does a "welcoming and inclusive work environment" look like? (continued)

Recognizing, celebrating, and honouring Indigenous cultural ways of knowing and methods – <u>engaging in cultural training and learning</u>:

Respondent #228: *A welcoming and inclusive work environment for Indigenous wildland firefighters and/or wildland fire operations staff would acknowledge time for ceremony. It would provide non-Indigenous [sic] with cultural training to better recognize the people they are working for.*

Respondent #345: *Questions/inquiries from non-Indigenous people, I use this as an opportunity to teach for those who want to learn.*

Recognizing, celebrating, and honouring Indigenous cultural ways of knowing and methods – <u>protecting the land/Mother Earth</u>:

Respondent #223: *protecting the environment-Mother Earth.*

<u>Feeling comfortable to be how I am in the workplace without fear of reprisal</u>:

Respondent #522: *Free expression of our true self. The ability to excel and raise our brothers and sisters to their highest potential to perform [sic]. No holding back, if someone has a talent we fight like hell to put that talent in the spotlight and develop this person and their talents. This in turn benefits the person and everyone around them. We as a team benefit from now having this person's skills and talents on our side to help in our daily doings. Making the unit stronger, together, many hands make less work.*

Respondent #1066: *A place free of biases and stereotypes where Indigenous firefighters [sic] are free to be who they are and conduct their [sic] lives in a way that allows them to be their [sic] complete selves.*

Feeling comfortable to be how I am in the workplace without fear of reprisal – <u>having a good team and great supervision (e.g., open communications), particularly Indigenous leadership</u>:

Respondent #1542: *The employer is required to have an understanding of the culture of the working staff members, the failure to understand leads to disagreements within the crew members then it becomes an environment where staff is then considered discriminatory. Because they begin to treat members differently. They treat the results of the activity or event rather than the root cause. Staff have been trained to treat the "team" rather than [sic] the individuals that make up the team.*

Respondent #590: *A lot of Indigenous peoples working from the top down, in all areas of the service. That our people are hired for fires nearby and able to recruit from [sic] our area.*

Respondent #1086: *The overhead staff were respectful in the industry because it is mostly Indigenous men and women that work in the firefighting industry; also working as a contract firefighter the contract was run by First Nations reserve or Métis zone or settlement.*

After sharing perspectives on what a welcoming and inclusive work environment looks like, respondents then provided us with examples on ways their employers made and/or could have made them feel culturally safe or more welcomed and included as Indigenous wildland firefighters and Indigenous wildland fire operations staff.

The following themes arose from respondents (40) descriptions of actions that their employers <u>took</u> to make them feel culturally safe or more welcomed and included as Indigenous wildland firefighters and/or Indigenous wildland fire operations staff:

- *Recognizing and using traditional ecological knowledge*. This includes, but is not limited to, respecting cultural protocols, using Indigenous languages; hiring Indigenous Peoples; and retaining Indigenous-led/operated wildfire crews and contractors.

- *Having a respectful work environment*. This includes, but is not limited to, maintaining a work ethic and professional conduct; having equal treatment in the work environment; and having supportive leadership and management (e.g., supervisors) by engaging in clear and respectful two-way communications.

Voices from the frontlines…

Ways <u>employers</u> made Indigenous wildland firefighting personnel feel culturally safe or more welcomed and included

Recognizing and using traditional ecological knowledge – <u>respecting cultural protocols, using Indigenous languages</u>:

Respondent #1539: *Most of my co-workers were FN [First Nations]. My employers preferred to hire FN workers as they had more and better experience working on the land. They also worked well together as a crew. Drum circles were sometimes held in camps. Traditional languages were permitted in radio communications between crews.*

Recognizing and using traditional ecological knowledge – <u>hiring Indigenous Peoples</u>:

Respondent #1740: *Indigenous hiring is a priority….Cultural awareness training is mandatory for all employees of government, cultural activities are recognized, particularly at a community level. Firefighters are encouraged to get out into the community at community events, values are recognized and accepted…created a [task group] to address issues faced by Indigenous women…and is implementing recommendations from that group.*

Recognizing and using traditional ecological knowledge – <u>retaining Indigenous-led/operated wildfire crews and contractors</u>:

Respondent #210: *I work for a First Nations Government that is treaty and allows us to operate a wildland fire crew made up of our own people who are motivated to work in their [sic] own environment, protect their [sic] lands and make a tangible difference in our community.*

Having a respectful work environment – <u>maintaining a work ethic and professional conduct</u>:

Respondent #947: *The two employers that I had during the last few fire seasons that I attended almost inclusively hired Aboriginal staff, we were held in high regard for our knowledge and understanding of the lay of the land as well as our due diligence and work ethic and in my experience, they also catered to our needs better than some of the other employers I've had - allowing time off for bereavement, sickness or generally accommodating our basic human necessities, equipment, and PPE, lodging and travel expenses.*

Respondent #1065: *They introduced themselves in an [sic] appropriate manner. They called me by my first and last name. Instructed me and made sure that I understood the goals that I must achieve. Finish all tasks and responsibilities before the deadline.*

Having a respectful work environment – <u>having equal treatment in the work environment</u>:

Respondent #1086: *Respected my input…treated me as an [sic] equal, listened to my crew concerns or fire suppression concerns.*

Ways <u>employers</u> made Indigenous wildland firefighting personnel feel culturally safe or more welcomed and included (continued)

Respondent #1656: *1. Giving everyone equal chance for training didn't matter who was asking 2. Was always trying to help and didn't have favoritism to one person 3. Didn't treat employees wrong because of the colour of their skin.*

Respondent #1722: *Treat everyone with respect; Treat everyone as one.*

Having a respectful work environment – <u>having supportive leadership and management (e.g., supervisors) by engaging in clear and respectful two-way communications</u>:

Respondent #1063: *Celebrated national [sic] Aboriginal day with special care packages sent to us on the line; always made sure we had everything we needed; acted/investigated on any discrimination claims made on the fire line.*

Respondent #1142: *Understanding their customs and beliefs. Willing to listen and help where they can. Provide an Indigenous individual to work with them so that they understand where each stand regarding work.*

Respondent #1743: *1) treated with respect 2) professional 3) aware of all things going on with each member of the crew to let leaders know if they should be replacing any members before the start of shift not the morning of deployment.*

As areas for continuous improvement, the following themes arose from respondents' (88) descriptions of actions that their employers <u>could have taken</u> to make them feel culturally safe or more welcome and included as Indigenous wildland firefighters and/or Indigenous wildland fire operations staff:

- *Recognizing and using traditional ecological knowledge*. This includes, but is not limited to, respecting and using Indigenous cultural protocols and practices; hiring Indigenous Peoples; participating in Indigenous engagement and relationship building; and retaining Indigenous-led/operated wildfire crews and contractors.

- *Having a respectful work environment*. This includes, but is not limited to, maintaining a work ethic and professional conduct; participating in respectful workplace training; having equal treatment in the work environment; and having supportive leadership and management, particularly Indigenous leadership (e.g., supervisors) by engaging in clear and respectful two-way communications.

Voices from the frontlines…

Actions <u>employers could have taken</u> for Indigenous wildland firefighters and fire operations staff to feel culturally safe or more welcomed and included

Recognizing and using traditional ecological knowledge – <u>respecting and using Indigenous cultural protocols and practices</u>:

Respondent #228: 1. *Allowing me to take time to attend Sundance or Fast Ceremony with pay. 2. Where I am from there are people I know personally who have sweat lodge ceremonies once a week. It could be considered health care mentally and physically for us Type one fire fighters to attend during low fire levels. 3. Provide cultural training for new and current members to the area.*

Respondent #845: 1. *Elder discussion - have retired Ind [Indigenous] fire fighters guest speak to current crews 2. Maintain Traditional Knowledge 3. Display history on walls, through photos.*

Actions <u>employers could have taken</u> for Indigenous wildland firefighters and fire operations staff to feel culturally safe or more welcomed and included (continued)

Respondent #1152: *First year do a cultural camp for all staff. Make mental health first aid training as important/required as St. John's first aid. Extremely important when dealing with the cultural shock of being off reserve for some crews. The year before COVID, the forest area held a sweat and Indigenous day at camp for the [redact] crews and their families. With a meal, games, and ceremony, the crews and their loved ones, for the first time the [redact] crews truly felt as part of the forest area team.*

Respondent #1745: *Having Elders on site, ceremony, someone to talk to about upsetting news events (like TKemlups children).*

Respondent #1785: *Recognize and have open conversations on how colonization has impacted fire management and how fire suppression is what has created these disasters we have [sic] today. Let Indigenous people build a relationship with fire by allowing us to do many more burns. Recognize that they are a colonial agency that needs to make space for Indigenous communities to reclaim fire management.*

Recognizing and using traditional ecological knowledge – <u>hiring Indigenous Peoples</u>:

Respondent #1761: *Have more Indigenous people working in similar positions, and across organizations (at the provincial/territorial/municipal/local level), and particularly in federal agencies...; listen to and implement traditional skills/practices/techniques from millennia [sic] of Indigenous peoples' experience on the land; have Indigenous people in higher authoritative positions in wildland fire agencies....*

Respondent #890: *Hiring Indigenous Fire Bosses; Head office in an Indigenous Community; Changing policy to take into consideration Indigenous fire concerns.*

Respondent #1114: 1 - *they could allow more flexibility in the hiring process for First Nations people. 2 - allow First Nations staff to interview FN [First Nations] candidates this would make candidates feel [sic] more comfortable. 3 - recognize First Nations people not just the territory but the people.*

Recognizing and using traditional ecological knowledge – <u>participating in Indigenous engagement and relationship building</u>:

Respondent #231: *Recognize the territory, and show respect to the FN [First Nations] and the local workers. Provide an opportunity for the FN to work and trust the job will be done right.*

Respondent #454: *Engagement with Local Tribal organization or First Nations in bringing job awareness opportunities to the youth, most Tribal organizations don't have experienced personnel [sic] with fire background to answer the youth questions. Have an Elder come to the Fire Management Headquarters during the start of hiring of seasonal staff and bring cultural awareness engagement to bridge the lack of history of the Indigenous First Nations.*

Respondent #590: *More meetings with local Indigenous communities near fires, to ensure that cultural sites are protected. Place EOCs [Emergency Operation Centres] in the Indigenous communities, when there is a fire nearby. I cannot [sic] think of any more, our crew was all Indigenous, so too was our crew leader.*

Respondent #711: *1. Revisit training for Indigenous firefighters. 2. Have more community involvement in decision making or at least have reps from Indigenous communities. 3. Find a way to motivate Indigenous firefighters to look at their work as a career instead of a quick pay cheque [sic].*

Respondent #1142: *Understand culture and customs. Willing to listen to Indigenous concerns or suggestions. Work with the Indigenous crew and communities.*

Actions <u>employers could have taken</u> for Indigenous wildland firefighters and fire operations staff to feel culturally safe or more welcomed and included (continued)

Recognizing and using traditional ecological knowledge – <u>retaining Indigenous-led/operated wildfire crews and contractors</u>:

Respondent #128: *To include or make an attempt to create Indigenous fire crews on a provincial level…instead of relying solely on municipal fire departments and government resources.*

Having a respectful work environment – <u>maintaining a work ethic and professional conduct</u>:

Respondent #248: *1. Emergency and life threatening situations aside, to have acknowledgement and recognition that I am here to help protect the land, rather than treat me as a trespasser that does not belong (not all situations have been like this). 2. To realize that in these situations (wildfires) we act as one community, protecting an entire area as a collaborative team (rather than emphasizing our differences and different homes).*

Having a respectful work environment – <u>participating in respectful workplace training</u>:

Respondent #1058: *1. prayer ceremonies, prior to a big Fire tour, out of territory. Ceremonies are something we…actively do. 2. Cultural diversity training….set up cultural diversity training through…university, but [provincial/territorial government] did not [sic] wish to go through with it. 3. training of Indigenous cultural teachings and practices. i.e.. (cultural burning).*

Respondent #1547: *Training and procedures [sic] when finding items of cultural significance, welcome from local Indigenous people into their area and a quick briefing on their culture.*

Having a respectful work environment – <u>having equal treatment in the work environment</u>:

Respondent #531: *Treat people the way you would like to [be] treated. Be open-minded toward peoples' beliefs.*

Having a respectful work environment – <u>having supportive leadership and management, particularly Indigenous leadership (e.g., supervisors) by engaging in clear and respectful two-way communications</u>:

Respondent #852: *Our methods are to involve the community, which is Indigenous, so there is not an asymmetrical relationship from a 'white' manager to community members. If there was a mix of personnel, I think it would be important for us that Indigenous people lead the effort, as people who understand the values of the land. Utilizing the skills and knowledge of Indigenous people to be leaders is also valuable and contributes to safety. And creating space to be listened to - to be adaptive is important.*

Respondent #1142: *Understand culture and customs. Willing to listen to Indigenous concerns or suggestions. Work with the Indigenous crew and communities.*

Respondent #1768: *To make you [sic] feel welcome and make you feel your opinions matter. Respected. Able to go in and speak to a supervisor without feeling intimidated [sic].*

7.3.5 Involvement

Involvement pertains to the extent to which occupational health and safety are a focus for all workers, particularly in terms of worker empowerment – having a voice in occupational health and safety decision-making, being accountable for their actions, and taking pride in their organization's occupational health and safety record.[48] For the purpose of this project, the term "involvement" also included co-creating a

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[48] Zohar, D. & Luria, G. (2003). The use of supervisory practices as leverage to improve safety behavior: A cross-level intervention model. *Journal of Safety Research, 34*, 567-77. 10.1016/j.jsr.2003.05.006.

respectful and safe work environment, and fostering innovation to enhance occupational health and safety practices.

