Northwest Territories 2023 Wildfire Response Review

Final Report

July, 2024

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Acknowledgement

To create this report, engagement sessions were conducted throughout the Northwest Territories; it is acknowledged with respect and gratitude that they took place on the traditional territories of three distinct Indigenous Groups across the territory: First Nations, Inuvialuit, and Métis.

Photo 1: Chief Drygrease Camp, Dettah (Source: MNP)

Executive Summary

The 2023 wildfire season in Canada was characterized by early onset, rapidly escalating wildfire activity, major societal disruption with more than 200 communities evacuated and smoke production impacting communities in Canada and the United States. In the Northwest Territories (NWT), 306 wildfires burned over 3.4 million hectares, 19 communities were evacuated, 138 temperature records were broken, approximately 80% of the community of Enterprise burned, and one life was lost. The severity and challenges of the unprecedented wildfire season necessitated an independent third-party review. This report contains the results of MNP LLP's (MNP) third-party review of the Department of Environment and Climate Change and the Government of Northwest Territory's preparedness for and response to the 2023 wildfire season. The report covers the following four topics:

A description of the 2023 wildfire season across Canada to provide context, and a description of the 2023 wildfire season in the Northwest Territories that highlights key events, decisions and actions.

An evaluation of the effectiveness of Environment and Climate Changes'preparedness and response to the 2023 wildfire season.

Observations, conclusions, and key recommendations to assist the Government of Northwest Territories in improving the effectiveness of its Wildfire Management Program moving forward into future wildfire seasons.

A detailed review of actions taken on two specific wildfires, ZF015-23 (Behchokǫ̀/Yellowknife and SS052-23 (Enterprise/Hay River), to identify potential issues and opportunities for improvement.

Review Approach

Key findings, recommendations and opportunities for improvement related to ECC's preparedness and response were identified using qualitative and quantitative methods and information obtained through primary and secondary research. In-person and virtual interviews and workshops were conducted within the five regions of the Northwest Territories from January to June 2024. 105 individuals, representing the Government of Northwest Territories, local authorities (including First Nations, Indigenous communities, and municipal governments) and fire resourcing supports from

other jurisdictions, participated in the review. A summary of an analysis of information from the interviews and workshops is provided in a What We Heard report (Appendix A).

A review of ECC policies, standard operating procedures and reports filed throughout the fire season was conducted to support the preparation of a preliminary timeline of events and to understand decision-making in relation to policies and procedures. Further research was done to understand decision-making through access to ECC's internal software systems and external weather and file modelling databases. A more thorough examination of the data specific to the SS052-23 and ZF015-23 wildfires was performed to inform the two case studies (available in Appendix B and C). Additionally, MNP LLP team members visited communities affected by structural losses, including Behchokǫ̀, Enterprise, and Hay River, to meet with individuals from local authorities.

Key Themes and Findings

The wildfire season began on May 4, marking the onset of an unprecedented period for the Northwest Territories. Weather conditions, such as record-breaking temperatures, prolonged drought, a two-month heatwave, and widespread lightning activity, accelerated an unusually early onset and drove a severe wildfire season. Despite efforts by ECC and emergency responders, who typically manage well and succeed under average wildfire conditions, the multiple concurrent wildfires, compounded by similar challenges in other jurisdictions, highlighted the limitations of the current wildfire management program to cope with the unprecedented conditions and subsequent wildfire behaviour experienced during the 2023 season. The evaluation of the effectiveness of Environment and Climate Change's preparedness and response to the 2023 wildfire season led to 11 key thematic findings which include:

Theme 1: Fire Behaviour Modelling - ECC faces uncertainty in its future wildfire modelling software choices. ECC used Firecast in 2022 and 2023 and opted out for 2024 due to various reasons, including cost increases. The department struggled with data accuracy, limited familiarity with open-source options, and staffing challenges, but indicated they are planning to enhance modelling capacity by training more employees and exploring new software options, including developing an in-house WISE-based tool. Strong fire behaviour modelling capability and state of the art modelling tools are essential to improving wildfire management outcomes.

Theme 2: Human Resources – Capacity - The number of wildland firefighters in the NWT declined over the past 32 years and the region's vast and sparsely populated forests and wildlands continue to require extensive wildfire management services. The 2023 wildfire season highlighted the NWT's reliance on imported resources, including crews, and specialist support. Despite resource sharing agreements with other jurisdictions, ECC needs to increase in-house capacity and technical capabilities. In addition, the high demands on firefighters led to significant mental and physical health challenges, which prompted ECC to explore new approaches to mental health support,

including culturally appropriate services. However, current training and resources were found to be inadequate during the 2023 wildfire season.

Theme 3: Human Resources – Training and Skills Management - The first wildfire of the season occurred before the earliest scheduled training session was completed, which resulted in untrained crews being deployed and previously trained crews being pulled from active duty – this affected fire suppression effectiveness and safety. ECC faced challenges with understaffing, inadequate skills tracking, and reliance on retired personnel who may not meet current fitness standards or be up to date with modern fire science, which emphasized the need for improved training and resource management.

Theme 4: Aviation Resources - During the 2023 wildfire season, Canada faced a shortage of essential aircraft and pilots, impacting wildfire management in the NWT and other regions. ECC's aircraft procurement system was found to be effective in challenging conditions. However, difficulties were encountered in matching aircraft type to requirements, with inadequate aircraft often dispatched for required tasks. The declaration of a territorial State of Emergency helped secure additional aircraft, but future improvements hinge on the new *Forest Act* and better training for pilots and aircraft managers. Addressing communication issues and documenting operational deviations for safety enhancements remains critical.

Theme 5: Equipment Management and Infrastructure – ECC faced challenges with inventory management during the 2023 wildfire season, in part due to underutilization and inadequate training on the ToolHound software. Throughout the season employees reported challenges with equipment tracking and overall shortages of critical equipment. Additionally, the wildfires damaged critical communication infrastructure, which caused significant disruptions in wildfire response and evacuation efforts as back-up systems and protocols were not immediately ready to deploy.

Theme 6: Incident Command System Discipline - Deviations from the Incident Command System during the 2023 season led to challenges in communication and resource deployment, although no direct outcomes such as structure losses were reported. Departures from ICS were found to be related to inadequate training, lack of experience, and the rapid changes and escalading stress experienced by all involved. The Government of Northwest Territories and Municipal and Community Affairs reported to have plans to increase Incident Command System training across the GNWT. Comprehensive training among all types and levels of resourcing, including wildland firefighters, is essential to improving coordination and effectiveness in future wildfire responses.

Theme 7: Policy, Strategy and Procedures - ECC discontinued printing hard copies of policy and SOP manuals several years before the 2023 season, moving all documents to

online access through SPARCS. Engagement participants noted widespread unawareness of current policies and SOPs, citing challenges in accessing documents online and a preference for hard copies due to ease of access. In addition to accessing these documents, concerns included outdated SOPs, lack of standardized formats, and incomplete documentation, impacting compliance and operational effectiveness during the 2023 wildfire season.

Theme 8: Wildfire and Wildfire Response Information Sharing - ECC utilized various platforms, including social media, to share updates and engage the public. However, challenges were encountered, including the spread of misinformation through personal social media accounts. This impacted public understanding of the wildfire situation and response, and increased ECC's workload to correct inaccuracies. Updating interdepartmental communication protocols, such as the Wildfire Event Notification Protocol between ECC and MACA, was reportedly underway to enhance timely communication and coordination for future wildfire responses.

Theme 9: Coordination with Municipal and Indigenous Governments - ECC faced challenges in communication and incident command structures with Municipal and Indigenous Governments, resulting in confusion over response priorities and roles. Issues included unclear assignments of firefighting duties outside municipal boundaries and a lack of Memoranda of Understanding (MOUs) to define responsibilities among stakeholders, exacerbating coordination gaps during evacuations and wildfire response efforts

Theme 10: Prevention and Community Protection - The roles and responsibilities for fire prevention and community protection projects were found to lack clarity, which necessitated careful budgeting and resource allocation to enhance and maintain these activities. ECC and the GNWT reportedly are exploring prescribed burns as a community protection method, involving Indigenous knowledge and collaboration, though these initiatives are still in the planning stages pending funding.

Theme 11: Budgeting and Reporting Structure – The current budgeting and reporting structure posed challenges to the management and administration of an active wildfire management program, such as inconsistent decision-making, unclear roles and responsibilities and difficulties with resource sharing between regions. This highlights the need for improved coordination and accountability across the program.

Recommendations and Opportunities for Improvement

From the 11 key themes and findings, 25 recommendations for immediate action and 17 opportunities for improvement to be considered over the next one to three years were developed. Most recommendations and opportunities for improvement are directed to Environment and Climate Change; however, some accountabilities identified rest with Municipal and Community

Affairs, the Government of Northwest Territories, or local authorities. Specific recommendations concerning SS052-23 and ZF015-23 are found in their respective case studies (see Appendices B & C respectively). The recommendations and opportunities for improvement are outlined below.

FIRE BEHAVIOUR MODELLING

Recommendation		Accountable Entity
1.1	Invest in wildfire behaviour modelling software that is current, nationally accepted, and well-supported.	ECC
1.2	Invest in systems and research to update fuel, weather, and topography data to the minimum acceptable scale.	ECC
1.3	Invest in training ECC's five wildfire behaviour modelling employees in the selected modelling software and continue with plans to expand the number of trained employees able to support wildfire behaviour modelling.	ECC
Opportunity for Improvement		**Accountable Entity**
1.A	Explore and determine the appropriate balance between increasing internal expertise and leveraging external resources for weather forecasting, as well as for long-term climate prediction.	ECC

HUMAN RESOURCES - CAPACITY

Recommendation		Accountable Entity
2.1	Expand culturally appropriate mental health services, tailor them for a firefighter audience, and promote them to wildfire management team members. Provide management and team leader-level training on trauma-informed practice and critical incident stress.	ECC & GNWT
2.2	Implement formal team appreciation initiatives that foster a culture of commitment and accountability. This will complement the informal appreciation and gratitude from senior ECC employees and team leaders.	ECC
2.3	Increase the organization's emphasis on recruitment and retention of firefighters and add a minimum of two firefighter crews, with associated overhead support, to better cope with the frequency of extreme weather events.	ECC
Opportunity for Improvement		**Accountable Entity**
2.A	Conduct scenario planning for resourcing, with extreme seasons like that of 2023 in mind, to test if the current structure of resource allocation and resource sharing agreements is sufficient, and better prepare for a range of possible outcomes.	ECC