During their most recent experience in wildland firefighting and/or wildland fire operations (excluding the COVID-19 pandemic from December 31, 2019 to present), respondents rated **involvement** for occupational health and safety on a five-point scale, ranging from "strongly disagree" to "strongly agree."

Respondents indicated the following with regards to having *involvement* in occupational health and safety:

- Agreed that they contribute to the overall safety in their work environment (97 out of 106; 92%; Mean = 4.48/5).

- Agreed that crew members/wildland fire operations centre co-workers are encouraged to express new safety ideas and suggestions (86 out of 107; 80%; Mean = 4.03/5).

Respondents shared stories about how involvement in wildland firefighting and wildland fire operations often involves team work and engaging in shared experiences (includes participating in cultural practices together). These relational and experiential activities are viewed as ways crews/staff can support team cohesion as a means of creating a respectful and safe work environment.

Voices from the frontlines…

Ways that <u>crew members/co-workers</u> created a respectful and safe work environment

Respondent #154 (Team work and shared experiences – <u>participating in cultural practices together</u>): *Went to sweats together on days off, singing on base (hand drum).*

Respondent #412 (Team work and shared experiences – <u>participating in cultural practices together</u>): *We hold safety meetings/tailgate safety meetings….We have lunch/BBQ's for all staff once a month (due to COVID it has been on hold) bringing [sic] people together and not talk shop talk but other family/fun stuff. Meetings every week with staff (pulse check). Coffee/tea is often purchased for staff members.*

Respondent #522 (<u>Team work and shared experiences</u>): *We set boundaries from the get go. If I'm on a crew or leading one. I will get to know everyone and what they are about intimately as it's my duty. I am trusting them with my life, and they are doing the same. We owe it to one another. Fire is powerful this way. Fire always brings people together. Fire is sacred and must be treated with the highest respect. This teaching is fundamental and once understood is the foundation for a wonderful working environment. Fire is what brought us [sic] together.*

Respondent #947 (<u>Team work and shared experiences</u>): *In my experience, we formed meaningful relationships much like family and friends finding our own place among the other crews, we did more than just work together we ate together and cohabitated the same spaces and in order to work efficiently, we had to take care of and rely on one another mentally and physically and some times spiritually.*

Respondent #1711 (<u>Team work and shared experiences</u>): *We did things as a crew, took the time to know each other, became a family away from home.*

Overall, with regards to occupational health and safety, respondents reported very positive experiences with organizational characteristics such as leadership and management commitment, communications and reporting, supportive environment, and involvement. Having said that, with regards to cultural safety in relation to occupational health and safety, more should be done to acknowledge and implement ways to

create a respectful and safe work environment for Indigenous wildland firefighting personnel. This includes, but is not limited to,

- recognizing the mission critical role of supervisors (e.g., crew leaders, wildland fire operations centre supervisors) in creating a welcoming and inclusive work environment;

- demonstrating fierce and passionate leadership through promoting team work and facilitating a sense of belonging, supporting diversity and inclusion;

- treating one another as equals; and

- motivating and supporting crew members and staff.

Along with supervisors, crew members/co-workers are also instrumental in creating a welcoming and inclusive environment for Indigenous wildland firefighting personnel with notable competencies that relate to

- recognizing and demonstrating mutual trust, honesty, fairness, and understanding (includes openness to the use of Indigenous cultural practices);

- participating in team work; and

- engaging in shared experiences (includes participating in cultural practices together).

These relational and experiential activities were viewed as ways for supervisors and crews/staff to co-create a supportive environment and involvement ensuring cultural safety in the context of occupational health and safety.

Strategic communications with crew leaders/supervisors and crew members/co-workers was deemed another important dimension to cultural safety in relation to occupational health and safety. Again, supervisors were viewed as pivotal in promoting two-way communications with their teams and vice versa. This included actively listening by reserving judgment to consider all ideas of the crew/staff to enhance decision-making and problem solving in wildland fire operations often using clear and prompt top-down and horizontal communications (e.g., debriefings and fireside chats) in creating a respectful and safe work environment.

7.3.6 Training and Development

For this project, training and development included understanding the access, level, and type of safety-related training and development for wildland firefighting personnel.

During their most recent experience in wildland firefighting and/or wildland fire operations (excluding the COVID-19 pandemic from December 31, 2019 to present), respondents rated *training and development* pertaining to occupational health and safety on a five-point scale, ranging from "strongly disagree" to "strongly agree."

Respondents indicated the following with regards to accessing *training and development* in occupational health and safety:

- Agreed that they were confident about their job requirements (91 out of 106; 86%; Mean = 4.22/5).

- Agreed that compared to their co-workers, they were highly skilled in their job (81 out of 105; 77%; Mean = 4.12/5).

- Agreed that Indigenous instructors are valuable to wildland fire operations training (77 out of 107; 72%; Mean = 4.03/5).

- Agreed that their wildland firefighting training was adequate (76 out of 106; 72%; Mean = 3.81/5).

Specialized Training

LACES. During their most recent experience in wildland firefighting and/or wildland fire operations, 100 out of 107 respondents (approximately 93%) were familiar with the term "LACES – Lookout, Anchor Points, Communications, Escape Routes, and Safety Zones." The LACES acronym is associated with the fundamental wildland fire safety system used across Canada which began in 2001.[49] The other respondents (7 out of 107; 7%) indicated that they were not familiar with the LACES term or don't recall this acronym. For these respondents, they may have engaged in wildland firefighting and/or wildland fire operations prior to 2001 and thus, may have not necessarily been exposed to this mnemonic device (i.e., a system such as a pattern of letters, ideas, or associations which assists in remembering something). At the same time, there appeared to be little difference in familiarity with LACES between respondents whose careers began before and after the year 2000. For the 50 respondents in the earlier cohort (before 2000), 45 (90%) reported familiarity with LACES, compared with 54 out of 56 (96%) respondents in the later cohort (post 2000). Awareness of LACES did not seem to vary significantly by crew position, with 97% of crew leaders and 92% of crew members reporting familiarity with the term.

Wildland Fire: Safety on the Fireline - Interactive Online or Multimedia CD-ROM Training. Sixty-two out of 107 survey respondents (58%) reported that they completed *Wildland Fire – Safety on the Fireline*, originally delivered via multimedia, CD-ROM-based technology beginning in 2000[50] or the web-based version of this course (Safety on the Fireline – S-134) made available through the Canadian Interagency Forest Fire Centre (CIFFC) circa 2012.[51]

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[49] Alexander, M.E., & Thorburn, W.R. (2015). LACES: Adding an "A" for Anchor point(s) to the LCES wildland firefighter safety system, 121-144 In: B. Leblon and M.E. Alexander (eds.). *Current International Perspectives on Wildland Fires, Mankind and the Environment*. Hauppauge, New York: Nova Science.
&
Alexander, M.E. (2013). LACES license plates: a tool to promote wildland firefighter safety. *The Forestry Chronicle*, *89*: 581, 584.
&
Thorburn, R.W., & Alexander, M.E. (2001). LACES versus LCES: Adopting an "A" for "anchor points" to improve wildland firefighter safety. In: *Proc. 2001 International Wildland Fire Safety Summit (Nov. 6-8, 2001, Missoula, MT)*. Fairfax, VA: Int. Assoc. Wildland Fire, 13 [reprinted as Wildfire Safety Tip 5 by the Canadian Interagency Forest Fire Centre, Winnipeg, MB].
[50] Alexander, M.E., & Thorburn, R.W. (2001). Fireline safety training course available on CD-ROM. *Fire Management Today, 61*(2), 45.
&
Thorburn, R.W., MacMillan, A., & Alexander, M.E. (2000). The application of interactive multimedia CD-ROM technology to wildland fire safety training. *The Forestry Chronicle, 76*, 953-959.
[51] V. Demers, Training Manager, CIFFC, Winnipeg, MB, personal communication, July 15, 2021.

While *Wildland Fire – Safety on the Fireline* is a national certified training course available to wildland firefighters, it is not necessarily a nationally mandated course. This may explain why 45 out of the 107 respondents (42%) indicated that they had not taken either the CD-ROM or web-based versions of the course or don't recall. Similar to the degree of familiarity with LACES, some if not all of the respondents who answered "no" or "do not recall" may have had a wildland fire suppression career prior to 2000. Again, there were no noticeable differences between those respondents who began a career prior to 2000 and those who started later, with 62% of the earlier cohort (before 2000) and 55% of the later cohort (post 2000) having taken this training. Also, crew position appeared to have little effect on completion of the training course, with 75% of 28 crew leaders and 71% of 21 crew members reporting completion.

Respectful and Safe Work Environment

Respondents shared stories about engaging in workplace safety training and practices (both formal and informal) which includes following safety policies and procedures (e.g., codes of conduct, occupational health and safety regulations) and participating in equity, diversity and inclusion-related training (i.e., anti-harassment training, cultural awareness and sensitivity training).

Voices from the frontlines…

Ways that <u>crew leaders/wildland fire operations centre supervisors</u> created a respectful and safe work environment

Respondent #676 (Respectful and safe work environment – <u>following safety policies and procedures</u>): *My crew leader created a safe work environment by following LACES. I feel my crew leader also didn't [sic] try to over-work us and always made sure we were hydrated and fed.*

Respondent #1627 (Respectful and safe work environment – <u>participating in equity, diversity, and inclusion-related training</u>): *…respectful Indigenous Cultural Awareness and Sensitivity Training – safe work environment.*

Ways that <u>crew members/co-workers</u> created a respectful and safe work environment

Respondent #256 (Respectful and safe work environment – <u>following safety policies and procedures</u>): *Ensure staff take a harassment free and respectful workplace training and that agencies also have this policy. Should always be discussed during spring firefighting training, so all people (regardless of race or color) are made aware of and that this is to be respected and that there be a reporting process for situations - in my view, reporting is not done because of access to a computer, was working in the field when occurred and didn't want to cause issues at work.*

Occupational Health and Safety Resources

As previously mentioned, for this project, training and development included understanding the access, level, and type of safety-related training and development for wildland firefighting personnel. Two questions were posed about the types of organizations where respondents seek out (i) general occupational health and safety services, information, and related resources, and (ii) Indigenous-specific occupational health and safety services, information, and related resources.

Wildfire agencies and associated fire centres (at the provincial/territorial/national/international levels), employers[52], and provincial/territorial safety councils/boards[53] were the most frequently referenced organizations that respondents seek out to access *general occupational health and safety services, information, and related resources*.

The First Nations' Emergency Services Society (based in British Columbia) and Indigenous communities – includes local Elders (e.g., First Nations communities, Métis settlements) were the most frequently referenced organizations that respondents seek out to access *Indigenous-specific occupational health and safety services, information, and related resources*.

Overall, respondents indicated that they had positive training and development experiences with regards to occupational health and safety. From a training and development perspective, cultural safety in relation to occupational health and experience should be supported and enhanced in wildland firefighting and wildland fire operations across Canada through the use workplace safety training and practices (both formal and informal) which includes adherence to safety policies and procedures (e.g., codes of conduct, occupational health and safety regulations) and participation in equity, diversity and inclusion-related training (i.e., anti-harassment training, cultural awareness and sensitivity training).

7.3.7 Productivity

In general, sickness presenteeism involves attending work despite being ill and/or injured while sickness absenteeism refers to sick leave. Together, both sickness presenteeism and sickness absenteeism are an estimate of work performance (aka productivity). For this project, we wanted to understand why respondents went to work despite having an illness and/or injury both pre-COVID-19 pandemic and during the COVID-19 pandemic.

Sixty-eight respondents answered the question - *During your experience in wildland firefighting and/or other wildland fire operations (excluding the COVID-19 pandemic from December 31, 2019 to present), what were your reasons for going to work despite having an illness and/or injury?* The top three reasons focused on team involvement and engagement, livelihood, and work ethic.

Voices from the frontlines…

Pre-COVID-19 pandemic: Reasons for going to work despite having an illness and/or injury

Respondent #213 (Team involvement and engagement): *My Crew needed me to be there. I was an integral part of the crew and provided a piece of the puzzle to be a team.*

Respondent #1785 (Team involvement and engagement): *Worried I'd be judged by co-workers and supervisors for not just pushing through and toughening up.*

Respondent #228 (Livelihood): *Because you were told/encouraged not to call in sick. Calling in sick would ground your crew. If a member was sick and your crew was 1st up that day you would be put on (the) bottom of list. If you were selected for deployment and a member called in [sic] sick your crew would not be able to go on that deployment.*

Respondent #1026 (Livelihood): *Needing money to pay bills and buy food.*

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[52] Includes, but is not limited to, employer policies, regulation books, safety committees, (accessing) staff member expertise, in-house training, and human resource management.
[53] Includes, but is not limited to, workers' compensation boards, provincial/territorial labour ministries/departments, and (provincial/territorial) safety councils.

Pre-COVID-19 pandemic: Reasons for going to work despite having an illness and/or injury (continued)

Respondent #522 (Work ethic): *I have a obligation to perform [sic]. It is an expectation I have of others so I hold myself to the same standard. A call of duty. A calling from the heart that must be answered. Kind of a ying-yang idea or approach. The People's strength and resolve [sic] will always help me push through injury or illness. I pay it forward so one day others may follow. I got my injuries in the line of duty on the fire line and pushed through because I had too. It was a time of emergency and I chose to answer the call.*

Respondent #1066 (Work ethic): *Duty to serve. Feeling [sic] like I would let the team down if I did not go.*

As a comparison, a similar question was posed in one of the four optional sections of the online survey which focused on work-related experiences with the COVID-19 pandemic – specifically, *in 2020, what were up to three reasons for going to work despite having an illness and/or injury*? Similar to the pre-COVID-19 experiences expressed above, of the 22 respondents who answered this optional survey question, they also listed their top three reasons as being team involvement and engagement, livelihood, and work ethic.

Voices from the frontlines…

During the COVID-19 pandemic: Reasons for going to work despite having an illness and/or injury

Respondent #245 (Livelihood): *Money, Fear of loss of work and position.*

Respondent #1743 (Team involvement and engagement + work ethic): *7 other men needed money to provide for their families, I love leading fire crews and [sic] I love firefighting.*

With regards to sickness presenteeism, in 2020 (during the COVID-19 pandemic), the majority of respondents (18 out of 28; 64%) stated that they did not go to work ill and/or injured. Six respondents (21%) self-reported going to work 2 to 16 days despite being ill and/or injured, two respondents (7%) stated going to work 60 – 85 days ill and/or injured, while another two respondents (7%) self-reported going to work the majority of the calendar year (200 – 257 days) despite being ill and/or injured.[54]

With regards to sickness absenteeism, in 2020 (during the COVID-19 pandemic), most respondents (24 out of 29; 83%) stated that they were not absent from work as wildland firefighting personnel due to illness and/or injury from COVID-19. Three respondents (10%) self-reported being absent between 14 – 21 days in 2020, while two respondents (7%) stated being absent for 1 to 4 days due to illness and/or injury from COVID-19.

Similar questions on sickness presenteeism and sickness absenteeism were posed in the Langlois et al. 2012 report on Indigenous fire crews and emergency service personnel in British Columbia. Respondents in this study self-reported an average sickness absenteeism rate of 1.48 days and an average sickness presenteeism rate of 3.30 days.[55] Therefore, as a comparison to the TICS Inc. 2021 study, the sickness absenteeism rate was slightly lower for the TICS Inc. 2021 study (1.49 days for the Langlois et al. 2012 cohort vs. 0 days for the TICS Inc. 2021 Project Team cohort). The same can be said for the sickness presenteeism rate between cohorts (Langlois et al. 2012 cohort at 3.30 days vs. TICS Inc. 2021 Project Team cohort at 0 days).

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[54] Percentages may not add to 100% due to rounding.
[55] Langlois, B., Caverley, N., Krishnaswamy, A., MacGregor, J.N., Cunningham, J.B., Carlson, M., Eustache, J., & Strobl, K. (2012). *Final report – Safeguarding our indigenous communities: Measuring the health and safety culture of Aboriginal fire crews and emergency service personnel in British Columbia*. Kamloops, BC: First Nations' Emergency Services Society.

We are curious if the difference in the sickness presenteeism rate between the 2012 and 2021 cohorts related to: (i) access (or not) to worker benefits which may not be available to all wildland firefighting personnel (in particular, seasonal workers); (ii) real or perceived challenges in reporting workers' compensation and related illness/injury claims; and (iii) real and perceived stressors in being deployed and staying deployed during emergency situations (e.g., wildfires). We further explored this comparison between the 2012 and 2021 cohorts by comparing respondents' reasons for coming to work while they were ill and/or injured. Though cohorts' collective wording and ranking slightly varied, the spirit and intent of their reasons were similar.

Table 10. Sickness presenteeism comparison between 2012 Langlois et al. cohort and 2021 TICS Inc. Project Team cohort

Ranking	2012 Langlois et al. Cohort[56]	2021 TICS Inc. Project Team Cohort
1	Others were depending on me	Team involvement and engagement
2	I did not feel so badly that I could not come into work	Work ethic
3	Workload and limited employee benefit coverage	Livelihood

The number one reason expressed by the 2012 Langlois et al. cohort[57] and 2021 TICS Inc. Project Team cohort was an obligation to crew members/co-workers and leadership/management to come to work despite being ill and/or injured. The second reason was the self-perception that they were well enough to come to work which alluded to a particular work ethic held by respondents. The third reason represented the reality of some workers in the emergency management sector having to deal with crisis events while holding seasonal positions with limited or no employee benefit coverage to facilitate access to sick leave and related health benefits. Therefore, respondents from both cohorts indicated that, under these circumstances, they must continue to not impact their crew/co-workers and communities that they are safeguarding.

7.4 Work-Related Illnesses/Injuries

For this project, work-related illness/injuries were explored based on four factors:

- **Physical health (includes illness/injury type, severity, rate, reporting, and related supports).** Involves exposure to work-related physical health illnesses/injuries experienced by respondents in relation to specific events. *Note: Excludes the COVID-19 pandemic*.

- **Mental health (includes illness/injury type, severity, rate, reporting, and related supports).** Involves exposure to work-related mental health illnesses/injuries experienced by respondents in relation to specific events. *Note: Excludes the COVID-19 pandemic*.

- **General health (includes perceived health and well-being, health behaviours).** Involves the general (or overall) self-reported state of health of respondents; includes the type of health behaviours used when coping with stress.

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[56] Langlois, B., Caverley, N., Krishnaswamy, A., MacGregor, J.N., Cunningham, J.B., Carlson, M., Eustache, J., & Strobl, K. (2012). *Final report – Safeguarding our indigenous communities: Measuring the health and safety culture of Aboriginal fire crews and emergency service personnel in British Columbia*. Kamloops, BC: First Nations' Emergency Services Society.
[57] Ibid.

- **COVID-19 pandemic.**[58] Involves the effects and influences of the COVID-19 pandemic on various aspects of our life – including our work experiences and physical/mental/spiritual well-being individually and collectively.

7.4.1 Physical Health

In general, the majority of respondents who participated in this optional section of the survey indicated *"not applicable/did not experience the event"* or *"experienced the event but had no immediate illness/injury"* with regards to work-related illness and injury events (refer to Table 11), while no respondents indicated *"severe illness/injury experienced (missed 1 - 3 months of work)"* or *"extreme illness/injury experienced (missed more than three months of work)"* to the roster of work-related physical health-related illness and injury events.

Table 11. Physical health: Respondents who indicated "not applicable/did not experience the event" or "experienced the event but had no immediate illness/injury" regarding work-related illness and injury events

Work-Related Illness/Injury	Number of Respondents *"not applicable/ did not experience the event" or "experienced the event but had no immediate illness/ injury"*	Percentage (%)
Cancer (includes exposures to harmful materials and cancer-causing agents) associated, worsened or triggered by their work environment	29 out of 29	100%
Asthma (includes exposures to certain substances that trigger or worsen existing asthma) associated, worsened or triggered by their work environment	30 out of 30	100%
Contact with electric current (includes contact with power lines)	29 out of 29	100%
Contact with electric current (includes struck by lightning)	29 out of 29	100%
Caught or compressed by equipment or an object (includes being caught, compressed or pinched by equipment or object)	30 out of 31	97%
Lung disease – NOT asthma, allergies, cancer (includes chronic obstructive pulmonary disease; emphysema; exposure to biological agents, chemicals, or other substances like smoke exposure and air quality) associated, worsened or triggered by their work environment	29 out of 30	97%
Transportation accident (includes vehicle collisions, helicopter incidents)	29 out of 31	94%
Allergies (includes touching or inhaling certain materials that result in mild to life-threatening reactions affecting the eyes, skin, and/or respiratory system – nose to throat) associated, worsened or triggered by their work environment	29 out of 31	94%

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[58] COVID-19 was first detected in late December 2019 and was officially declared a pandemic by the World Health Organization on March 11, 2020. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

Work-Related Illness/Injury	Number of Respondents *"not applicable/ did not experience the event" or "experienced the event but had no immediate illness/ injury"*	Percentage (%)
Noise-induced hearing loss (gradual, leading to permanent hearing damage) associated, worsened or triggered by their work environment	27 out of 29	93%
Struck (e.g., struck by an object - includes being struck by a falling, rolling, flying or swinging object like a falling tree or branch; struck by a rolling rock; struck against an object – includes being struck against an object, stepping on an object)	27 out of 30	90%
Breathing difficulties (includes choking on an object or substance, depletion of oxygen from smoke exposure)	26 out of 30	87%
Burns (includes explosions, fire and hot materials, chemical burns)	26 out of 30	87%
Fall, either from the same level (falls/slips/trips to the ground or other surface) or to a lower level (falling down a hill or slope, falling off equipment)	24 out of 30	80%
Cuts, lacerations, and amputations (includes chainsaw accidents)	24 out of 31	77%
Contact with temperature extremes (includes exposure to extreme heat like heat exhaustion or cold like frostbite)	21 out of 30	70%
Overexertion (includes overexertion/muscle strain in lifting, pulling, pushing, holding, carrying, turning or throwing objects)	18 out of 31	58%

For respondents who indicated *"minor illness/injury experienced (received first aid or did not miss any days of work)" or "moderate illness/injury experienced (placed on light duty or missed less than one month of work)"* regarding work-related physical health-related illness and injury events, the following provides a snapshot of their experiences.

- *Contact with temperature extremes (includes exposure to extreme heat like heat exhaustion or cold like frostbite) –* 9 out of 30 respondents (30%).

  Respondents who experienced a minor to moderate illness/injury associated with contact with temperature extremes (includes exposure to extreme heat like heat exhaustion or cold like frostbite) indicated that they experienced this type of illness/injury twice (median) during their time as wildland firefighting personnel. Said respondents (6 out of 9; 67%) had the work-related illness/injury diagnosed by a healthcare provider. Respondents reported the work-related illness/injury to their employer with the majority of them (8 out of 9; 89%) indicating that they felt supported by their employer, yet the same number of respondents (8 out of 9; 89%) did not receive workers' compensation related to this work-related illness/injury.

- *Cuts, lacerations, and amputations (includes chainsaw accidents) –* 7 out of 31 respondents (23%)

  Respondents who experienced a minor illness/injury caused by cuts, lacerations, and amputations (includes chainsaw accidents) indicated that they experienced this type of illness/injury four times (median) during their time as wildland firefighting personnel. Said respondents (5 out of 7; 71%) did not have their work-related illness/injury diagnosed by a healthcare provider. Respondents (5 out of 7; 71%) reported the work-related illness/injury to their employer with the majority of

them (5 out of 6; 83%) indicating that they felt supported by their employer, yet all respondents (7 out of 7; 100%) did not receive workers' compensation related to this work-related illness/injury.