HUMAN RESOURCES – TRAINING AND SKILLS MANAGEMENT

Recommendation		Accountable Entity
3.1	Compare and analyze the costs/benefits of starting crews earlier with one cycle of centralized training, against staggering crew start dates and doing multiple cycles of training. Consider expanding fire crew member responsibilities in the event of late wildfire seasons to avoid costly idle time. Weight the pros and cons, including budget implications, to inform decisions.	ECC
3.2	Further support and formalize the MACA cross-training initiative and secondment opportunities with other parts of ECC and GNWT departments to expand local capacity for IMTs, wildfire management roles, and support functions.	ECC
3.3	Develop a robust qualification, certification, and skills tracking system for ECC and other GNWT employees, as part of the GNWT Wildfire Management Certification and Qualification Manual (Government of Northwest Territories, 2021). Ensure the system is easily accessible, consistently updated, and diligently maintained.	ECC & GNWT
3.4	Develop an alternate fitness standard that can be applied to crew members that are designated as territorial resources only (i.e., not for export duty) to support coaching and mentoring local personnel.	ECC
3.5	Establish specialized wildfire operations teams to evaluate and oversee complex operations such as indirect attacks (a tactic of working away from the wildfire's perimeter to get rid of forest fuel in the fire's path).	ECC
Opportunity for Improvement		**Accountable Entity**
3.A	Implement a formal mentoring program allowing the transfer of skills and experience from veteran firefighters to recruits. Access mutual aid partners (other provinces and territories under a mutual aid agreement that promotes and facilitates emergency management assistance between provinces and territories before, during and after a major event) to import mentors if needed.	ECC
3.B	Continue the use of retired resources to supplement operational support when needed and ensure those individuals are placed in roles that they are qualified for and where their experience is current.	ECC
3.C	Promote export opportunities for employees to learn from experts in other jurisdictions, in turn increasing expertise within the NWT upon their return.	ECC

AVIATION RESOURCES

Recommendation		Accountable Entity
4.1	Participate, where possible, in the development of *Forest Act* regulations to help ensure clarity with respect to authority to access aircraft otherwise engaged in contractual obligations to provide services to another party. It is recommended the topic of pilots be included in these discussions.	ECC
4.2	Once *Forest Act* regulations have been developed and enacted, create an SOP to guide employees on the process of accessing aircraft and pilots otherwise engaged in contractual obligations to provide services to another party.	ECC
4.3	Develop an aircraft selection SOP or add aircraft selection guidance to the Aircraft Briefing Manual.	ECC
Opportunity for Improvement		**Accountable Entity**
4.A	Review procedures, training, and awareness regarding incident reporting.	ECC

EQUIPMENT MANAGEMENT AND INFRASTRUCTURE

Opportunity for Improvement		Accountable Entity
5.A	Create an online module completion tracking system to ensure the appropriate people are keeping up to date on required training for effective *ToolHound* use.	ECC
5.B	Assess ToolHound use across regions and warehouses to document practices and identify inconsistencies and opportunities for full feature implementation. Subsequently, create a strategy and implementation plan with clear timelines and accountabilities.	ECC
5.C	Continue efforts to establish and complete backup communications networks that are resilient to wildfire disruptions, along with related protocols and training. Implement remote network maintenance and backup systems.	ECC & GNWT

INCIDENT COMMAND SYSTEM DISCIPLINE

Recommendation		Accountable Entity
6.1	Ensure a broader range of ECC employees have appropriate ICS training.	MACA
6.2	Advocate for more ICS training in GNWT departments in addition to MACA and ECC, as well as within NWT communities.	ECC, MACA, GNWT & LOCAL AUTHORITIES
Opportunity for Improvement		**Accountable Entity**
6.A	Enhance training and education of the benefits to reporting ICS protocol non-compliances to enable reviews and learnings. Perform regular reviews/investigations of reported incidents and published findings summaries, along with lessons learned and opportunities for improvements.	ECC

POLICY, STRATEGY AND PROCEDURE

Recommendation		Accountable Entity
7.1	Review and modernize a comprehensive approach to SOP training and make physical SOP binders available at the start of each season. Track binder locations and use spot audits and other tactics to keep the binders updated. Circulate and clarify the online pathways for accessing SOPs and the Wildfire Strategy.	ECC
7.2	Review and modernize the AAR system, and implement processes to track, monitor and incentivize adherence. Use AARs to help create a Lessons Learned system.	ECC
Opportunity for Improvement		**Accountable Entity**
7.A	Conduct periodic audits related to policy and SOP compliance and engage employees from all levels to determine barriers and opportunities to awareness, education, and compliance.	ECC
7.B	Refine and finalize the Required Planning for Wildfire Events document and ensure that the integration with software is clear and consistent (i.e., EMBER or SPARCS).	ECC

WILDFIRE AND WILDFIRE RESPONSE INFORMATION SHARING

Recommendation		Accountable Entity
8.1	Reaffirm with the relevant government departments which department is responsible for responding to each of the various types of misinformation. Consider the different partners and employee counterparts that should be included in this conversation (political leaders, ECC, MACA, Health, etc.).	ECC, MACA, GNWT & LOCAL AUTHORITIES
Opportunity for Improvement		**Accountable Entity**
8.A	Continue investment in off-season community engagement and education events to provide the public with information on the responsibilities of various government agencies related to wildfire response, highlight proper communication channels, and improve understanding of how resources are deployed and prioritized.	ECC

COORDINATION WITH MUNICIPAL GOVERNMENTS AND INDIGENOUS GOVERNMENTS

Recommendation		Accountable Entity
9.1	ECC/FMD wildfire employees and community structural firefighters should engage with one another during the offseason in simulated wildfire scenarios for areas where jurisdiction is unclear. This will help all involved understand roles and responsibilities and support continuous improvement.	ECC & MACA

9.2	Develop MOUs between ECC, municipalities and Indigenous Governments to document future areas of responsibility, cooperation, and commitments.	ECC & MACA
9.3	Conduct Intergovernmental tabletop exercises to help ECC, Municipal Governments, and Indigenous Governments understand each other's concerns for their employees in the event of an evacuation order and predict the challenges that would cause confusion around the go/stay decisions for different groups (EMO, health, food service, and policing).	ECC, MACA, GNWT & LOCAL AUTHORITIES
Opportunity for Improvement		Accountable Entity
9.A	Continue discussion around "essential workers" to attain further clarity and formalize a definition.	ECC, MACA & GNWT
9.B	Continue the regular practice of assigning an ECC Agency Representative (AREP) to the local government's Emergency Operation Centre (EOC) when activated to increase info flow, improve relationships, and build trust.	ECC & MACA

PREVENTION AND COMMUNITY PROTECTION

Recommendation		Accountable Entity
10.1	Define and communicate roles and responsibilities for community protection projects and ensure that maintenance is planned into the future. Confirm who will initiate them, who will plan and resource them, who will conduct them, who will maintain them, and how the public can support them.	ECC & MACA
10.2	Consult with Municipal Governments, Indigenous Governments, and the public to bring the VAR registry up-to-date, inclusive of natural and cultural values, and ensure check-ups are conducted as expected.	ECC, MACA & GNWT
Opportunity for Improvement		Accountable Entity
10.A	Enhance promotional efforts of the FireSmart program for various audiences, including the use of fuel breaks.	ECC, MACA & LOCAL AUTHORITIES
10.B	Continue to explore the use of preventative forest management procedures, including prescribed burns with partners.	ECC

BUDGETING AND REPORTING STRUCTURE

Recommendation		Accountable Entity
11.1	Consolidate the regional and territorial aspects of the Wildfire Management Program into a single program with a single consolidated budget and financial reporting structure. The program's human resourcing, budgeting, and reporting should be consolidated under Wildlife and Forest Management, with regionally located resources reporting to the Forest Management Division. Budget allocations should be determined on an annual basis through a work planning and prioritization exercise.	ECC

Each theme has been further analyzed and key findings are presented in the following pages. Recommendations and/or opportunities for improvement are provided for each theme.

Source: MNP

Note to Reader

The scope of this Northwest Territories 2023 Wildfire Response Review (the review or the report) solely focuses on wildfire response efforts conducted in the summer of 2023 by the Department of Environment and Climate Change (Government of Northwest Territories). While mentioned periodically because of their close connection to wildfire management, emergency management topics, namely the evacuations and related communications, are outside the scope of this review.

The engagement part of this review, which included hearing from over 100 individuals directly connected with the response efforts, generated experiential, and perspective-based information. Bias is an inherent consideration for any subjective information, as is the context and time in which the information was collected. This qualitative information was important to understand the strengths and weaknesses of the response and provided a starting point to further explore findings using other data sources. Appendix A contains a What We Heard Report, which details findings from the engagement. This report builds on this information.

Abbreviations and Acronyms are used throughout this document. A Table of Acronyms is included to assist the reader.

Considering the unprecedented wildfire season, it is imperative to recognize the profound effects it had on individuals throughout the Northwest Territories. Furthermore, it is crucial to acknowledge the monumental efforts made by all parties involved in the response, as well as those offering direct and indirect support from within the Northwest Territories, across Canada, and internationally. Moreover, the prevalence of traumatic experiences among those directly involved in response efforts and others affected by the fires must be acknowledged. These acknowledgements form the basis for a comprehensive understanding of the challenges faced and the resilience demonstrated during trying times.

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Table of Aronyms

Acronym	Meaning
AAO	Aircraft Attack Officer
AAR	After Action Review
ADM	Assistant Deputy Minister
CIFFC	Canadian Interagency Forest Fire Centre
DO	Duty Officer
ECC	Department of Environment and Climate Change (Government of Northwest Territories)
EFAP	Employee and Family Assistance Program
EFF	Extra Firefighter
FBan	Fire Behaviour Analyst
FMD	Forest Management Division (Government of Northwest Territories)
GNWT	Government of Northwest Territories
ICS	Incident Command System
IG	Indigenous Government
IMT	Incident Management Team
MACA	Municipal and Community Affairs (Government of Northwest Territories)
MMO	Materials Management Officer
MOU	Memorandum of Understanding
NPL	National Preparedness Level
NRCan	Natural Resources Canada
NWT	Northwest Territories
PTSD	Post Traumatic Stress Disorder
RPWE	Required Planning for Wildfire Events
SPSA	Saskatchewan Public Safety Agency
SOE	State of Emergency
SOP	Standard Operating Procedures
TNWC	True North Weather Consulting
VAR	Values-at-Risk
WFMB	Wildlife & Forest Management Branch

WFX-FIT	The Canadian Physical Performance Exchange Standard for Type 1 Wildland Fire Fighters
WWHR	What We Heard Report
WISE	Wildfire Intelligence and Simulation Engine
ZF015-23	Behchokǫ̀/Yellowknife Wildfire
SS052-23	Enterprise/Hay River Wildfire

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Introduction

Purpose and Structure of the Review

This report contains the results of MNP LLP's (MNP) third-party review of the Department of Environment and Climate Change (ECC also the "Department"), Government of Northwest Territory's (GNWT) preparedness for, and response to, the 2023 wildfire season. It aims, through a review and critical analysis, to identify areas where efforts should be sustained and where potential improvements to wildfire management operations should be made. The report is a comprehensive review covering the following four topics:

1. A description of the 2023 wildfire season across Canada to provide context, and a description of the 2023 wildfire season in the Northwest Territories (NWT) to provide an understanding of events, insight into decisions and actions, and a picture of results.
2. An evaluation of the effectiveness of ECC's preparedness and response to the 2023 wildfire season through a formal program evaluation framework, including a review of budgets, administrative systems, standard operating procedures, and program structures.
3. Observations, conclusions, and key recommendations to assist the GNWT in improving the effectiveness of its Wildfire Management Program moving forward into future wildfire seasons.
4. A detailed review of actions taken on two specific wildfires, ZF015-23 (wildfire in Behchokǫ̀/Yellowknife) and SS052-23 (wildfire in Enterprise/Hay River), to identify potential issues and opportunities for improvement.