- *Overexertion (includes overexertion/muscle strain in lifting, pulling, pushing, holding, carrying, turning or throwing objects) – 13 out of 31 respondents (42%).*

  Respondents who experienced a minor illness/injury caused by overexertion (includes overexertion/muscle strain in lifting, pulling, pushing, holding, carrying, turning or throwing objects) indicated that they experienced this type of illness/injury twice (median) during their time as wildland firefighting personnel. Said respondents (7 out of 13; 54%) had their work-related illness/injury diagnosed by a healthcare provider. Respondents (10 out of 12; 83%) reported the work-related illness/injury to their employer with the majority of them (9 out of 11; 82%) indicating that they felt supported by their employer, yet the majority of respondents (11 out of 13; 85%) did not receive workers' compensation related to this work-related illness/injury.

- *Fall, either from the same level (falls/slips/trips to the ground or other surface) or to a lower level (falling down a hill or slope, falling off equipment) – 6 out of 30 respondents (20%).*

  Respondents who experienced a minor illness/injury caused by a fall, either from the same level (falls/slips/trips to the ground or other surface) or to a lower level (falling down a hill or slope, falling off equipment) indicated that they experienced this type of illness/injury three times (median) during their time as wildland firefighting personnel. Said respondents (5 out of 6; 83%) did not have their work-related illness/injury diagnosed by a healthcare provider. Respondents (4 out of 6; 67%) reported the work-related illness/injury to their employer, yet all respondents (6 out of 6; 100%) did not receive workers' compensation related to this work-related illness/injury.

7.4.2 Mental Health

In general, respondents indicated *"not applicable/did not experience the event"* or *"experienced the event but had no immediate illness/injury"* with regards to the following work-related illness and injury events:

Table 12. Mental health: Respondents who indicated "not applicable/did not experience the event" or "experienced the event but had no immediate illness/injury" regarding work-related illness and injury events

Work-Related Illness/Injury	**Number of Respondents** *"not applicable/ did not experience the event" or "experienced the event but had no immediate illness/ injury"*	**Percentage (%)**
Eating disorder (e.g., overeating, undereating to control weight or body image, excessive exercise to control weight or body image, avoiding food purposefully, forced vomiting, excessive use of laxatives) associated, worsened or triggered by their work environment	27 out of 30	90%
Post-traumatic stress disorder (uncontrollable replaying of traumatic events) associated, worsened or triggered by their work environment	26 out of 30	87%

Work-Related Illness/Injury	Number of Respondents *"not applicable/ did not experience the event" or "experienced the event but had no immediate illness/ injury"*	Percentage (%)
Sleep issues (e.g., night terrors, nightmares, unable to fall asleep, unable to stay asleep) that were associated, worsened or triggered by their work environment	26 out of 30	87%
Addiction (e.g., alcohol, tobacco, vaping, drugs, gambling, gaming, pornography) that was associated, worsened or triggered by your work environment	26 out of 30	87%
Anxiety (e.g., panic attacks, phobias, excessive worrying, sleep issues) that they believe were associated, worsened or triggered by their work environment	26 out of 30	87%
Depression (e.g., major depression, seasonal affect disorder, postpartum depression, overwhelming sadness) that they believe was associated, worsened or triggered by their work environment	24 out of 30	80%
Witnessing a work-related traumatic or stressful incident that caused lingering effects (e.g., night terrors, flashbacks, panic attacks)	23 out of 29	79%

Of note,

- *Suicidal thoughts related to their job (e.g., thinking about suicide, persistent, unpredictable).* Approximately 90% of respondents (27 out of 30) did not experience suicidal thoughts related to their job (e.g., thinking about suicide, persistent, unpredictable), while 7% (2 out of 30) experienced suicidal thoughts related to their job but had no immediate illness/injury.

- *Suicide attempt related to their job.* Twenty-nine out of 30 respondents (97%) did not experience a suicide attempt related to their job, while 1 respondent out of 30 (3%) experienced a suicide attempt related to their job but had no immediate illness/injury.

For respondents who indicated *"minor illness/injury experienced (received first aid or did not miss any days of work)"* or *"moderate illness/injury experienced (placed on light duty or missed less than one month of work)"* with regards to work-related illness and injury events, the following provides a snapshot of their experiences.

- *Witnessing a work-related traumatic or stressful incident that caused lingering effects (e.g., night terrors, flashbacks, panic attacks)* – 6 out of 29 respondents (21%).

Respondents who experienced a minor to moderate illness/injury with witnessing a work-related traumatic or stressful incident that caused lingering effects (e.g., night terrors, flashbacks, panic attacks) indicated that they experienced this type of illness/injury three times (median) during their time as wildland firefighting personnel. Said respondents (4 out of 6; 67%) did not have their work-related illness/injury diagnosed by a healthcare provider. Respondents (3 out of 6; 50%) reported the work-

related illness/injury to their employer, yet all respondents (6 out of 6; 100%) did not receive workers' compensation related to this work-related illness/injury.

- *Suicidal thoughts related to their job (e.g., thinking about suicide, persistent, unpredictable)*. Of note, 1 respondent out of 30 (3%) experienced a moderate illness/injury associated with suicidal thoughts related to their job. They were diagnosed by a healthcare provider; however, they did not report the illness/injury to their employer and did not receive workers' compensation related to their illness/injury.

For respondents who indicated *"severe illness/injury experienced (missed 1 - 3 months of work)"* or *"extreme illness/injury experienced (missed more than three months of work)"* with regards to work-related illness and injury events, the following provides a snapshot of their experiences:

- *Depression (e.g., major depression, seasonal affect disorder, postpartum depression, overwhelming sadness) that they believe was associated, worsened or triggered by their work environment* – 1 out of 30 respondents (3%).

  Of note, for respondents who experienced a minor, moderate or severe illness/injury with depression (e.g., major depression, seasonal affect disorder, postpartum depression, overwhelming sadness) associated, worsened or triggered by their work environment, they indicated that they experienced this type of illness/injury three times (median) during their time as wildland firefighting personnel. Said respondents (6 out of 6; 100%) did not report their illness/injury to their employer and did not feel supported by their employer. Three out of 6 respondents (50%) had their work-related illness/injury diagnosed by a healthcare provider while respondents (6 out of 6; 100%) did not receive workers' compensation related to this illness/injury.

It is interesting to note that respondents who indicated they experienced a mild to extreme illness/injury event reported physical health-related illnesses/injuries more often than mental health-related illnesses/injuries. Furthermore, there appeared to be a pattern whereby respondents who reported a given work-related illness/injury also felt supported by their employer. There were mixed results from respondents about whether they sought a diagnosis or not for a work-related illness/injury event (physical health or mental health-related). None of the respondents who indicated they experienced a mild to moderate illness/injury received workers' compensation. We are wondering if the documenting and reporting process and/or sickness presenteeism reasons (as stated earlier) influenced worker decision-making and related considerations to access and receive workers' compensation for the work-related illness/injury.

Seeking Mental Health Help and Support

Approximately 19 out of 29 respondents (66%) have not sought professional help for mental health issue(s) associated, worsened or triggered by their experience in wildland firefighting and/or wildland fire operations.

Of the respondents (10 out of 29) who indicated that they sought professional help for mental health issue(s) associated, worsened or triggered by their experience in wildland firefighting and/or wildland fire operations work, the top three individuals that they typically sought mental health help/support are: (1) counsellor; (2) Elder and/or physician; (3) family (includes parent), friend, spouse/partner. *Note. Respondents had the option of selecting more than one person they typically seek mental help/support from.*

Of the same respondents (10 out of 29) who indicated that they sought professional help for mental health issue(s) associated, worsened or triggered by their experience in wildland firefighting and/or wildland fire operations, their mental health counselling services were provided by their employer benefits plan or they paid out of their own pocket.

Crew/Co-Worker Work-Related Mental Health Incidents

While responding to or working during a wildfire event, 17 out of 29 respondents (59%) indicated "yes" or "possibly" that their wildland firefighting crew or wildland fire operations co-workers experienced a work-related mental health incident. Reported work-related mental health incidents focused on mental health crisis, workplace hazards (included close calls), and family/relationship issues.

Voices from the frontlines…

Crew/co-worker work-related mental health incidents

Eleven out of 17 respondents (65%) indicated their crew/wildland fire operations co-workers experienced a work-related mental health incident at the fire camp or on the fireline, with 13 out of 17 respondents (76%) indicating that they did not or do not recall if the work-related mental health incident that they described was actually reported.

Respondent #522 (Mental health crisis): *My co-worker had an episode causing (a) complete meltdown at a morning [redacted] meeting. We're still able to go on duty that day but we had to keep an eye on him to make sure he was really okay. They sent us out on the line anyway even though I disagreed. He wasn't present for the actual job most of the day we could tell his thoughts were [sic] somewhere else. He had something trigger him causing him to lash out and physically starting to hit [sic] the ground dirt around him. Injuring his hands in the process – rough.*

Respondent #73 (Workplace hazard): *Almost being trapped by a forest fire.*

Respondent #426 (Mental health crisis + family/relationship issues): *Times where you are providing mental health first aid to crew members - emotional issues at the home they were dealing with (e.g., numbness, anger, addiction, trauma). When drama from home life creeps into the fireline - worrying about these issues when they return back home - near or complete (mental health) breakdowns.*

Crew/Co-Worker Work-Related Serious Illness/Injury or Fatality

Twenty out of 29 respondents (69%) did not or do not recall that their wildland fire crew or wildland fire operations co-workers experienced a work-related serious illness/injury or fatality. Of those respondents who reported a crew/co-worker work-related serious illness/injury or fatality:

- The events were caused by being struck by an object (e.g., falling tree), transportation accident (e.g., helicopter crash) or a heart attack.

- Approximately 6 out of 9 respondents (67%) indicated that their crew/wildland fire operations co-workers experienced the work-related serious illness/injury or fatality on the fire line.

- As a result of the work-related serious illness/injury or fatality, all respondents (9 out of 9; 100%) indicated that the work-related serious illness/injury or fatality they described was reported, typically to leadership/management (includes supervisors).

- Approximately 5 out of 9 respondents (56%) indicated that the work-related serious illness/injury or fatality interfered with the safety of the crew during the fire ground operations and/or while responding to and from a wildfire event.

7.4.3 General Health

While employers have a responsibility to provide a safe and hazard-free workplace, they also have opportunities to promote individual health and foster a healthy work environment. As one of the four optional sections of the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* online survey, three questions were posed that focused on understanding respondents' general state of health as wildland firefighting personnel to inform health protection, health promotion, and prevention programs.

Using a five-point scale ranging from "poor" to "excellent", in general, respondents provided their perspective on their *physical health, mental health, and spiritual health*.

Table 13. Respondents' perspectives on their physical health, mental health, and spiritual health

Health Perspectives	Fair or Poor	Good	Very Good or Excellent
Physical health	8 out of 43 respondents (19%)	22 out of 43 respondents (51%)	13 out of 43 respondents (30%)
Mental health	9 out of 43 respondents (21%)	18 out of 43 respondents (42%)	16 out of 43 respondents (37%)
Spiritual health[59]	5 out of 43 respondents (12%)	21 out of 43 respondents (49%)	17 out of 43 respondents (40%)

Overall, respondents who participated in this optional section of the survey self-reported positive views about their physical, mental, and spiritual health as wildland firefighting personnel.

In terms of **health behaviours**, we posed the following question about coping with stress[60] in one of the four optional sections of the survey: *During your experience in wildland firefighting and/or other aspects of wildland fire operations, how do/did you cope with stress?*

The following table highlights the top five ways that respondents (43) coped with stress during their experience in wildland firefighting and/or other aspects of wildland fire operations. *Note. Respondents had the option of selecting more than one way they cope with stress.*

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[59] Percentages may not add to 100% due to rounding.
[60] People have certain ways that they respond to pressures in their work and/or personal life. These pressures (or stressors) are typically experiences which evoke physical and/or emotional response(s). Positive and negative events can generate stress which are experienced as discomfort, tension or negative affect.

Table 14. (Top five): Ways that respondents cope with stress

Ranking	Choice	Percentage	Count
1	Socializing with supportive friends and family	70%	30
2	Participating in a hobby (e.g., reading a book, playing games)	68%	29
3 (tied)	Getting proper exercise	65%	28
	Eating nutritious foods	65%	28
	Practicing good sleep (between 7 – 9 hours of sleep per night)	65%	28
4	Talking out the stressful issue with a crew member/co-worker	44%	19
5	Practicing cultural activities (e.g., traditional teachings, healing ceremonies)	42%	18

While survey respondents (43) generally indicated using positive coping strategies to alleviate stress during their experience in wildland firefighting and/or other aspects of wildland fire operations, it is worth noting that just outside the top five list as noted above, the sixth most frequent way that respondents coped with stress was engaging in substance use (e.g., smoking, recreational drug, alcohol use) – 16 out of 43 respondents (37%).

7.4.4 COVID-19 Pandemic

As previously mentioned, COVID-19 was first detected in late December 2019 and was officially declared a pandemic by the World Health Organization on March 11, 2020. Since then, COVID-19 continues to impact and influence various aspects of our life – including our work experiences and physical/mental/spiritual well-being individually and collectively.

We extended an invitation to respondents to complete an optional section of the survey about wildland firefighting and/or wildland fire operations during the COVID-19 pandemic.

- Twenty-nine out of 38 respondents (76%) who answered this question indicated that they worked as wildland firefighting personnel in Canada during the 2020 wildfire season. Of the respondents who were not wildland firefighters and/or wildland fire operations staff during the 2020 wildfire season, 8 out of 9 respondents (89%) indicated that it was not because they were worried about being exposed to COVID-19.

- Over 75% of respondents indicated the following about *how the COVID-19 pandemic was handled in their work environment during the 2020 wildfire season*:

  (i) COVID-19 was perceived as an occupational hazard (23 out of 29 respondents);

  (ii) their employer informed them about COVID-19 protocols (23 out of 29 respondents); and

  (iii) they were supported by their employer to follow COVID-19 protocols (22 out of 29 respondents).

- During the 2020 wildfire season and COVID-19 pandemic, 25 out of 29 respondents (86%) were deployed within their home province/territory.

- Thirty-five out of 47 respondents (75%) plan to engage in the 2021 wildfire season while the COVID-19 pandemic continues.

COVID-19 Pandemic vs. Pre-COVID-19 Pandemic

Work-related perceptions and behaviours:

Respondents (29) who worked as wildland firefighting personnel felt they were in an unsafe work environment twice (median) <u>during</u> the 2020 wildland fire season and COVID-19 pandemic. This was similar to respondents (89) who felt they were in an unsafe work environment the same amount of times (during their experience in wildland firefighting and/or wildland fire operations) <u>before</u> the COVID-19 pandemic.

On a five-point scale ranging from "very hazardous" to "very safe", respondents (18 out of 29; 62%) felt that their overall work environment was "safe" (Mean = 3.69/5) <u>during</u> the COVID-19 pandemic. Using the same scale, respondents expressed a higher degree of safety in their overall work environment <u>before</u> the COVID-19 pandemic (Mean = 4.25/5).

Of note, 21 out of 29 respondents (72%) self-reported that they did not experience mental health issues as wildland firefighting personnel <u>during</u> the COVID-19 pandemic. Of the respondents who did experience mental health issues as wildland firefighting personnel during the COVID-19 pandemic, 75% of them <u>did not</u> seek professional help for their mental health issues.

7.5 Work Experiences

Drawn from scholar-practitioner work in the health sector, in particular - Māori experiences in the healthcare system[61], cultural safety is generally viewed as a mindset or a way of being that is created by trusting, respectful people and communities. It involves a transformation of relationships where the needs and voices of Indigenous Peoples across the lifespan take a predominant role through the analysis of power imbalances, institutional discrimination, and colonial relationships as they apply to social policy and practice. [62,63] Cultural safety involves actively exploring and challenging complex power relationships including the ways that implicit bias, stereotyping, discrimination, and racism show up in our shared context.[64,65]

It is important to explore cultural safety as an occupational health and safety issue. As previously mentioned in this report, for people to feel valued in the work environment and succeed in their jobs, employers have a role in recognizing and respecting people's unique and diverse identities (e.g., race, religion, gender, socio-economic status, physical and mental ability, age, and sexual orientation). As such, cultural safety (in general terms) encompasses any action(s) in one's work environment where they feel respected, included, welcomed, and comfortable being themselves and expressing all aspects of who they are as a person.

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[61] For more information on cultural safety, view the seminal 1996 work of Elaine Papps and Irihapeti Ramsden - Cultural safety in nursing: The New Zealand experience. *International Journal for Quality in Health Care*, 8(5), 491-497. https://doi.org/10.1093/intqhc/8.5.491.
[62] https://www.fnha.ca/wellness/wellness-and-the-first-nations-health-authority/cultural-safety-and-humility
[63] https://www2.gov.bc.ca/assets/gov/family-and-social-supports/child-care/ics_resource_guide.pdf
[64] https://www.fnha.ca/wellness/wellness-and-the-first-nations-health-authority/cultural-safety-and-humility
[65] https://www2.gov.bc.ca/assets/gov/family-and-social-supports/child-care/ics_resource_guide.pdf

As a means of braiding cultural safety and occupational health and safety together in wildland firefighting and wildland fire operations, we explored *work experiences* across three distinct yet interrelated dimensions:

- **Perceived safety of overall work environment.** Respondents' overall perception of safety in their work environment.

- **Career-life experiences.** Career and life motivators, influencers, and concerns experienced by respondents.

- **Job satisfaction.** A pleasurable or positive emotional state resulting from the appraisal of one's job or job experience; results from a person's perception that their job actually provides what they value in the work situation.

Recognizing that much of the literature on cultural safety is based on experiences in the health sector, we were most interested in giving voice to Indigenous wildland firefighting personnel across Canada to define, in their own words, what the term "cultural safety" means to them. Based on the perspectives of 107 respondents, cultural safety means:

- *Honouring traditional ecological knowledge, cultural practices, and customs*. This includes, but is not limited to, protecting one's cultural identity and way of life (e.g., embracing cultural beliefs and values) and having a sense of belonging to others, land, and Mother Earth (e.g., protecting the land and artifacts); and

- *Having an inclusive and respectful work environment*. This includes, but is not limited to, not having to worry about racism, discrimination, harassment, and stereotypes in one's work environment; respecting people's cultures, values, and beliefs; looking out for another as a crew/team; and educating others about one's cultural identity/identities.

Voices from the frontlines…

One hundred and thirteen out of 141 respondents (80%) indicated that having a culturally safe work environment for Indigenous Peoples is important in the wildland firefighting and wildland fire operations professions in Canada, with the remaining respondents indicating "don't know/no opinion" (21 out of 141; 15%) or "no" (7 out of 141; 5%). From there, respondents (79 out of 141; 56%) indicated that they did not or do not know/have no opinion of their employer recognizing cultural safety for Indigenous wildland firefighting personnel.

What does "cultural safety" mean?

Honouring traditional ecological knowledge, cultural practices, and customs – <u>protecting one's cultural identity and way of life</u>:

Respondent #228: *"Cultural safety" means being aware of the other cultures we are working with and for. Recognizing the culture of the area we are deployed to and having respect for the home community and its [sic] members. Also being aware of my own culture and recognizing I deserve to be respected.*

Respondent #1530: *To be who you are.*

Respondent #1547: *Cultural safety means to me the ability to practice and openly discuss not only my own culture but also the culture of the peoples in whose [sic] traditional area I am working.*

What does "cultural safety" mean? (continued)

Honouring traditional ecological knowledge, cultural practices, and customs – <u>having a sense of belonging to others, land, and Mother Earth</u>:

Respondent #426: *Respect and caring for mother nature and the earth and animals; respect that fire is part of the (natural) circle and part of our life and well-being; fire is natural and culturally, we used [sic] to burn (cultural burning); taking for the land, so the land will care for you; respect for cultural sensitivity in access and use of land; recognize First Nations past and current fire management practices.*

Respondent #590: *To be able to participate in sweats, advocate for cultural site preservation, and exercise my right to participate in cultural gatherings and share knowledge. I liked that we were able to sing songs and drum, during off hours.*

Respondent #1114: *It means recognizing First Nations traditional lands and sacred territory, and identifying cultural sensitive areas with in that territory ex, burial grounds, cultural modified trees and pit houses etc. [sic] Furthermore, cultural safety is also how we treat and recognize First Nations traditions and culture, this means how we look at hiring FN [First Nations] people specifically in wild fire. I find that our peoples' culture and history is not taken [sic] into consideration [sic] when we interview our people.*

Inclusive and respectful work environment – <u>not having to worry about racism, discrimination, harassment, and stereotypes in one's work environment</u>:

Respondent #256: *To me, it means that my Indigenous culture is not demeaned nor degraded and that I can work alongside anyone of any race and not worry about anyone talking down to me or speaking to me like I am less than they are.*

Respondent #422: *It means that I am safe to be an Indigenous person in my organization and on the fireline with colleagues in other agencies. I should feel comfortable to share my Indigenous knowledge and be free of harassment.*

Respondent #947: *"Cultural safety" means to me the ability to practice my cultural rights and uphold my traditional beliefs in an inclusive atmosphere without prejudice or stereotyping from my superiors, bystanders and colleagues.*

Inclusive and respectful work environment – <u>respecting people's cultures, values, and beliefs</u>:

Respondent #1607: *Understanding that people have different views, beliefs, and therefore see the world differently. Due to this, we need to foster an environment were people feel that it is safe to share their perspectives. Essentially, all workers should feel comfortable, supported and respected.*

Inclusive and respectful work environment – <u>looking out for another as a crew/team</u>:

Respondent #70: *Looking out for one another. Making sure the team is set for all aspects of the day. Making sure the team has everything ready for the day (i.e. lunch, drinks, items for weather).*

Inclusive and respectful work environment – <u>educating others about one's cultural identity/identities</u>:

Respondent #1785: *Co-workers listening, validating, and respecting Indigenous perspectives when they are shared. Asking for Indigenous people's advice on matters.*

Similar to online survey respondents, the virtual circle process extended an invitation to participants to reflect on "cultural safety" and to then provide co-facilitators with their first thoughts on this term.

Reflections from the virtual circle fireside chats…

Note: For confidentiality purposes, pseudonyms have been used.

Safely practice and speak to cultural activities without fear of reprisal. **(Manny)**

Talk and say things about your culture with no back talk—no smart ass come back. Shouldn't matter about hair or jewelry, should be about work ethic. Should be comfortable being First Nations. Like Star Trek—all came from different nations, it didn't matter, it was just about getting the job done. **(Jerry)**

Fosters inclusion and a respectful workplace….wasn't always there. We were treated like worker bees. They used us for heavy work. We need to try to level the playing field….I don't think we are all safe yet. Those who can't read are less "safe" on the job because they can't read all the safety briefings. **(Peter)**

…make cultural sensitivity training included. So no judgements are made, but respect can be nurtured. **(Fred)**

Like survey respondents, virtual circle participants also viewed "cultural safety" as honouring Indigenous knowledges, cultural practices, and customs as well as having an inclusive, welcoming, and respectful work environment.

7.5.1 Perceived Safety of Overall Work Environment

Regarding respondents' overall perception of safety in their work environment, on a five-point scale ranging from "very hazardous" to "very safe", they expressed feeling "safe" in their overall work environment <u>before</u> the COVID-19 pandemic (84 out of 104; 81%; Mean = 4.25/5). Using the same scale, respondents (18 out of 29; 62%) expressed a slightly lower degree of safety in their overall work environment (Mean = 3.69/5) <u>during</u> the COVID-19 pandemic. In comparison to a similar question posed in the Langlois et al. 2012 report[66], Indigenous workers in the firefighting and emergency management sector in BC had a median rating of 4.00 indicating that they perceived the level of safety in the overall work environment to be "safe."

7.5.2 Career-Life Experiences

Regarding career-life experiences, we explored career and life motivators, influencers, and concerns of Indigenous wildland firefighting personnel in Canada.

Motivators

The top five reasons that respondents initially became wildland firefighting personnel are referenced in the following table. *Note. Respondents had the option of selecting more than one reason for becoming wildland firefighting personnel.*

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[66] Langlois, B., Caverley, N., MacGregor, J.N., Cunningham, J.B. (2017). *Final report – Indigenous leadership in structural firefighting: Developing tomorrow's leaders in British Columbia*. Kamloops, BC: First Nations' Emergency Services Society.

Table 15. (Top five): Initial reasons respondents became wildland firefighting personnel

Ranking	Choice	Percentage	Respondents
1	I like challenging and exciting work environments.	59%	98
2	I like helping people and communities in their time of need.	49%	81
3	I like being close to the land.	46%	76
4	I feel a responsibility to care for Mother Earth.	45%	74
5	A referral from a family member/friend.	40%	66

Of note, the sixth ranked reason that respondents initially became wildland firefighting personnel was they liked team-based work environments (64 respondents; 39%).

Key individuals who influenced respondents (158) to become wildland firefighting personnel were family members, friends, and/or wildland firefighters. Of note, the fourth highest ranked response was "none" – indicating that for some respondents (23%), they were not influenced by anyone to become a wildland firefighter and/or wildland fire operations staff, while the lowest ranked influencer were counsellors (e.g., guidance counsellor, career counsellor, school counsellor).