Review Methodology

The review design incorporated qualitative and quantitative approaches to evaluate ECC's preparedness and response. Data was collected through a document review, engagement sessions, wildfire-specific data review, and site visits, which were then analyzed to identify themes, findings, and recommendations. By employing these approaches, the review analyzes ECC's preparedness and response efforts to the 2023 wildfire season. The review passed through the following key phases:

December 2023	**Information Session**  MNP team members met with ECC and Forest Management Division (FMD) leadership in Fort Smith for a project briefing and broad overview presentation. A preliminary understanding of ECC-FMD and the 2023 wildfire season was established by walking through documents, software programs, and photos, and meeting various ECC employees.
January 2024	**Formal Information Request** A list of critical information and documents was drafted and requested from

ECC. The information request included documentation available on the Wildfire Management Program, including budgets, administrative systems, and program structures, as well as information on the 2023 wildfire season, and the response and feedback from employees and key identified stakeholders involved in the response efforts.

January-February 2024

Document Review

The purpose of the document review was to develop a clear understanding of the Wildfire Management Program and to begin to develop an understanding of the context of the 2023 wildfire season, including the weather and environmental conditions leading up to the season, the number and nature of wildfires during the wildfire season, and all aspects of the response to the wildfire season. The document review supported the preparation of a preliminary timeline of events, provided a foundation for interview and workshop guides, and additional data collection activities to support the development of a more comprehensive view of the conditions and response. The document review included but was not limited to the following documents:

- Standard Operating Procedure
- Policies and legislation
- After Actions Reviews
- Incident Action Plans
- Weather Maps
- Strategies
- Budgets
- Emails
- Photos

The document review also provided early insight into certain issues and areas of potential improvement.

February-April 2024

Engagement

The engagement process was designed to collect information and perspectives from GNWT employees, partners, and stakeholders involved in the wildfire response in the NWT. Engagement focused on ECC's response to the wildfires. Participants were encouraged to reflect on their involvement in related wildfire management activities; decision-making; communications; use of technologies, tools, and equipment; policies and procedures; and key collaborations and partnerships. Participants were also asked to provide their perspectives on the strengths of the response, as well as the challenges and opportunities for improvement. The design and facilitation of all engagement

activities included provisions for cultural safety and confidentiality. Participation was voluntary.

Engagement participants were identified by the Regional Office Managers of Forestry Operations and ECC project members. Participants included regional and territorial leaders, ECC and other GNWT employees, and select partners and stakeholders who were directly involved in wildfire management activities and connected to regional office employees. Considerable effort was dedicated to promoting psychological, mental health, and cultural safety during engagement sessions. Each participant was contacted via email or phone, provided information about the project, and invited to participate. Where necessary, multiple follow-up attempts were made. Throughout the process, additional representatives from key organizations, businesses, or governments external to the GNWT were identified as key partners and stakeholders, all of whom were contacted and invited to participate. Engagement activities included the following:

- Four in-person regional office workshops (Sahtu, Beaufort Delta, South Slave, North Slave)
- One in-person FMD workshop
- Three virtual workshops (Dehcho Regional Office employees, FMD employees, RCMP)
- Fifty-seven in-person and virtual interviews

Of the 141 people identified and invited to contribute their perspectives to the review, 105 individuals participated.

February-April 2024

Wildfire-Specific Data Review

MNP subject matter experts reviewed all data specific to each wildfire including information from the SPARCS system, True North Weather Consulting's 2023 Fire Weather Report, Natural Resources Canada (NRCan) weather maps, and other weather data information provided by ECC. Data was also derived from engagement workshops and interviews, Incident Action Plans (IAP), and After-Action Reviews (AAR). The wildfire-specific data review findings were reviewed with FMD and incorporated into the report.

February 2024

Site Visits

The MNP review team visited two NWT communities where the 2023 wildfires caused structural loss – Behchokǫ̀ in the North Slave Region, Enterprise and cabins to the west of Hay River in the South Slave region. These site visits allowed MNP to see the extent of the damage firsthand and to develop this report from a lens that grasped the significance and implications of the outcomes of the 2023 wildfires.

March 2024

Analysis and Further Research

The information gathered through the document review, engagement, wildfire-specific data, and site visits was analyzed and organized into themes and key findings. Additional research was conducted to gain a deeper understanding of the context of the 2023 season and its comparability to other jurisdictions.

March 2024

Preliminary Findings Presentation

A virtual, preliminary findings presentation was facilitated during the 2024 Spring Fire Meetings, which included participants involved in the Wildfire Management Program. The presentation outlined the key themes, findings, and recommendations from the document review, engagement, wildfire-specific data review, and site visits. The presentation provided insight into the preliminary findings to prepare for the upcoming season.

April 2024

Delivery of What We Heard Report

The What We Heard Report (WWHR) summarized the findings from the engagement with those who played a role in the NWT Wildfire Response during the 2023 wildfire season. The report was sent to FMD and ECC leadership to review and provide comments to MNP on missing or incorrect information. The What We Heard Report is available in Appendix A.

April 2024

Additional Information Request

Based on the validation that was required related to the findings of the WWHR, an additional information request was made to ECC. The information was used to provide additional context to the findings of the WWHR.

May-June2024

Production of the Final Report

The final Wildfire Response Review encompasses the information gathered and analyzed throughout all project stages. The review includes the evaluation of ECC's preparedness for and response to the 2023 wildfire season and identifies areas where successful efforts should be sustained and potential improvements to wildfire management operations should be made.

Data Analysis Methods

MNP conducted a detailed analysis of collected data and information to identify the unique and challenging circumstances of the 2023 wildfire season, responses that worked well, and areas requiring improvement. Thematic analysis was used to examine the information collected from engagement sessions. Thematic analysis is a standard qualitative research methodology that

involves coding or grouping text-based data (i.e., statements and/or observations) based on similarities. Once the information is coded, it is further refined and grouped to reveal key themes.

Information supporting the analysis was thoroughly reviewed and challenged against what MNP heard and understood about the themes to draft descriptions of the findings. The draft findings were tested with internal and team experts in relevant subject areas to identify where further data validation was required. The process led to the generation of a second data request, which enabled the validation and modification of the draft findings and recommendations.

Review Limitations and Terminology

The extreme nature of the 2023 wildfire season had far-reaching impacts across the NWT. The wildfires resulted in mass evacuations and disruptions to daily life including destabilized food supplies, loss of traditional foods, interrupted work capacity and communication channels, damaged infrastructure, and affected numerous other processes and systems within the region. While many of these interrelate and affect ECC's work, this review is limited in scope to the wildfire response efforts. While mentioned periodically because of their close connection to wildfire management, emergency management topics, namely the evacuations and related communications, are outside the scope of this report. Similarly, while the wildfires had impacts across Canada including capacity issues necessitating national and international assistance, this 2023 Wildfire Response Review is focused on the review of and recommendations of NWT wildfires for ECC. The intention is that the evidence collected for this review will inform and lead to broader recommendations that apply to the whole of GNWT or other specific departments.

MNP worked directly with ECC to identify and engage key partners and stakeholders. As availability to meet during the established engagement timeframe for the review was not possible for all potential participants, the scope of work for the review was expanded to include additional engagement activities to achieve increased participation.[1] Multiple efforts were made to reach the identified participants. Where it was not possible to engage with key individuals, all efforts were made to ensure proxies, or people in similar roles, participated to best reflect a diversity of perspectives in this review. In addition, several attempts were made to schedule and facilitate a workshop with fire crews; however, these efforts were not successful.

In conducting the documentation review, ECC was open, transparent, and cooperative in making all information and data available access to software systems. Where available, key, and relevant documents were provided to MNP, lending insight into the inner workings and guidelines of ECC. In several cases, the information requested could not be provided as the information or data did not exist within the file storage systems. In addition, ECC utilizes multiple systems to store files, resulting in difficulties at times in locating documents. Regardless of these limitations, every effort was made by ECC to provide MNP with the information requested, and both groups worked closely together to ensure the review was sufficiently substantiated.

[1] The expanded scope of engagement activities included three virtual workshops and 42 additional interviews.

The term "stakeholder" is used in this report to denote a representative from an organization, business, or government external to the GNWT. It is acknowledged that the term is problematic when referring to Indigenous Governments, or Rightsholders, and thus the document uses "partner" or other terminology as appropriate to refer to Indigenous Governments, other actors or interested parties involved in the response efforts.

The terms "personnel" and "employee" are both used in this report. For this review, employee is used to refer to a person who was employed by the GNWT or contracted to a position within the GNWT, either in a permanent, term, seasonal, relief, contracted or casual capacity during the 2023 wildfire season. The term "personnel" is used to refer to people within other organizations or governments who had a role in the 2023 wildfire response efforts.

Finally, the terms "engagement participant", "participant" and "interviewee" are used to refer to individuals that participated in engagement sessions with the MNP team. These sessions may be workshops, one-one-one interviews, and group debriefings or sessions.

ECC Organizational Context

Wildfire is a natural phenomenon that has shaped the territorial landscape for millennia.[2] The extensive expansion of human activities, including settlement, industry, and natural resource development, across the NWT, necessitates the management of wildfires to protect values and resources at risk.

The GNWT has been managing wildfire and forested landscapes for decades, building a history of expertise and technical skills at its core. ECC is responsible for wildfire management, through its Wildlife and Forest Management Branch – Forest Management Division (FMD). ECC employs a hybrid centralized/de-centralized model in delivering the Wildfire Management Program, dividing responsibilities between five separate regions, each with a regional office. FMD is responsible for strategy, and policy, and is the overall coordinator of the territorial wildfire strategy. The regions (Sahtu, Beaufort Delta, Dehcho, South Slave, and North Slave) are led by their respective Superintendents, who report to the Assistant Deputy Minister (ADM) of Regional Operations. Each regional office has a different complement of personnel including scientific and technical environmental and conservation specialists, renewable resource officers, technical wildfire specialists and other positions that have responsibilities beyond wildfire response for the entire year.

During the wildfire season, the five regional offices oversee the fire crews. Fire crews include seasonal and contracted crew members, along with other support positions, that are often filled by core regional employees. FMD supports the regions and orchestrates the response at the Territorial level. Specifically, FMD provides policy guidance and program development on activities such as training, wildfire prevention, wildfire science, resource sharing, decision support, and administrative and financial services. FMD is led by the Director of Forest Management, who reports to the ADM

[2] MNP also acknowledges that humans have historically utilized and controlled fire as a means of shaping and adapting the landscape to meet their needs for millennia.

of Forest Management. Together the FMD and the five regions coordinate their resources and advance the program, to respond to the annual wildfire season.

The Northwest Territories Forest Fire Management Policy (2005) (the Policy) is the primary guide to direct wildfire response, both at the territorial and regional levels, with ECC taking the lead role. The Policy states in section 53.04 that "fire should be recognized as a significant and natural phenomenon in the forest areas of the Northwest Territories"; and "the Department of Environment and Natural Resources may not extinguish every fire occurrence but will follow the principles and guidelines in this policy" (Government of Northwest Territories, 2005, pp. 1, 7). This approach is crucial to how ECC approaches wildfire management, recognizing that many wildfires will occur and will be left to naturally progress and extinguish. This level of wildfire tolerance is generally accepted due to the Territories' extensive land area, remote locations, and low population density.[3] Conversely, it is important to note that NWT's low population density often contributes to challenges in resourcing wildfire response and necessitates crew deployment prioritization based on what is available versus what is needed.