Work Concerns

On a five-point scale ranging from "not at all concerned" to "extremely concerned", respondents expressed the following ***top five work concerns***:

Table 16. Top five work concerns

Ranking	Reason	Mean (Average)
1	Lack of future career advancement opportunities (e.g., opportunities to move from seasonal to permanent wildland fire protection positions)	Mean = 3.30/5
2	Cultural safety and work-related discrimination in my workplace	Mean = 2.95/5
3	Long term impacts on my physical health from work-related exposure to hazardous and stressful conditions	Mean = 2.90/5
4	Long term impacts on my mental health from work-related exposure to hazardous and stressful conditions	Mean = 2.74/5
5	Illness and/or injury on the job	Mean = 2.73/5

On a five-point scale ranging from "not at all concerned" to "extremely concerned", respondents expressed the following ***top five work concerns from an occupational health and safety perspective***:

Table 17. Top five occupational health and safety-specific concerns

Ranking	Reason	Mean (Average)
1	COVID-19 pandemic in the fire camp	Mean = 3.61/5
2	More frequent extreme weather events (e.g., long, more intense fire seasons)	Mean = 3.15/5
3	Hazards on the fireline	Mean = 2.75/5
4	More frequent and more severe insect outbreaks[67] affecting forest fuels and overall work conditions	Mean = 2.71/5
5	Living in fire camp conditions (e.g., group sleeping, eating, and bathing)	Mean = 2.48/5

Career Advancement

Respondents (101 out of 180; 56%) stated that they received a promotion. In total, 313 reasons were reported, the most frequent being leadership skills (27%), job performance (26%), and education or training (24%). Seniority and willingness to relocate were cited less frequently.

Table 18. Reasons for (career) promotion

Choice	Percentage	Count
Demonstrated leadership skills (e.g., team builder, problem solver, motivator)	27%	85
Excellent job performance	26%	80
Education/training	24%	75
Seniority	13%	42
Willingness to move/physically relocate	9%	29
Other	1%	2
Total	100%	313

Career Departure

Forty-five (25%) respondents reported that they stopped being wildland firefighting personnel, having stopped in the year 2011, on average.

Forty-four respondents indicated a total of 80 reasons for stopping, the most frequent being a change in career focus (34% of all reasons), lack of career advancement opportunities (18%), and low pay (10%).

Forty-two responded when asked what was their *main* reason for stopping, the most frequent being a change of career focus (48%), lack of career advancement opportunities (21%), and a culturally unsafe work environment (10%).

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[67] E.g., mountain pine beetle.

During the virtual circles, participants were invited to reflect upon and share career opportunities and challenges for Indigenous Peoples in wildland firefighting. As a collective, access to job readiness skills development (includes literacy and pre-employment training) and education (includes professional development and training) and recognition of (work and land-based) experiences were notable themes during these fireside chats.

Reflections from the virtual circle fireside chats…

Note: For confidentiality purposes, pseudonyms have been used.

Education equals advancement….the higher ups really decide who gets what training and what fires you fight, which stunts growth because fire days are counted as seniority. Chances of getting where [manager's name] got to today are slim….Limited chance to advance today unless they have forestry training from college. Maybe 15 years before moving up. Like salmon swimming up the river—most drop off. **(Jerry)**

Education is valued over experience—that's not right….Interviewing process feels as though it is pushing out those Indigenous who want to be fire fighters. There are too many questions, and more questions to the questions and too much emphasis on the fitness test…it pushes them out. **(Howard)**

The more you educate yourself, the better off you are to move up the ladder….I think it is time that we as Indigenous people stand up and be part of the process. **(Peter)**

You have to be an exceptional person to get someone's attention….very different for Indigenous Wildland Fire Fighters today. The Indigenous crews aren't Indigenous anymore—they all come from universities now. They coach them on hiring and interview questions. Companies get 2-3000 applications for 2-300 jobs. You could have worked on hundreds of fires but if you can't fill out a piece of paper right, you are crapped right there….We need career building techniques and training for youth. **(Manny)**

Movement up comes with time and experience….Doors open for Aboriginal people if they want it—there is opportunity but there has to be interest. Once the door opened, I walked through it….We need more awareness of training for Aboriginal people—programs that allow them to show what they can do. And how far you can go…people need to know what they need to do to move up….Fitness test filtered out people who have fought fires for 20 years—something is wrong with that. They can't live in the bush or even know it, but they can pass the fitness test so they take away good jobs from those whose culture it is…who live here and know the land…but a fitness test starves them out. **(Phillip)**

People need to know their privilege—having 2 parents, getting to go to high school, having the money to go to university/college, they know how to navigate the world. Most Indigenous people don't have these privileges. There are additional social issues and struggles, issues that are intergenerational and they don't have role models to help them navigate the systems so it is much harder for them…they are left on their own and might not be able to break into the career….who gets to decide what is success? **(Fred)**

7.5.3 Job Satisfaction

As previously mentioned, job satisfaction typically refers to a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience; results from a person's perception that their job actually provides what they value in the work situation.

Respondents (53) rated ***job satisfaction*** on a five-point scale, ranging from "extremely dissatisfied" to "strongly satisfied." Survey respondents were in general agreement (47 out of 53; 89%) that they are "satisfied" or "extremely satisfied" with their experience in wildland firefighting and/or other aspects of wildland fire operations (Mean = 4.25/5). Three out of 53 respondents (6%) were either "dissatisfied" or

"strongly dissatisfied", while 2 out of 53 respondents (4%) were "neutral" and 1 out of 53 respondents (2%) did not know/had no opinion.[68]

Using the same five-point scale, ranging from "extremely dissatisfied" to "extremely satisfied", survey respondents (58) indicated the following about various factors pertaining to job satisfaction. Respondents were generally satisfied with the following factors:

- Amount of challenge in my job (Mean = 4.12/5)

- Feeling of worthwhile accomplishment from the job (Mean = 4.03/5)

- Independent thought and action they could exercise (Mean = 3.76/5)

- Personal growth and development from the job (Mean = 3.72/5)

- Overall quality of the supervision I received (Mean = 3.67/5)

- Job security (Mean = 3.51/5)

Of note, respondents were "neutral" regarding their satisfaction level with compensation (pay and benefits) (Mean = 3.14/5).

The following table outlines the top five reasons respondents (157) like being wildland firefighting personnel. *Note. Respondents had the option of selecting more than one reason why they like being wildland firefighting personnel.*

Table 19. (Top five): Reasons that respondents like being wildland firefighting personnel

Ranking	Choice	Percentage	Count
1	Opportunity to work outdoors	67%	105
2	Excitement associated with wildland firefighting and/or wildland fire operations tasks	63%	99
3	Opportunities for professional training and skills development	61%	96
4	Enjoy physical tasks associated with wildland firefighting and/or wildland fire operations	57%	90
5	Camaraderie with crew/co-workers (team atmosphere)	55%	86

7.6 Personal Values

In general, values are core beliefs that influence how we act, both in our personal and our professional lives. For the purpose of this project, "personal values" refers to responsibility for one's health and the use of Indigenous cultural teachings and practices.

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[68] Percentages may not add to 100% due to rounding.

7.6.1 Responsibility for One's Health

For this project, responsibility for one's health refers to respondents' perceptions of influence and control over their lives, particularly in the areas of personal health and well-being.

In one of the optional sections of the survey regarding general health, respondents (43) rated the responsibility for their own health on a five-point scale, ranging from "very much unlike me" to "very much like me." The majority of respondents (over 50%) expressed that the following personal health values were like them:

- I take care of my health as a matter of principle (Mean = 3.69/5).

- I am willing to make daily sacrifices for good health (Mean = 3.67/5).

Respondents were neutral with regards to the following personal health value: I struggle with my health (Mean = 2.60/5).

While employers have a responsibility to provide a safe and hazard-free workplace, they also have opportunities to promote individual health and foster a healthy work environment. Therefore, it is advisable for employers to take the time to understand the personal health values of wildland firefighting personnel to inform health protection, health promotion, and prevention programs.

7.6.2 Indigenous Cultural Teachings and Practices

For this project, Indigenous cultural teachings and practices involves the degree of engagement by respondents in traditional teachings and/or healing ceremonies.

In general, Indigenous approaches and corresponding ways of knowing related to healing and helping are often linked to the land through songs, stories, ceremonies, language, and writing. The recognition and utilization of culture as "good medicine" is reinforced in the works of Eduardo Duran, particularly as it relates to healing the soul wound.[69] Engaging in Indigenous cultural teachings and practices provides opportunities for many Indigenous Peoples to connect or re-connect with their identities by being on the land, speaking traditional language(s), and learning ways to live with and practice culture through the sharing of cultural skills and stories with and alongside Elders, Traditional Teachers, Healers, and Knowledge Keepers.[70]

During their experience in wildland firefighting and/or wildland fire operations (excluding the COVID-19 pandemic from December 31, 2019 to present),

- Eighty-one out of 123 respondents (66%) did not participate in *traditional teachings* with a traditional teacher/healer/Elder.

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[69] Duran, E. (2006). *Healing the Soul Wound: Counseling with American Indians and Other Native Peoples*. New York, NY: Teachers College Press.

[70] Ellerby J. (2001). *Working with Indigenous Elders: Based on the Teachings of Winnipeg-area Indigenous Elders and Cultural Teachers*. Winnipeg, MB: University of Manitoba Native Studies Press.
&
Wildcat, M., McDonald, M., Irlbacher-Fox, S., & Coulthard, G. (2014). Learning from the land: Indigenous land-based pedagogy and decolonization. *Decolonization: Indigeneity, Education & Society, 3*(3), I - XV.

Of the respondents who participated in traditional teachings, they engaged in teachings approximately 13 times – with 39 out of 43 respondents (91%) who engaged in traditional teachings stating that they felt traditional teachings were helpful to them.

- Ninety-two out of 123 respondents (75%) did not participate in *healing ceremonies* with a traditional healer/Elder.

Of the respondents who participated in healing ceremonies, they engaged in ceremonies 11 times – with 27 out of 31 respondents (87%) stating that they felt healing ceremonies were helpful to them.

Therefore, for respondents who self-reported that they participated in traditional teachings and/or healing ceremonies, they felt that these teachings and ceremonies were helpful to them. As a project team, we wondered if employers and/or related wildfire agencies facilitated access to Indigenous cultural supports/resources (i.e., traditional teachings and healing ceremonies) for Indigenous workers to aid them in their occupational health, safety, and well-being practices, would there be a higher degree of participation? As a follow up, if respondents' employers and related wildfire agencies officially recognized and funded these cultural supports/resources, would the frequency of engaging in Indigenous cultural practices increase?

As part of the virtual circles, participants shared their perspectives and experiences about incorporating culture or knowledge (i.e., Indigenous knowledge and/or cultural values) into their jobs. We acknowledge that there a lot of parallels to the use of Indigenous cultural teachings and practices in our earlier analyses and corresponding discussions in this report. In particular, this relates to defining cultural safety and creating a welcoming and inclusive work environment whereby leadership and management (includes supervisors) and crew members/co-workers recognize and partake in these practices in co-creating safe spaces to embrace unique and diverse identity/identities on the firelines and in wildland fire operations centers.

> ***Reflections from the virtual circle fireside chats…***
>
> Note: For confidentiality purposes, pseudonyms have been used.
>
> *All crews need training on cultural artifacts so that crews can recognize the significance of things they find… Need briefing from the communities on how to deal with artifacts…* **(Manny)**
>
> *Fire is a protector like water…Helps with the balance….Used fire to survive as a youngster—listening to grandparents and parents gathering their wisdom and knowledge to survive and help Mother Earth….Sweat lodge is about fire and water and being calm. I get that same feel as I approach a fire—the sweat lodge experience helps keep me calm.* **(Jerry)**
>
> *Cultural knowledge is very important for all! Teach about signs, that increases awareness….Important to know the local knowledge. Different communities burn for different reasons. Sometimes we need to let fires burn bigger rather than putting out. They need to teach about the signs and raise awareness of local protocols….If we look after the land, the land will look after us….We need firekeepers talking to various groups about prescribed burns, we know because we have the wisdom from our communities and knowledge-keepers.* **(Howard)**
>
> *Western science and Indigenous ways of knowing coming together is what we need.* **(Peter)**

Reflections from the virtual circle fireside chats…(continued)

Taught to live off the land. We talk to the Elders and listen to their stories. We can take some of what they offered and put it into our everyday jobs….Some Elders teach to leave fires to burn—to protect communities, to green up the grass. Forestry and big industry wants to put them out really fast. Some Elders can't read what they used to—because of climate change, digging, logging, so they can't see what they used to see. **(Phillip)**

The old people taught me so much—how to walk, how to survive in the bush, how to search for whatever you are looking for….Just what we do [bring traditional knowledge]—we bring ourselves into our jobs. **(Fred)**

8. Where Do We Go From Here?

As the first study of its kind, we hope to provide a unique contribution towards giving voice to Indigenous wildland firefighting personnel in Canada by presenting new insights that specifically explore cultural safety in relation to occupational health and safety based on the following dimensions:

- *self-identification (demographics)* – characteristics such as age, gender, geographic location, years of experience, position, and department type that aid in determining whether relationships exist within and between defined cultural safety and occupational health and safety outcomes

- *organizational characteristics* (e.g., leadership and management commitment, communications and reporting includes close calls, supportive environment, support for unique and diverse identities, involvement, training and development, productivity)

- *work-related illnesses/injuries* (e.g., physical health, mental health, general health, COVID-19 pandemic)

- *work experiences* (e.g., perceived safety of overall work environment, career-life experiences, job satisfaction)

- *(personal) values* (e.g., responsibility for one's health, Indigenous cultural teachings and practices)

In this section of the report, we share our collective thoughts on areas for future research along with program and policy recommendations.

8.1 Areas for Future Research

We acknowledge the breadth of the areas explored in this project that relate to cultural safety and occupational health and safety. Our intent was to support the sharing of preliminary data on this emerging national topic in a timely, accessible, and culturally-relevant manner. Therefore, moving forward, we recommend a focus on depth in future research and analysis regarding Indigenous wildland firefighting and wildland fire management. In particular, we noted the following emerging areas of interest in the wildland fire management professions: mental health needs and resources in Indigenous fire services; personal style of Indigenous wildland firefighting personnel; and giving voice to the experiences of new professionals - Indigenous wildland firefighting personnel with less than five years of experience.

8.2 Program and Policy Recommendations

In general, the wildfire service has an organizational culture that developed primarily from Western values as a paramilitary organization. Therefore, understanding Indigenous knowledges, ways of knowing, and values in relation to Western-based wildfire service culture is important in identifying revised leadership and management competencies that recognize and respect current and emerging opportunities in the recruitment and selection, training and development, worker-supervisor relations, promotion and career advancement of Indigenous Peoples in wildland firefighting and wildland fire operations in Canada.

Wildfire management across Canada would benefit from enhancing its capacity about where it situates itself in relation to Indigenous Peoples in the spirit of decolonization, truth and reconciliation.

Specifically, *how can wildfire agencies support Indigenous Peoples and their engagement with wildfire management as part of collective resilience across Canada?*

1. **Co-develop an Indigenous wildfire research agenda**. Develop a defined yet flexible research agenda (provincial/territorial and nationally) based on the priorities and interests of Indigenous wildland firefighting personnel.

2. **Co-create and fund culturally-relevant and customized career development programs**. Support enhanced participation by Indigenous Peoples across Canada in wildland firefighting and wildland fire operations in the areas of pre-employment training and job readiness skills development which dovetails with integrating Indigenous-informed approaches in recruitment and selection, training and development, recognition and retention (includes career advancement), and worker-supervisor relations (includes cultural safety and occupational health and safety competencies, confidential reporting processes, and team building).

   a. Includes creating Indigenous Youth training programs to introduce them to wildland firefighting and/or wildland fire operations work as early as Grades 8—10; thereby, encouraging Indigenous Youth to stay in school; continue training and learning about fire management, using both Indigenous science and Western science methods.

   b. Includes reviewing and transforming wildland firefighting personnel training and qualifications to ensure they are culturally-congruent to Indigenous participants, recruit and retain Indigenous instructors, and make awareness of Indigenous Peoples' rights and inherited fire responsibilities compulsory for all wildland firefighting personnel.

      In particular, it should be recognized that what often draws Indigenous Peoples to the field of wildland firefighting and wildland fire operations is not necessarily what employers are advertising from a recruitment perspective (e.g., adrenaline rush, paramilitary). Rather, career motivators include, but are not limited to, being in challenging and exciting work environments, helping people and communities in their time of need, being close to the land, feeling a responsibility to care for Mother Earth, receiving a referral from a family member/friend, and being in a team-based work environment.

   c. Includes accessing career-related training such as job interviewing skills and test-taking skills in basic wildland firefighting training programs. Furthermore, this includes fitness test preparation and strength training to ensure equitable opportunities to meet the wildland firefighting fitness requirements.

   d. Includes developing reporting mechanisms for wildfire agencies to include in their annual reports: (i) details about the number of self-identified Indigenous staff; (ii) details about current Indigenous employment targets, Equity/Diversity/Inclusion and/or Reconciliation work plans and other relevant policies; (iii) details about the amount and percentage of their annual budgets spent contracting services from Indigenous organizations (e.g., Indigenous-led wildfire crews); and (iv) types of Indigenous engagement and partnership approaches on wildfire management.

3. **Promote access and funding by wildfire agencies and related employers to Indigenous cultural supports/resources** (e.g., traditional teachings; healing ceremonies; Elder, Knowledge Keeper and Fire Keeper engagement)[71] to aid workers in connecting (or reconnecting) to occupational health, safety, and well-being practices. This includes access and funding to house a "centre for excellence" for a coordinated set of Indigenous-specific occupational health and safety services, information, and related resources to facilitate knowledge sharing, partnerships, and networking opportunities.

4. **Implement the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP) across orders of government**. Facilitate the inclusion of Indigenous Peoples in wildfire management.

   a. Includes engaging Indigenous Peoples and communities across Canada in wildfire management, devolving power and authority to Indigenous communities from a title and rights perspective in areas such as cultural burning.

   b. Includes learning directly from Indigenous Peoples and how their governance and knowledge systems relate to wildfire management. Many Indigenous Peoples have written about how their relationships with fire are fundamental to knowing and being in the world, including as the source of resilience, knowledge, and protocols.

5. **(Re)define cultural safety and a welcoming and inclusive work environment in the context of wildland firefighting and wildland fire operations**. Based on the summary of findings in this report, use this information to transform ways that wildfire work environments are or can be spiritually, socially, and emotionally safe, as well as physically safe for Indigenous Peoples; where there is no fear of reprisal, challenge or denial of identity/identities, of who they are, the gifts/strengths that they bring to wildfire management, and how they want to contribute and grow in the wildland firefighting and wildland fire operations professions. A suggestion offered during the virtual circles specific to this point was to ensure that there is a "community ambassador" for each wildfire crew and Indigenous community they are deployed to. The ambassador would reach out to the local Indigenous communities to be advised on cultural protocols and archaeologically sensitive areas, while ensuring that open two-way communications continued between wildfire crews and Indigenous communities while in each other's spaces.

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[71] Includes, but is not limited to, using a sweat lodge as a prevention and treatment strategy; integrating Indigenous recruitment and retention practices such as Talking Circles as a tool for decision-making and debriefings related to cultural safety and occupational health and safety issues; and increasing the awareness, recognition, and use of cultural burning techniques as a community protection and ecosystem stewardship tool.

9. Concluding Remarks

In closing, we are humbled by and grateful for the opportunity to facilitate giving voice to cultural safety of Indigenous wildland firefighting personnel across what is now called Canada. For people to feel valued in the work environment and succeed in their jobs, employers have a role in recognizing and respecting people's unique and diverse identities. This includes employers developing safeguards to protect the expression of peoples' identities and their needs, rights, and expectations in the work environment. *As such, it is important to explore cultural safety as an occupational health and safety issue*. In general, through an online survey and virtual circle sessions, respondents shared relatively positive experiences about their past or current roles in wildland firefighting and/or wildland fire operations. Having said that, it was apparent that more work should be carried out in wildfire agencies and related employers to (re)define cultural safety and develop or enhance tangible actions to co-create more welcoming, inclusive, healthier, and safer work environments for Indigenous Peoples.

The breadth of analyses shared in this report facilitates a "call to action" for wildfire agencies and related employers to explore and implement ways to demonstrate cultural safety throughout all facets of the work environment – recognizing that supervisors in particular (e.g., crew leaders and wildland fire operations centre supervisors) and crews/co-workers are major facilitators of whether workers have positive or negative experiences from cultural safety and occupational health and safety perspectives. Our suite of areas for future research and program and policy recommendations offer "food for thought" in terms of the possibilities for enhancing Indigenous Peoples' engagement in wildland firefighting and wildland fire operations over the coming years.

Wildfire near a roadway in the Columbia Mountains circa 2005. Photo credit: Brad McDonald

Appendix A: About the Project Team

TICS Inc. Team

Martin (Marty) Alexander, who is of Cherokee ancestry, began his career in wildland fire as a member of the Wyoming Interagency Hotshot Crew in 1972. He is a national and international acclaimed wildland fire behaviour research specialist and has received several major awards for his work (e.g., Wildland Fire Safety Award for his research and technology transfer efforts in fire behaviour and firefighter safety and the Ember Award for sustained excellence in wildland fire science from the International Association of Wildland Fire in 2003 and 2018, respectively; the Canadian Forestry Achievement Award in 2010 from the Canadian Institute of Forestry in recognition of his unique and outstanding achievements in forestry; and the James G. Wright Award for career achievement in forest fire research as recognized by the Canadian wildland fire community in 2016). Dr. Alexander retired from the Canadian Forest Service in late 2010 after nearly 35 years of service but continues to stay active in the field of wildland fire science, with a particular emphasis on the application of fire behaviour knowledge to ensuring the safety of wildland firefighters and members of the general public from wildfires. In this regard, he has authored numerous publications (see https://www.frames.gov/documents/afb/cv_alexander-martin-e.pdf). Dr. Alexander is a registered professional forester (RPF) with the Association of Alberta Forest Management Professionals and is currently the Proprietor of Wildland Rose Fire Behaviour, Leduc County, AB. Marty is a Subject Matter Expert/Advisor and Peer Reviewer for the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project.

Natasha Caverley holds a M.Ed. in Counselling Psychology and PhD in Organizational Studies from the University of Victoria. Natasha is a Canadian Certified Counsellor through the Canadian Counselling & Psychotherapy Association. Dr. Caverley is the President of Turtle Island Consulting Services Inc. in North Saanich, BC. Natasha is a multi-racial Canadian of Algonquin (Whitney and Area), Jamaican, and Irish ancestry. Dr. Caverley is the Principal Investigator for the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project.

Joe Gilchrist is a Traditional Fire Keeper in the interior region of BC (Secwepemc and Nlaka'pamux Nations) with over two decades of experience in cultural burning revitalization and wildland fire prevention training. Joe is a Traditional Fire Keeper and Peer Reviewer for the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project.

James (Jim) MacGregor is a Professor Emeritus in the School of Public Administration at the University of Victoria. Jim holds a M.A. in Psychology (University of Glasgow), M.Sc. in Psychology (University of Victoria), and PhD in Psychology (University of Victoria). Dr. MacGregor specializes in organizational psychology, cognitive psychology, and human factors. He has over 35 years of experience in pure and applied research in the areas of organizational psychology, cognitive psychology, program evaluation, and qualitative and quantitative research methods. Jim is the author or co-author of over 60 articles and technical reports. Dr. MacGregor is a Subject Matter Expert/Advisor and Peer Reviewer for the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project.

Brad McDonald (CFEI, CFII) is Métis and the owner of Protech Fire Inc. Brad is also a Fire/Arson Investigator with Calgary Fire Services with extensive experience in wildland and structural firefighting and incident management, training and program development (with the former Red River Rangers with Métis Nation BC). Brad holds multiple, National Fire Protection Association and National Association of Fire Investigators certifications and designations in the fire service. He has been declared an expert witness in Federal court in fire investigations origin and cause determination. Decorations and medals include federal exemplary service 25 years, provincial exemplary service 20 years, City of Calgary

exemplary service 12 and 15 years, Medal of Honour and accommodation for saving firefighters lives during firefighting operations. Brad is a Subject Matter Expert/Advisor and Peer Reviewer for the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project.

Kathy Offet-Gartner holds a PhD in Counselling Psychology and is a Registered Psychologist (in the Province of Alberta). With over four decades of experience, Kathy's research, writing, and counselling interests focus on the intersectionality of wellness (including mental health), career development, relationship, community, and culture. Dr. Offet-Gartner has worked in a variety of different settings and communities. Kathy's passionate about working cross-culturally, in particular with Indigenous Peoples. She is of Norwegian and of Sami descent and Kokum to three members of the Seton Lake Band in British Columbia. Dr. Offet-Gartner is the Co-Investigator for the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* Project.