ECC developed a Values-at-Risk (VAR) system to help prioritize wildfire response efforts by considering societal, cultural, and natural value assets. Assets are placed on a hierarchy where human life is the top priority. Second to human life is property, meaning communities and other infrastructure. Third are natural resource values such as caribou habitat, protected ecosystems, and commercial timber areas. Cultural resource values are at the bottom level of the hierarchy, representing historic, archeological, and culturally significant sites. Once VARs have been considered and the most threatening wildfires have been confirmed, regions follow the NWT Wildfire Response Strategy (2020) (the Wildfire Strategy) in carrying out the response. The Wildfire Strategy outlines Standard Operating Procedures (SOPs), roles and responsibilities, and best practices when responding to a wildfire.

[3] The NWT's population density of 0.03 persons per square kilometre is significantly lower than other parts of Canada. Comparatively, Alberta has 6.4 persons per km2, Quebec has 6.5 persons per km2, and a smaller province, New Brunswick, currently has 10.5 persons per km2 (Harrison, Spalding, & Davidson, 2024; Behiels, 2024; Patterson, 2024; Statistics Canada, 2024).

2023 Wildfire Season in Canada

Table 1: Key Statistics for 2023 Wildfire Season in Canada

2023 Wildfire Season in Canada, Key Statistics	
Number of Fires	7,131
Area Burned	17,203,625 ha
Community Evacuations	200
Lives Lost	8

Sources: (Jain, et al., 2024) and (Canadian Interagency Forest Fire Centre Inc., n.d.)

The 2023 wildfire season in Canada was characterized by early onset, rapidly escalating wildfire activity, major societal disruption with more than 200 communities evacuated, and smoke production impacting communities in Canada and the United States. The Canadian 2023 wildfire season also included the widespread mobilization of domestic and international response resources. The Canadian Interagency Forest Fire Centre (CIFFC) played a central role in coordinating resource mobilization efforts among federal, provincial, and territorial agencies. CIFFC also facilitated the deployment of international personnel from various countries, including Australia, Brazil, Chile, Costa Rica, France, Mexico, New Zealand, Portugal, South Africa, South Korea, Spain, and the United States, with coordination support from the U.S. National Interagency Forest Fire Centre. In total, over 5,500 individuals from 12 countries and the European Union assisted (Jain, et al., 2024).

The "nationwide fire activity" affecting most of Canada's forested areas in a single year was unprecedented, lasting from late April to early November 2023, and impacting all provinces and territories. (Jain, et al., 2024). In total, over 7,131 wildfires burned 17.2 million hectares of land Figure 1 (Canadian Interagency Forest Fire Centre Inc., n.d.a), representing roughly 5% of Canada's forested area and exceeding the historic national average by more than seven times (Figure 2) (Canadian Interagency Forest Fire Centre Inc., n.d.a).[4] These wildfires were exacerbated by early snowmelt, sustained drought conditions, and climate change-induced factors, including record-breaking temperatures, and frequent lightning events (Jain, et al., 2024).

[4] Note the widely reported 18.5 million hectares burned was based on active fire data from fire management agencies, but a revised estimate was later released at 17.2 million hectares (source?).

Figure 1: Annual Wildfires in Canada

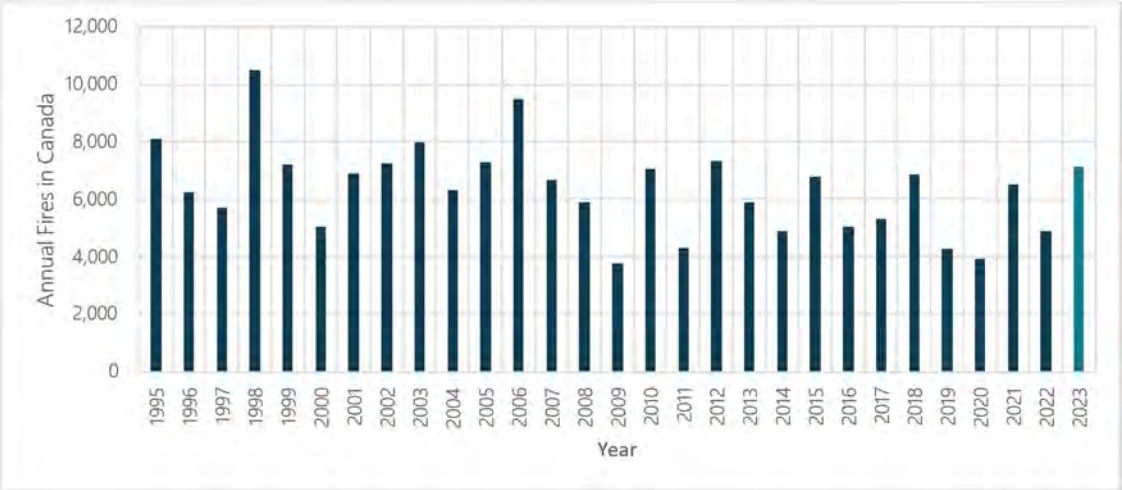
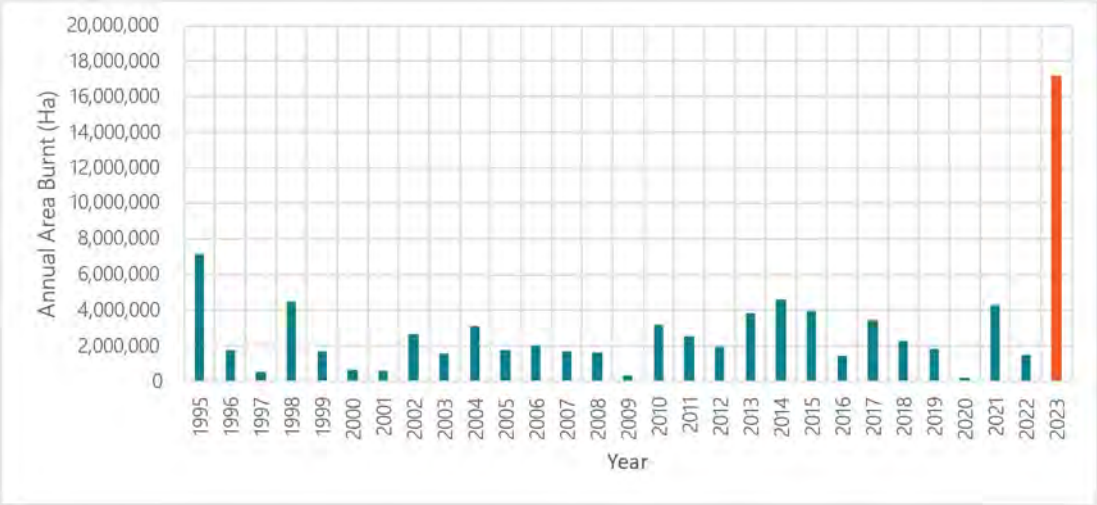


Figure 2: Annual Area Burned in Canada (By Year)



Although Canada's 2023 wildfire season exceeded the 1989 record for area burned, the number of wildfire ignitions was on the high side of average. The 2023 wildfire season in Canada was further characterized by a larger-than-normal proportion of large, intense fires. Such fires often start via lightning strikes in remote areas, with limited road access, low population densities, and abundant ground fuels (Jain, et al., 2024). In 2023, the 4,207 fires ignited by lightning accounted for 93% of Canada's total burned area, despite comprising 59% of fire ignitions (Canadian Interagency Forest Fire Centre Inc., n.d.a; Jain, et al., 2024).

Canada's 2023 wildfire season began in southern British Columbia and Alberta in mid-April. The severity of the Long Lake and Paskwa fires in Alberta led the province to declare a provincial state of emergency on May 6, 2023, (Government of Canada, 2023). These fires threatened communities and prompted evacuations. In Nova Scotia, fires resulted in the evacuation of multiple communities and the destruction of infrastructure. This was followed by massive wildfires in Quebec and Ontario

in June and July that produced smoke that spread across Canada and into the United States. In late July and August, British Columbia's Southern Interior experienced another intense wildfire season. At the same time, wildfires in the NWT intensified significantly (Canadian Interagency Forest Fire Centre Inc., n.d.a; The Weather Network, 2023).

Wildfires that started in May and June 2023 accounted for more than two-thirds of the total area. Human-initiated fires, while more numerous in the early wildfire season (April- May), comprised a smaller proportion of the total area burned. Across Canada, later-season wildfires were typified by lightning strikes and drought conditions (Jain, et al., 2024).[5]

Limited precipitation was reported in many regions across the country (Government of Canada, 2024). Throughout the spring and summer, temperatures were well above normal, exacerbating wildfire conditions, and prompting concerns about wildfire risk and air quality (Jain, et al., 2024). In response to the high wildfire activity, Public Safety Canada raised the National Preparedness Level (NPL) to Level 5 out of 5 on May 11, 2023. A Level 5 NPL was maintained until September 2023 (Whitman, Jain, & Northern Forestry Center, 2024; Canadian Interagency Forest Fire Centre Inc., n.d.).[6]

The rapid escalation of the NPL meant that wildfire response agencies were pressed into full service quickly in 2023, that resources across Canada were in high demand and limited, and that resources were being imported from out of the country. (Canadian Interagency Forest Fire Centre Inc., n.d.b).

Many parts of Canada encountered unusually warm and dry conditions. For example, Saskatchewan and Manitoba saw temperatures several degrees above average, with limited precipitation in their southern regions exacerbating drought conditions (Jain, et al., 2024). Several parts of British Columbia recorded their driest June on record, and southern Alberta received less than 40% of its usual precipitation. In contrast, central Canada, such as Ontario and Quebec eventually received more than 115% of their usual precipitation, helping to alleviate drought conditions in those areas (Agriculture and Agri-Food Canada, 2023).

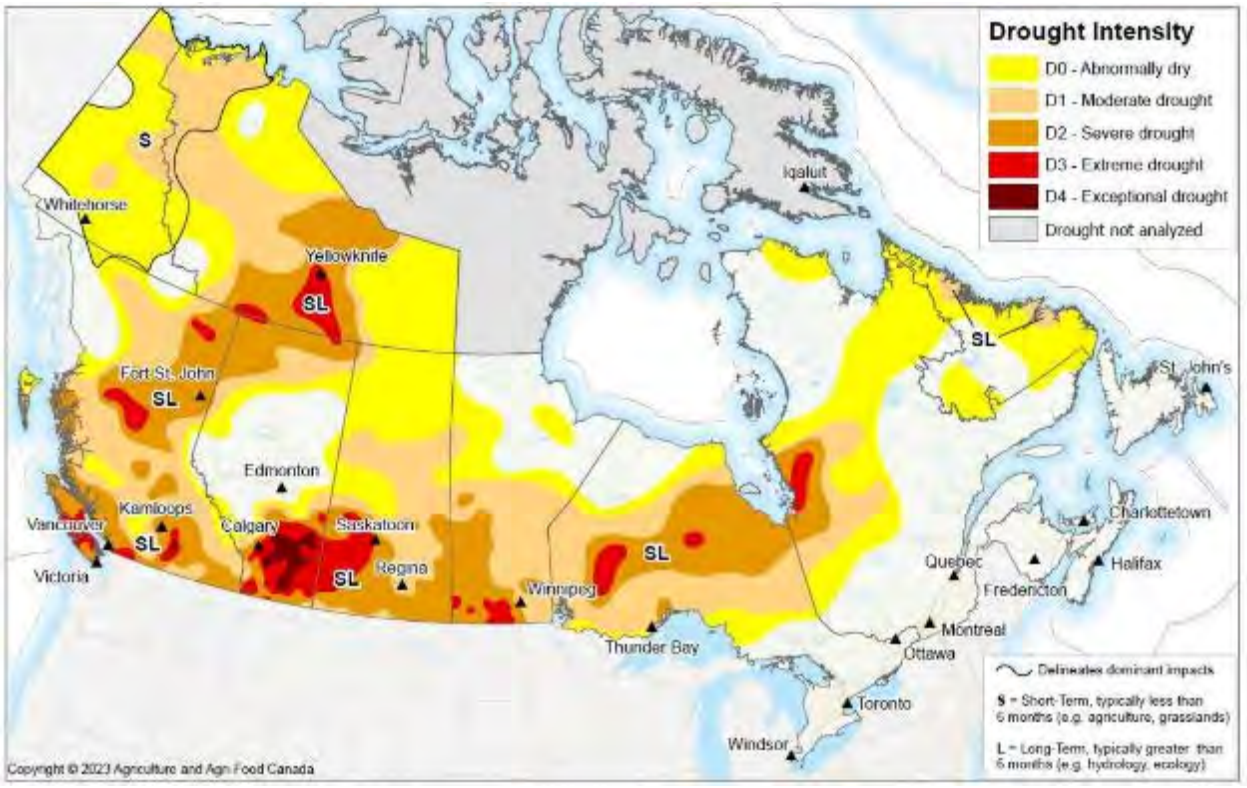
At the end of August, 67% of Canada was classified as Abnormally Dry (D0) or in Moderate to Exceptional Drought (D1 to D4), including 65% of the country's agricultural landscape (Figure 3) (Agriculture and Agri-Food Canada, 2023a).

[5] Attributing causes to some fires proved challenging as a result of ongoing investigations and the dynamic nature of large wildfire complexes.

[6] The NPL is a 1 to 5 scale that gauges the readiness and demand for wildfire response resources in the country.
Level 5 means: National mobilization is heavily committed and increased measures need to be taken to support agencies. Active agencies may take emergency measures to sustain incident operations. Inactive/low activity agencies are at drawdown levels.

- Full commitment of national resources is ongoing.
- Demand for interagency resources through CIFFC is extreme.
- National availability of resources is limited; international resources are being mobilized.
- Potential for emerging significant wildland fires is high to extreme and expected to remain so in one or multiple agencies.

Figure 3: Drought Intensity for Canada (August 31, 2023)



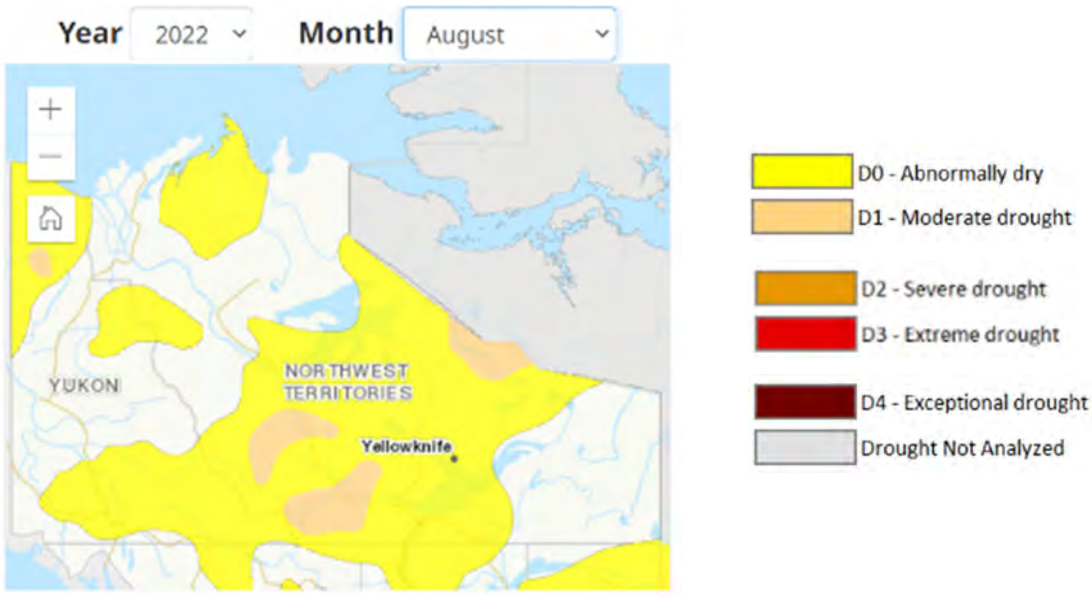
Drought conditions persisted into September and October across many parts of western Canada, necessitating response efforts to stretch resources to meet the demands of the continued wildfire response. It was not until mid-October that State of Emergency orders were lifted nationwide as the 2023 wildfire season concluded (Ministry of Emergency Management and Climate Readiness, 2023; True North Weather Consulting Inc., 2024).

2023 Wildfire Season in the NWT

In 2023, wildfires in NWT burned over 3.4 million hectares, marking a significant increase from previous recorded years. NWT also recorded the highest temperatures on record for a single day, summer, and fall, as well as the longest period without rainfall (True North Weather Consulting Inc., 2024).

The 2023 wildfire season in the NWT was influenced by the effects of weather and climate patterns from the preceding two years. The 2023 drought was "two years in the making" (True North Weather Consulting Inc., 2024). In fall 2022, much of the NWT experienced abnormally dry to moderate drought conditions (Figure 4) (Agriculture and Agri-Food Canada, 2022).

Figure 4: NWT Drought Conditions (August 2022)[7]



Dry conditions continued throughout the remainder of 2022 and throughout the 2023 wildfire season, with below-average precipitation levels throughout the period from October 2022 and September 2023 (Figure 5) (Agriculture and Agri-Food Canada, n.d.).

[7] The Canadian Drought Monitor pulls from multiple data points to establish an overall drought rating for a particular area, using a five-category system. It spans from abnormally dry (D0), reflecting conditions that appear once in every three years, to exceptional drought (D5), for conditions that appear once in every fifty years.

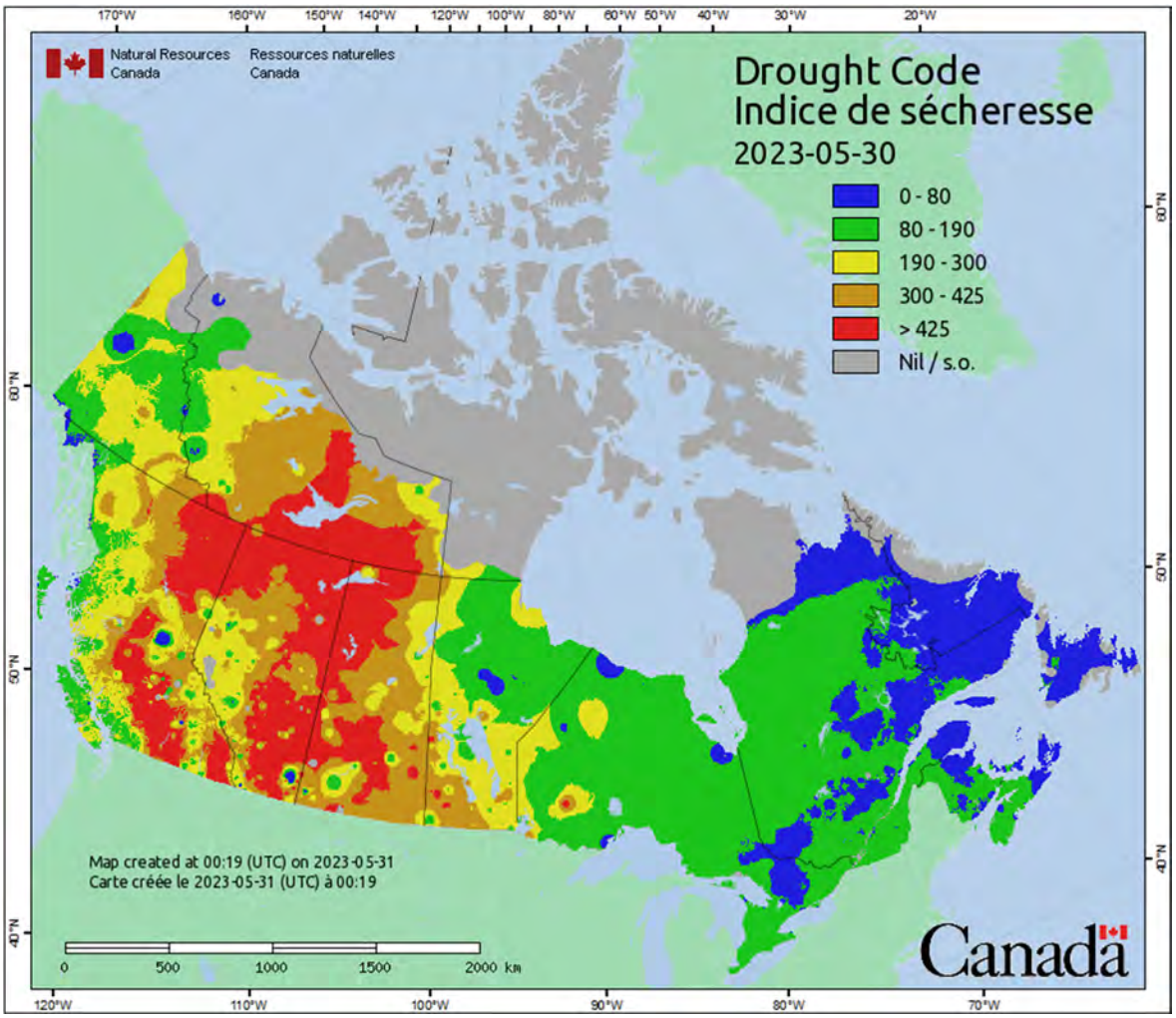
Figure 5: NWT 2022/2023 Monthly Precipitation Anomalies vs. Historical Average

ECC records indicate the Department made substantial efforts to bolster firefighting resources ahead of the 2023 wildfire season in response to the developing situation (Department of Environment and Climate Change , 2023). The first wildfire in the NWT ignited on May 4, 2023, marking the earliest start to the wildfire season than in any recent season (Department of Environment and Climate Change, n.d.).

Between May 1 and May 18, 138 temperature records were broken in the NWT (True North Weather Consulting Inc., 2024). This marked the beginning of a two-month-long heatwave affecting both the NWT and the rest of the country. The prolonged heatwave contributed to widespread drought conditions, significantly exacerbating wildfire activity nationwide (Figure 6) (Natural Resources Canada, n.d.). During this period, NWT experienced low precipitation levels, with communities such as Hay River, Fort Liard, and Fort Smith receiving as little as 10-15% of their usual May rainfall.

By the end of May, 19 wildfires had burned 159,391 hectares across the NWT. The first community evacuations of the wildfire season began in May for Kátł'odeeche First Nation and Hay River. Numerous structures were lost when wildfires burned through Kátł'odeeche First Nation during the SS0005-23 fire (True North Weather Consulting Inc., 2024).

Figure 6: Drought Codes for Canada (May 30, 2023)



Dry conditions alleviated slightly in June 2023, with increased levels of precipitation across the NWT (Figure 5) (Agriculture and Agri-Food Canada, 2023). However, medium to severe drought remained throughout most of the month and the increased precipitation contributed to weather disturbances, including a rise in lightning frequency (True North Weather Consulting Inc., 2024).

In early June, a wildfire threatened the community of Sambaa K'e and one home was lost in the fire. Most wildfire impacts followed later in June because of the increase in lightning activity. Twenty-seven new wildfires were ignited across the NWT by lightning during the last week of June, twenty of which were in the North Slave region. One of these lightning strikes was responsible for the Behchokǫ̀/Yellowknife wildfire (ZF015-23).[8] By the end of June, CIFFC reported 60 wildfires burned a total of 606,000 hectares across the NWT. In comparison, the historical average for the NWT at this time of year is 55,000 hectares (True North Weather Consulting Inc., 2024).

Extreme heat persisted throughout most of July, with daily temperatures peaking as high as 38°C in the western parts of the Territory in places like Tulita and 12 Mile. Inuvik recorded its warmest July

[8] See Appendix C for a review of ZF015-23.

on record, and Fort Simpson recorded its third warmest July and the Mackenzie River measured at its lowest level ever recorded at that time of year. The frequent lightning activity seen at the end of June continued into July, causing 33 new wildfire ignitions between July 1 and July 5. July was particularly smoky, creating low visibility, and hampering air support and air attack efforts (True North Weather Consulting Inc., 2024).

On July 8, the 12 Mile/Tulita wildfire, or VQ-009, destroyed approximately 10 structures in the 12 Mile area (CBC News, 2023a). A week later, on July 15, a firefighter was tragically killed near Fort Liard (CBC News, 2023b). These events, as reported by many interviewed as part of this study, were traumatic for the local communities and the NWT.

The GNWT implemented fire bans for the entire South Slave region on July 21, and the entire North Slave region on July 26. These measures were unprecedent for the territory (CBC News, 2023). In late July, lightning activity intensified, surpassing the levels recorded in June. Between July 21 and July 31, 102 new wildfires ignited, and existing wildfires, including ZF015-23, rapidly expanded. In late July the community of Behchokǫ̀ was evacuated, while the wildfire burned structures along Highway 3 and destroyed homes in the community. At the end of July, the NWT had 227 active wildfires. CIFFC reported just over 1.5 million hectares of forest burned in the NWT (True North Weather Consulting Inc., 2024).

Lightning activity continued into August 2023 and ignition of new wildfires accelerated during the first few days of the month. Twenty-seven ignitions were reported on August 1 and 2, including the ignition of SS052-23, the Enterprise/Hay River wildfire (True North Weather Consulting Inc., 2024).[9]

In early August, fire bans were extended to reduce human-caused wildfires (Holden, 2023); however, lightning remained the predominate cause of wildfire ignitions. On August 11, the GNWT made a request to the federal government for assistance. On August 13, record-breaking wind gusts pushed wildfire across the Hay River District. Enterprise, Fort Smith, Salt River First Nation, and Jean Marie River were evacuated as a direct result. Hay River and Kátł'odeeche First Nation were also evacuated for the second time during the 2023 wildfire season. During the night of

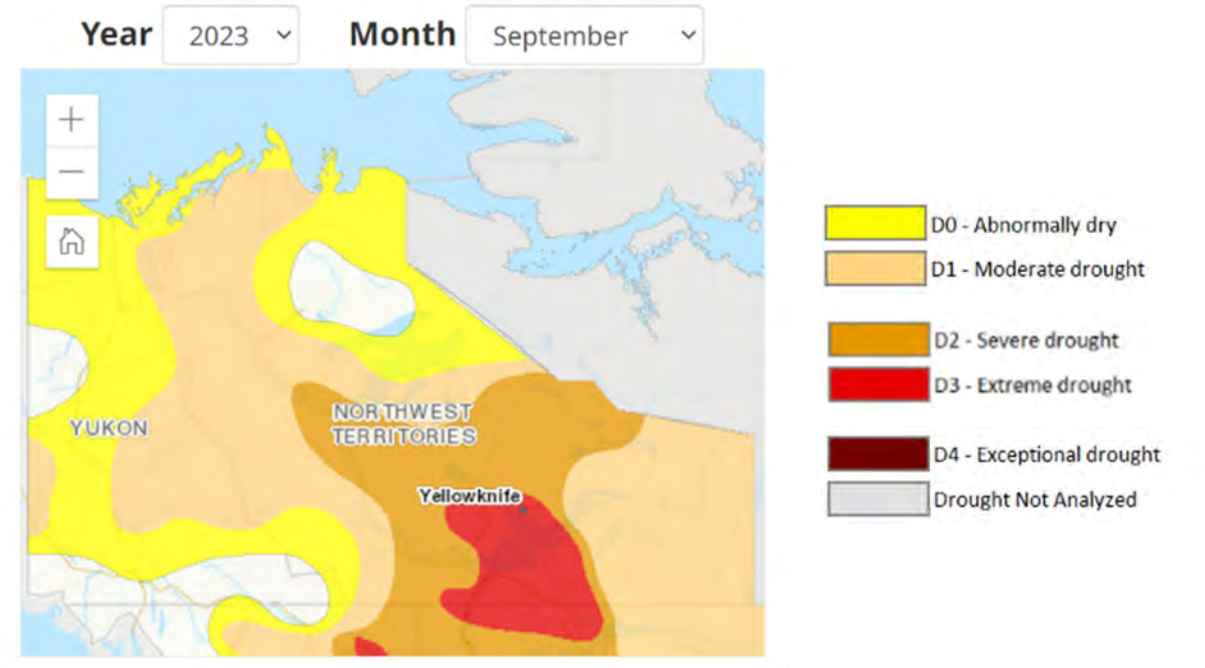
Source: N. Hunter

August 13, SS052-23 destroyed most of the hamlet of Enterprise (True North Weather Consulting Inc., 2024).

On August 15, the Minister of Municipal and Community Affairs (MACA) declared a Territorial State of Emergency to support securing required resources for wildfire response (Government of Northwest Territories, 2023). That day, the Canadian Armed Forces mobilized 124 soldiers, 1 helicopter, and 1 twin otter to support emergency response services and firefighting.[10] Issuance of evacuation orders continued in the following days. Yellowknife, Dettah, N'dilǫ, and the Ingraham Trail were evacuated on August 16, and Kakisa was evacuated on August 17 (Government of Northwest Territories, 2023a). On August 28, ZF015-23 was declared as "being held". By the end of the month, just over 3 million hectares of land had been burned (True North Weather Consulting Inc., 2024, pp. 20, 118).

The Territorial State of Emergency was extended into September 2023 (True North Weather Consulting Inc., 2024). Conditions during the first half of the month remained abnormally dry and warm (Figure 7), with wind gusts of over 70 kilometres per hour in some areas of the NWT (Natural Resources Canada, n.d.). ECC's firefighting efforts continued, actioning six more initial attacks (Department of Environment and Climate Change, n.d.).

Figure 7: NWT Drought Code (September 2023)



By mid-September, extreme temperatures and lightning activity began to subside, giving way to typical cool, fall weather patterns across much of the NWT (True North Weather Consulting Inc., 2024). Wildfires ignited during the surge in July were declared contained or extinguished, and

[10] Type III firefighting refers to crews that undertake mop-up operations once a fire is under control. This classification requires less training than Type I and Type II firefighters. The standard is set by CIFFC but is measured against international standards.

evacuated residents were permitted to return home (Department of Environment and Climate Change, n.d.; Government of Northwest Territories, 2023b).

Unfortunately, some areas only experienced only a brief respite as drought conditions returned before the end of September (True North Weather Consulting Inc., 2024). In the South Slave region, a CN railway was damaged by wildfire, disrupting a critical corridor for the region's imported goods (Blake, 2023). The Territorial State of Emergency was extended twice over the month. By the end of September, over 3.4 million hectares of land had been burned in the NWT (True North Weather Consulting Inc., 2024).

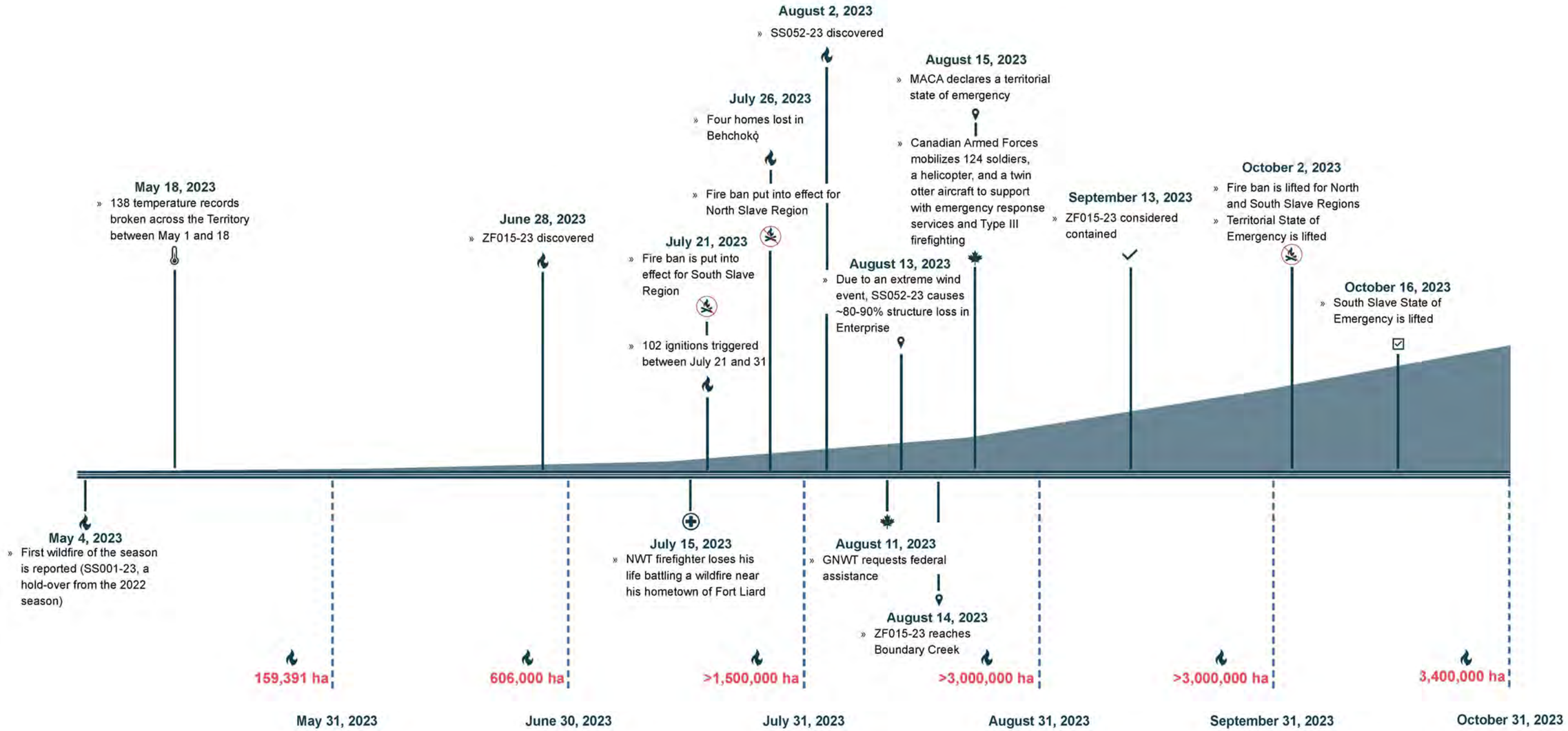
The Territorial State of Emergency was finally lifted on October 2 (Government of Northwest Territories, n.d.). Fire bans were also lifted. However, abnormally dry, and warm conditions continued into October 2023, particularly in southern areas of the NWT such as Hay River, which recorded a record high temperature on October 8 of 24.8°C (True North Weather Consulting Inc., 2024). The CN railway disruption was repaired in late October (Rosenfield, 2023). By the conclusion of the 2023 wildfire season at the end of October, the NWT had experienced 306 wildfires that burned over 3,400,000 hectares, causing the evacuation of 19 communities and one death of a firefighter (True North Weather Consulting Inc., 2024; Department of Environment and Climate Change, 2023).

Table 2: Key Statistics for 2023 Wildfire Season in the NWT

2023 Wildfire Season in the NWT, Key Statistics	
Number of Wildfires	306
Area Burned	3,400,000 ha
Community Evacuations	19
Firefighter Lives Lost	1

Source: (Department of Environment and Climate Change , 2023)

Northwest Territories Season Timeline



Key Themes, Findings, and Recommendations

Based on the primary and secondary data collected for the review, MNP assessed ECC's 2023 wildfire response efforts and actions in relation to the wildfire events. The analysis identified 11 key themes, each accompanied by findings, recommendations, and opportunities for improvement. Recommendations are proposed for immediate action to enhance outcomes in future seasons, while opportunities for improvement are suggested for consideration and implementation over the next one to three years. Recommendations made here are related to ECC's overall response to the 2023 wildfire season. Specific recommendations in relation to SS052-23 and ZF015-23 are found in their respective case studies (see Appendices B & C respectively).

Theme 1: Fire Behaviour Modelling

A strong wildfire behaviour modelling program requires modelling software, data, and people to facilitate effective wildfire response planning and evidence-based decision-making. A deficiency in any of these areas can create shortcomings. Models must be tested in real situations, or inaccurate predictions may be generated. All models require accurate data, at an acceptable scale. Sufficient training and experience are needed to ensure realistic inputs are used, and the models generated are interpreted correctly.

While ECC has historically employed fire modelling tools with reported success, there is uncertainty regarding the future direction for modelling software within the department. *Firecast*, an automated software that provides wildfire behaviour analysis, was used on a trial basis by ECC for both the 2022 and 2023 wildfire seasons. During the 2023 wildfire season, two employees actively used the software. ECC has noted that *Firecast* would not be used for the 2024 wildfire season, in part due to cost increases. There is also limited familiarity within ECC with the open-source monitoring and alerting software based on the Wildfire Intelligence and Simulation Engine (WISE), formerly known as *Prometheus* or *PSaaS*. However, this software is not being consistently leveraged and was noted to have some coding challenges that have not been addressed. ECC's commitment to alternative software remains uncertain. They are currently exploring various options, including the development of an in-house program to create a WISE-based predictive modelling tool. There are many software options available within North America (and globally). However, the number of software options well suited and most easily adapted for use in Canadian jurisdictions is more limited.

Equally important to the modelling software itself is the accuracy, validity, and resolution of the input data. Modern wildfire behaviour modelling uses software with complex algorithms and inputs, such as fuel type, weather (including localized winds, humidity, etc.), terrain topology, wildfire ignition sources, and the proximity of other wildfires. Accurate topography, weather data, and fuel mapping are critical for assessing the risk of wildfire ignition and spread. Maintaining detailed maps (and data sets) about the type, density, and moisture content of vegetation ensures

calculations are based on accurate vegetation patterns. However, the overall data available in the NWT is not as detailed as that in other jurisdictions with denser populations and smaller land bases. This impacted the accuracy of wildfire modelling during the 2023 wildfire season. ECC recognizes there are many regions within the NWT in which the dearth of data limits the accuracy and efficacy of modelling efforts. Fuel mapping is a particular gap. The NRCan data used in many models is raw and does not account for the specifics of the vegetation and vegetation changes over time in the NWT.

Fire behaviour modelling also requires people to accurately input data for the models and correctly interpret the outputs. During the 2023 wildfires, ECC had five employees with the required competencies and experience to conduct wildfire behaviour modelling. Employee turnover and employment opportunities in other jurisdictions have created ongoing challenges for ECC to both develop and retain its forecasting capabilities. Plans are in place to enhance overall modelling capacity by training an additional three employees in this area, including an additional Fire Behaviour Analyst (FBan).


Source: ECC

To compensate for insufficiencies in forecasting capability during the 2023 wildfire season, ECC contracted external technical service providers. To obtain the weather forecasts required to understand and model wildfire behaviour, ECC contracted daily fire weather forecast services from True North Weather Consulting (TNWC) from May 8 to September 29, 2023. TNWC also provided 427 spot forecasts to ECC during this time, a figure significantly greater than the maximum ECC has historically requested of TNWC during previous years (for example, in 2014, the previous benchmark year, the NWT received 197 spot forecasts). Supplemental meteorological services were contracted from the Saskatchewan Public Safety Agency (SPSA) for 17 days of the 2023 season, including presentations to ECC at its daily weather briefings. Many of the reports from TNWC and SPSA source fuel and climate information from federal government departments and branches including NRCan, as well as images from military satellites.

Key Findings

- During the 2023 wildfires, ECC used *Firecast* as its wildfire modelling software. However, ECC will not continue using this software for the 2024 season.
- It is unclear what ECC's immediate next steps are regarding future wildfire behaviour

modeling software. ECC stated their long-term plan is to finish their own in-house development of a WISE-based predictive modelling platform.

- The resolution and scale of existing NWT data pose challenges for predictive wildfire modelling.
- During the 2023 wildfire season the demand for wildfire behaviour modelling expertise was greater than ECC's in-house prediction modelling human resources. ECC indicated they plan to increase wildfire modelling capacity by adding and training new employees.
- ECC's use of external contractors as a stopgap for insufficiencies in forecasting capability has worked well, as key ECC employees were able to quickly obtain the required information.

Recommendations

1.1. Invest in wildfire behaviour modelling software that is current, nationally accepted, and well-supported.

1.2. Invest in systems and research to update fuel, weather, and topography data to the minimum acceptable scale.

1.3. Invest in training ECC's wildfire behaviour modelling employees in the selected modelling software and continue with plans to expand the number of trained employees able to support wildfire behaviour modelling.

Opportunities for Improvement

1.A. Explore and determine the appropriate balance between increasing internal expertise and leveraging external contract resources for weather forecasting, as well as for long-term climate prediction.

Theme 2: Human Resources – Capacity


Source: MNP

At 0.03 persons/km^2, the NWT's population density is considerably lower than that of British Columbia (5.75 persons/km^2), Alberta (6.4 persons/km^2) and Saskatchewan (1.9 persons/km^2) (Harrison, Spalding, & Davidson, 2024; Lewry & Ward, 2024; McDonald, 2024; Rea, 2024; Statistics Canada, 2024). All three provinces have forested areas less than that of NWT (Bohning, Campbell, & Grave, 1997; Braze, 2015; Ministry of Forests, Lands, Natural Resources, 2021; Provincial and Territorial Profiles, 2023). The large land base and small, highly dispersed population characteristic of the NWT present significant challenges for resourcing the wildfire response.

The number of wildland firefighters in the NWT has declined for the past 32 years (Table 3) (Department of Environment and Climate Change, 2024). The NWT is unique in that there is a very large area of forest, that is mostly undeveloped and sparsely populated, requiring wildfire management services from a small organization. The number of wildland firefighters is informed by the GNWT Forest Fire Management Policy 23.03 (the Policy (23.03)), which recognizes wildfires as a necessary and natural phenomenon. The Policy (23.03) mandates that not all wildfires should be suppressed. Forest fire management prioritizes human life above all. Following this, the relative value of a specific or collective sets of natural resources, property, cultural resources, and improvements/developments is considered in relation to the cost of sustained wildfire suppression efforts (Government of Northwest Territories, 2023c). Where not otherwise indicated, The Policy directs ECC to allow wildfires to burn. Based on these priorities, the ECC needs to make real-time decisions that will impact the deployment of human resources.

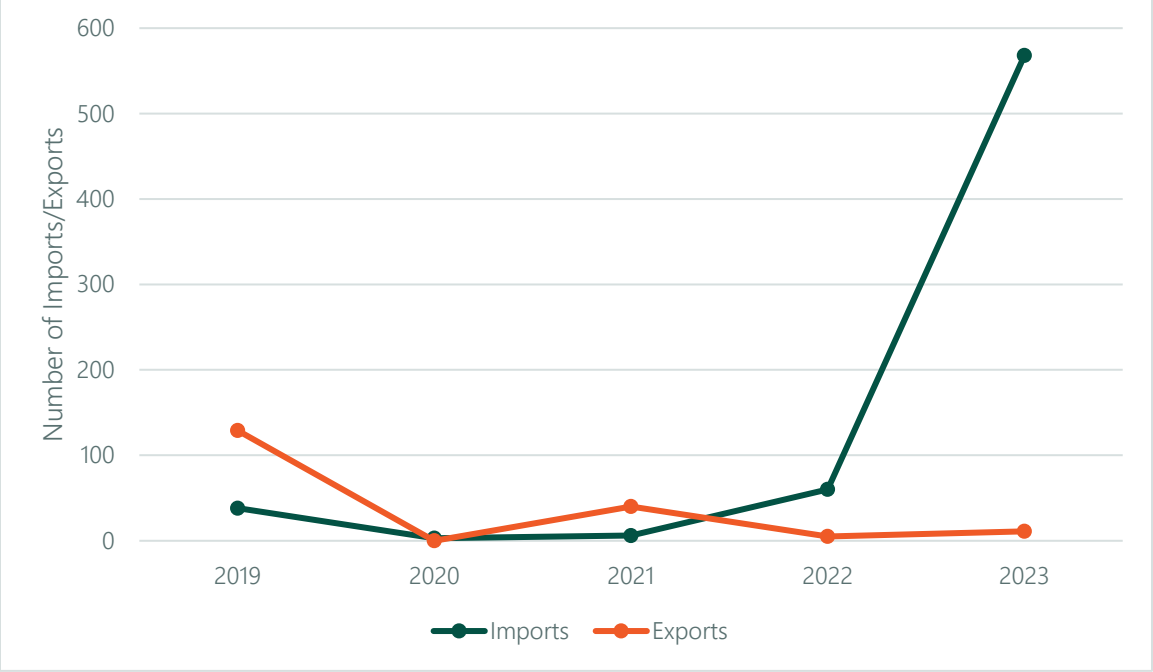
When territorial wildland firefighter resources are fully deployed and additional supports are required, ECC relies on resource-sharing agreements with other provinces and jurisdictions, such as the Mutual Aid Resource Sharing (MARS) agreement. CIFFC is a national wildfire management organization that coordinates resource-sharing, mutual aid, and information-sharing arrangements between jurisdictions and facilitates the transfer of resources to the NWT when needed. In addition, crews from the NWT are exported when required by other jurisdictions and not required for territorial priorities.

Table 3: NWT Fire Crew Numbers

Year	Wildland Fire Fighters
2023	134
2015	140
2011	145
1991	165

Figure 8 demonstrates that the conditions of the 2023 wildfire season were such that wildfire operations could not be sustained by internal capacity alone, and increased imported support was required. Of the 568 personnel imported in 2023, seven were aircraft crew, nine were equipment managers, 444 were firefighters, 75 filled technical positions (e.g., Incident Commander, Operations Sections Chief, Strike Team Leaders, etc.), and 33 took on other more general roles. The focus on importing technical positions highlighted the NWT's need to increase its in-house technical capabilities.

Figure 8: Historic Wildfire Imports and Exports in the NWT



While 2023 CIFFC imports far exceeded the norm for the NWT, many jurisdictions across Canada faced similar conditions, impeding their ability to provide additional support. Even with the imported support through CIFFC, the working capacity of local resources was often exceeded for extended periods.

In normal conditions, ECC follows a standard work week of five days working and the weekend off.

If a weekend is spent working, overtime compensation applies, and efforts are made to provide the next weekend off. If the second weekend is spent working, overtime compensation applies again, and additional effort is made to provide the third weekend off. For wildland firefighter crews, 14 days of work is the generally accepted maximum before mandatory days of rest. As observed in the 2023 season, these guidelines were not always followed. Similarly, other Canadian jurisdictions also reported the difficulty of following the regulations during outbreaks.

Across Canada there was an increased effort to recruit and retain wildland firefighters, recognizing the increasing demand for these resources across North America, and the increased difficulty recruiting and sustaining wildland firefighter crews at home. Efforts included adjusting pay, periods of employment, working conditions, and career paths. There has also been a general increase in base-line resourcing levels in recognition of the difficulty in importing resources when needed as high fire seasons tend to drive demand for resources in many jurisdictions at once.


Source: ECC

With respect to the NWT, the dependency on the importation of crews when fire seasons are high suggests that base-line resources should be closer to levels of the 1990s levels, notwithstanding the fact that 1999 represented the creation of the Territory of Nunavut and a reduction in crew requirements. Based on historical crew usage and the need for crew imports during active fire seasons, additional 22-person crews should be added to the NWT baseline resourcing level. A detailed resourcing analysis should also be completed. In the case of a high fire season, these crews would be available immediately and would be much more effective (in terms of costs and impact of fire suppression objectives) than crews imported from other jurisdictions. In a low fire season, there is a good probability that these crews would be exported to other jurisdictions, thus offsetting a portion of the cost.

Given the very high demands placed on wildland firefighters and wildfire program employees, a high degree of mental and physical fatigue was reported. Many participants reported experiencing health issues, with a broad spectrum of symptoms, including physical exhaustion, impaired sleep, mental exhaustion, trauma, and substance use, among others. Interview and workshop participants often observed the mental health supports provided were not appropriate for their needs, including the Employee and Family Assistance (EFAP) program and *LifeSpeak*. For wildland firefighters (both Extra Firefighters (EFFs) and community-based firefighters), mental health support was limited to resources available to the public. Contract wildland firefighters were reliant on their employers for any mental health support and were not eligible for support offered by ECC.

A new approach to mental health support was explored by ECC in 2023 in response to the tragic

loss of a wildland firefighter out of Fort Liard. Recognizing the need for culturally appropriate supports, ECC reached out to a traditional Dene healer to help those who were impacted by the individual's death. Although the Dene healer was unavailable to assist at that time, this attempt by ECC to broaden its employee mental health support is a step in the right direction and should be continued and extended to other regions and analogous situations.

While ECC offers Mental Health First Aid training for ECC employees, it is not mandated in training plans. Further, although building mental health resilience is a challenge for employees directly involved in response efforts, it is not covered in regular employee training. Participants expressed deep concern regarding this gap in support to help employees both persevere through and build skills to manage mental health challenges experienced on the job.

Key Findings

- The size of ECC's wildfire program and the import and export system, when considering the current NWT Wildfire Response Strategy (2020) (the Wildfire Strategy) appeared adequate for an average year. However, the extreme conditions of the 2023 wildfire season placed a greater demand on the resources than the system could support (Government of Northwest Territories, 2020). The impacts of climate change, including the prevalence and frequency of extreme weather events, raise questions about what constitutes an average year and if baseline resourcing should better consider the extreme years.
- Baseline wildland firefighter resourcing levels have continually decreased since 1991, while demand for wildland firefighters has increased across North America and importation of resources has become more difficult. Recruitment and retention strategies are important as the GNWT is competing with jurisdictions across Canada,
- While imported resources provided support to the NWT, local resources still far exceeded normal working capacities, resulting in negative physical and mental consequences including exhaustion, impaired sleep, and trauma.
- The mental health supports provided came with barriers including a) the lack of accessibility for all those participating in wildfire response activities; and b), not being sufficient to address the complexities and severity of events experienced by wildfire response personnel.

Recommendations

2.1. Expand culturally appropriate mental health services, tailor them for a firefighter audience, and promote them to wildfire management team members. Provide management and team leader-level training on trauma-informed practice and critical incident stress.

2.2. Implement formal team appreciation initiatives that foster a culture of commitment and accountability. This will complement the informal appreciation and gratitude from senior ECC employees and team leaders.

2.3. Increase the organization's emphasis on recruitment and retention of firefighters and

add a minimum of two firefighter crews, with associated overhead support, to better cope with the frequency of extreme weather events.

Opportunities for Improvement

2.A. Conduct scenario planning for resourcing, with extreme seasons like that of 2023 in mind, to test if the current structure of resource allocation and resource sharing agreements is sufficient, and better prepare for a range of possible outcomes.

Theme 3: Human Resources – Training and Skills Management

The first wildfire of the season occurred on May 4, 2023, while the earliest scheduled date for wildland firefighter crew training was May 8, 2023. The misalignment between the commencement of active duty for wildland firefighter crews and their full readiness resulted in crew members being diverted from training for firefighting duties and others being taken off the fire line to complete their training. Engagement participants reported that pulling wildland firefighters from active duty to attend training affected suppression effectiveness and left fire lines under-resourced. Likewise, participants also flagged that safety risks were introduced when untrained crews remained on active duty. With the start of the wildfire season varying from year to year, the need to have wildland firefighters trained and ready for early deployment is necessary.

While future seasons may include fire starts at later than average dates, advancing the season start date, and potential duration, of wildland firefighter crew contracts may result in situations whereby crews are on standby status. This could result in higher budget expenditures. ECC could consider additional and broader responsibilities for fire crew members, such as fire smarting activities if crew members are idle.

The training requirements for all ECC employees (front-line and support) and contractors working in wildfire operations can be found in the Wildfire Management Training Strategy (Government of Northwest Territories, 2020a) (the Management Strategy). The purpose of the strategy is to ensure employees can perform their duties effectively and safely in all circumstances while maintaining a sufficient pool of qualified personnel. The subsection on training requirements of fire line personnel in the Management Strategy outlines the required and optional training for wildfire program positions.

A small number of employees trained in various subject matter areas, enabled them to undertake multiple roles; however, this small pool of qualified individuals was not enough to meet the demands of the 2023 season. Consequently, there were multiple reported cases of individuals filling roles they were not qualified for, or one individual working beyond capacity requirements to fill multiple roles. Both instances placed additional pressure and expectations on specific individuals and left critical IMT roles inconsistently filled. The absence of a skills tracking system makes it difficult to link individuals to skills, training, and certifications, and cross-reference with availability. The Wildfire Management Certification and Qualification Manual outlines the requirements and processes to ensure ECC employees and contractors possess the necessary training and experience for deployment into the

appropriate ICS positions (Government of Northwest Territories, 2021). However, completed certifications were not entered into a centralized database containing information related to certification date, expiry, and contact details. A reliable inventory of skills for ECC, and other GNWT departments would have allowed ECC to source qualified people in a timely manner and identify local gaps in skills to prioritize the development of employees in those areas.

Another strategy employed by ECC to meet the demands of the 2023 wildfire season was the temporary hiring of multiple retired wildfire operation employees. The knowledge and experience of these individuals were an invaluable resource, providing mentorship opportunities for many junior employees. Engagement participants noted the value of having mentorship and competency-building opportunities. However, a barrier to experienced/retired employees remaining or returning to participating in wildfire operation activities lies in the Canadian Physical Performance Exchange Standard for Type 1 Wildland Fire Fighters (WFX-FIT), a national fitness standard used to determine whether an individual possesses the physical capabilities necessary to meet the rigorous demands encountered while fighting wildfire.[11] When individuals are not able to pass the fitness test they are restricted from participating in certain elements of wildfire response operations. This restriction limits mentoring and knowledge transfer opportunities.

Source: MNP

Some participants noted their concerns that, in a limited number of situations, formally retired resources might not be current with fire science advancement and training. There were several reported examples of disagreements around response approaches due to differences in the recency of training.

Exporting GNWT employees to other jurisdictions is an ECC-supported and successful strategy that is utilized for skill and experience development. These opportunities are dependent on the internal capacity of ECC and the individuals' willingness and desire to travel. The demands of the 2023 wildfire season limited export opportunities as internal capacity was needed locally.

Key Findings

- Due to the early start of the fire season, some essential training was not in place for the start of the 2023 wildfire season. This led to some crew members being deployed on active duty without training.
- The number of employees who were cross-trained is limited, and there was no formalized

[11] Canadian Interagency Forest Fire Centre Inc, Are You Prepared for WFX-FIT?, (https://www.ciffc.ca/sites/default/files/2020-11/WFX-FIT%20Booklet%20Web%20%288%C2%BD%20x%2011%29_D%26I_0.pdf). Accessed on May 10, 2024.

process to ensure specific positions are appropriately filled. The absence of a skills tracking system also impacted ECC's ability to fill roles with qualified employees.

- Hiring back retired fire operations employees was a strategy employed by ECC to meet the demands of the season. However, the WFX-FIT posed a barrier, as many of the retired individuals were unable to pass the fitness test and were restricted to specific roles.
- Mentorship opportunities, including mentorship relationships and export opportunities, are not formalized or mandated.

Recommendations

3.1. Compare and analyze the costs/benefits of starting crews earlier with one cycle of centralized training, against staggering crew start dates and doing multiple cycles of training. Consider expanding fire crew member responsibilities in the event of late wildfire seasons to avoid costly idle time. Weight the pros and cons, including budget implications, to inform decisions.

3.2. Further support and formalize the MACA cross-training initiative and secondment opportunities with other parts of ECC and GNWT departments to expand local capacity for IMTs, wildfire management roles, and support functions.

3.3. Develop a robust qualification, certification, and skills tracking system for ECC and other GNWT employees, as part of the GNWT Wildfire Management Certification and Qualification Manual (Government of Northwest Territories, 2021). Ensure the system is easily accessible, consistently updated, and diligently maintained.

3.4. Develop an alternate fitness standard that can be applied to crew members that are designated as territorial resources only (i.e., not for export duty) to support coaching and mentoring local personnel.

3.5. Establish specialized wildfire operations teams to evaluate and oversee complex operations such as indirect attacks (a tactic of working away from the wildfire's perimeter to get rid of forest fuel in the fire's path).

Opportunities for Improvement

3.A. Implement a formal mentoring program allowing the transfer of skills and experience from veteran firefighters to recruits. Access mutual aid partners (other provinces and territories under a mutual aid agreement that promotes and facilitates emergency management assistance between provinces and territories before, during and after a major event) to import mentors if needed.

3.B. Continue the use of retired resources to supplement operational support when needed and ensure those individuals are placed in roles that they are qualified for and where their experience is current.

3.C. Promote export opportunities for employees to learn from experts in other jurisdictions, in turn increasing expertise within the NWT upon their return.

Theme 4: Aviation Resources

Pilots and all