Collaborator

National Indigenous Fire Safety Council Project/Aboriginal Firefighters Association of Canada was represented by Len Garis, Project Advisor. Len brings four decades of experience in fire services leadership and academia to this project. Mr. Garis specializes in evidence-based decision making with a focus on research design and evaluation.

NRCan In-Kind Subject Matter Experts/Advisors

Amy Cardinal Christianson. Amy is a Fire Social Scientist with the Canadian Forest Service (NRCan). In adherence with NRCan protocols and procedures, the project team extended an invitation for Dr. Christianson (as an in-kind activity) to share our online survey with her extensive Indigenous wildland firefighting and wildland fire operations network. Dr. Christianson's contributions to the project involved assisting the team in promoting synergies between this project and her areas of expertise and research which focuses on Indigenous wildfire management in Canada – e.g., contemporary perceptions of wildfire risk amongst Indigenous Peoples, wildfire mitigation and response in Indigenous communities, and firefighting employment.

David (Dave) Watson. Dave is a Field Economist with the Canadian Forest Service (NRCan). In adherence with NRCan protocols and procedures, the project team extended an invitation to Dave (as an in-kind activity) to provide expertise to the project team in the areas of questionnaire design review. Dave's areas of expertise focus on research in public values and attitudes about various forest management issues.

Appendix B: Key Terms

Biracial/multiracial person with Indigenous heritage. For this project, a person who is of two or more races with one biological parent or ancestor having Indigenous heritage from Canada.

Bullying. A repeated pattern of negative behaviour aimed at a specific person or group.

Close call. Otherwise known as a near-miss; a serious work-related illness/injury or near fatality that almost happened.

COVID-19 protocols. This includes, but is not limited to, regular hand washing with soap and water, wearing a mask, routinely cleaning and disinfecting frequently touched surfaces in the vehicles and flat surfaces in the work environment.

Culturally unsafe. Any action(s) in someone's wildland firefighting and/or wildland fire operations work environment that is an unsafe working condition and/or any action(s) one felt diminished, humiliated or disempowered their cultural identity and well-being as an Indigenous wildland firefighter and/or wildland fire operations staff person.

Employer. A person, company or organization that provides employment to wildland firefighters and/or wildland fire operations staff, including support personnel.

Healing ceremonies. Ceremonies that focus on traditional healing specialties addressing mental, emotional, spiritual, and physical aspects of health and wellness - facilitated by traditional healer(s)/Elder(s) who are recognized by their Indigenous community.

Healthcare provider. A person that provides a health care service to you; a person who takes care of your health and well-being.

Indigenous person. An individual who self-identifies as being of First Nations (status and non-status), Métis or Inuit heritage from the place that is now called Canada.

Mean. In general, the average of a data set which is computed by adding all numbers in the data set and then dividing by the number of values in the set.

Median. The middle value when a data set is ordered from least to greatest.

Sickness absenteeism. For the purpose of this project, this refers to self-reported sick leave.

Sickness presenteeism. These are situations where workers are physically at work but they are working less productively generally due to health or medical problems.

Standard deviation. The amount of variation of a data set relative to the mean (average).

Stress. People have certain ways that they respond to pressures in their work and/or personal life. These pressures (or stressors) are typically experiences which evoke physical and/or emotional response(s). Positive and negative events can generate stress which are experienced as discomfort, tension or negative affect.

Traditional teachings. In general, traditional teachings focus on cultural learning. This includes, but is not limited to, language revitalization, cultural teachings and protocols, land-based learning passed on by traditional Indigenous teachers, traditional healers and/or Elders who are recognized by their Indigenous community.

Type 1 crews. They perform initial attack and sustained action tasks on wildfires.

Type 2 crews. They are primarily used on sustained action wildfire incidents.

Type 3 crews. They are generally made up of temporary or emergency firefighters used for mop-up situations.

Unique and diverse identities. This includes, but is not limited to, race, religion, gender, socio-economic status, physical and mental ability, age, and sexual orientation.

Welcoming and inclusive work environment. In general, surroundings when working as wildland firefighting personnel where you feel (culturally) safe, respected, and comfortable being yourself and expressing all aspects of who you are as a person. It is where each person in the crew and/or workplace shares a sense of belonging with one another.

Workplace harassment. A form of discrimination; unwelcome conduct based on race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex (includes pregnancy), gender, socio-economic status, physical and mental ability, family status, marital status, age, record of offences, and/or sexual orientation of that person or of any other person. Workplace harassment may include a single incident or a series of events.

Workplace violence. Includes threatening behaviour such as shaking fists, destroying property or throwing objects; verbal or written threats (any expression of intent to cause harm); and/or physical attacks such as hitting, shoving, pushing or kicking.

Work-related serious illness/injury or fatality. A life threatening work-related illness/injury or in the case of a fatality – a work-related death.

Appendix C: Ethical Considerations

The *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* project was conducted within the norms of our team's respective ethics protocols. This ensured that informed consent was embedded throughout the entire research process which includes protecting participants from being identified and protecting their confidentiality. The following provides a brief overview of our project team's ethical considerations for this project.

- Participation was completely voluntary.

- Presentations, publications, and a final report will be provided to NRCan and our workplace partners (e.g., Aboriginal Firefighters Association of Canada/National Indigenous Fire Safety Council Project) as part of the knowledge sharing component of our project.

- No copies of individual survey responses will be given.

- Survey results will only be released in the form of statistical summaries (e.g., tables and graphs) that will not allow any individual to be identified.

- The data will only be used for analysis (technical and academic writing) and if possible, conference and related presentations to help individuals, groups, and organizations involved in occupational health and safety, wildland firefighting and other aspects of wildland fire operations, and Indigenous relations understand the experiences of Indigenous Peoples engaged in wildland fire suppression activities.

- In recognition of the cross-cultural nature of this project in relation to OCAP (ownership, control, access, possession), special care was taken in sharing results (from both the survey and virtual circles) that are not traceable to any particular individual and organization, redacting as needed.

- We are not in a position to directly influence decision-making and/or planning as it pertains to occupational health and safety and cultural safety for the Indigenous wildland firefighting and wildland fire operations population across Canada. However, it is our hope that the information gathered will be used in positive ways to inform decision-makers and assist them in making inclusive and informed decisions.

- Data are stored on password-protected computers.

- If at any point, respondents elected to withdraw from the project, they did so without consequences or explanations. If they withdrew from the study, their data were not used in any part of the data analysis and interpretation.

- The raw data from this project will be disposed of after the completion of the final report and academic publications pertaining to this project. The destruction date for this data is expected to be December 31, 2022.

- We recognized that some of the questions (in both the survey and virtual circles) may have required respondents to recall experiences that may be sensitive or difficult to deal with emotionally. If this happened, we encouraged them to contact a mental health specialist/ counsellor, their local Elder or Knowledge Keeper, or other support person. They could also consult: https://www.crisisservicescanada.ca/en/looking-for-local-resources-support/.

Survey-specific considerations

- When respondents completed their survey, their name was NOT connected to their answers in any way and their identity remains CONFIDENTIAL and will not be released to NRCan (funder) nor any other wildland firefighting associations, organizations, employers, companies, and communities.

- Individuals' decision to participate, or not, did not affect their employment in any way.

Virtual circles

- There were no right or wrong answers when responding to the co-facilitators' questions.

- Participants determined their own sharing level (in terms of self-disclosure) during the virtual circles.

- As a collective, virtual circle participants set the pace in terms of exploring the themes outlined in the virtual circle agenda. Therefore, the co-facilitators set aside 3 – 4 hours to carry out each virtual circle session which included nutrition/stretch/bathroom breaks.

- The virtual circle was NOT intended to be a complaint mechanism to identify individuals, employers or specific incidents that participants wanted to be resolved.

- For attending, actively participating, and sharing their knowledge and expertise with the co-facilitators during the virtual circle, honoraria were provided to participants after the completion of the sessions.

- The virtual circle sessions were recorded (audio/video recorded with note taking). The co-facilitators announced when recording officially commenced during the virtual circle sessions. Participants had the option of turning off their video function/web camera on their personal computers/devices during the sessions but remain actively engaged by audio only – if they so chose.

  Participants were also encouraged to change their screen name in the Zoom videoconferencing system and then enter their first name, initials or preferably, use a first name pseudonym (made up name or nickname).

- The project team may use information and/or short quotes from the virtual circle sessions, but that no information on participants' identity will be released unless they gave expressed written permission to use their name or initials. Instead, a pseudonym (made up name or nickname) was used.

- Participants' identity will remain CONFIDENTIAL and will not be released to NRCan nor any other identified workplace partners/project supporters (Aboriginal Firefighters Association of Canada/National Indigenous Fire Safety Council Project) and employers.

- No copies of the virtual circle notes or audio/video-recorded data from the virtual circle sessions will be given to NRCan or any other identified workplace partners/project supporters and employers.

Appendix D: Strategic Linkages

The following are strategic linkages between the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* project and notable (national and international) reports and declarations pertaining to emergency management and Indigenous relations:

- **2015—2030 Sendai Framework for Disaster Risk Reduction**. This international framework recognizes the important roles of Indigenous peoples in addressing disaster risk utilizing traditional knowledge and expertise on how to adapt, mitigate, and reduce risks from climate change and disasters. Notable excerpts from the Sendai Framework which emphasize Indigenous engagement include, but are not limited to, empowering local authorities, as appropriate, through regulatory and financial means to work and coordinate with civil society, communities and Indigenous peoples and migrants in disaster risk management at the local level; Indigenous peoples, through their experience and traditional knowledge, provide an important contribution to the development and implementation of plans and mechanisms, including for early warning.[72]

- **Standing Committee on Indigenous and Northern Affairs' June 2018 Report** *From the Ashes: Reimagining Fire Safety and Emergency Management in Indigenous Communities*.[73] Relevant excerpts are as follows:

    - "…collaborative agreements are necessary and important, as long as **the First Nations are meaningfully engaged at the time they are negotiated**" (p.13).

    - "**Capacity building and training are essential components of preparedness**. Capacity building involves training community members so that they know how to respond during an emergency as well as training and accrediting Indigenous emergency management officials. Ensuring that qualified officials are given the appropriate training in First Nation communities would build capacity so that First Nations are equipped to respond during an emergency" (p.16).

- **Truth and Reconciliation (TRC) Calls to Action**.[74]

    - *43. We call upon federal, provincial, territorial, and municipal governments to fully adopt and implement the United Nations Declaration on the Rights of Indigenous Peoples as the framework for reconciliation; and*

    - *44. We call upon the Government of Canada to develop a national action plan, strategies, and other concrete measures to achieve the goals of the United Nations Declaration on the Rights of Indigenous Peoples.*

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[72] https://www.unisdr.org/files/43291_sendaiframeworkfordrren.pdf
[73] https://www.ourcommons.ca/Content/Committee/421/INAN/Reports/RP9990811/inanrp15/inanrp15-e.pdf
[74] https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/indigenous-people/aboriginal-peoples-documents/calls_to_action_english2.pdf.

- **United Nations Declaration on the Rights of Indigenous Peoples - UNDRIP**.[75] The Government of Canada adopted UNDRIP without qualification alongside the Government of BC. The following sections of UNDRIP align with the *Giving Voice to Cultural Safety of Indigenous Wildland Firefighters in Canada* project:

  - *Article 3 - Indigenous Peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development.*

  - *Article 4 - Indigenous Peoples, in exercising their right to self-determination, have the right to autonomy or self-government in matters relating to their internal and local affairs, as well as ways and means for financing their autonomous functions.*

  - *Article 7(1) - Indigenous individuals have the rights to life, physical and mental integrity, liberty and security of person.*

  - *Article 10 - Indigenous peoples shall not be forcibly removed from their lands or territories. No relocation shall take place without the free, prior and informed consent of the indigenous peoples concerned and after agreement on just and fair compensation and, where possible, with the option of return.*

  - *Article 21(1) - Indigenous peoples have the right, without discrimination, to the improvement of their economic and social conditions, including, inter alia, in the areas of education, employment, vocational training and retraining, housing, sanitation, health, and social security.*

  - *Article 23 - Indigenous peoples have the right to determine and develop priorities and strategies for exercising their right to development. In particular, indigenous peoples have the right to be actively involved in developing and determining health, housing and other economic and social programmes affecting them and, as far as possible, to administer such programmes through their own institutions.*

  - *Article 24(2) - Indigenous individuals have an equal right to the enjoyment of the highest attainable standard of physical and mental health. States shall take the necessary steps with a view to achieving progressively the full realization of this right.*

  - *Article 29(1) - Indigenous Peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for Indigenous Peoples for such conservation and protection, without discrimination.*

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[75] http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf.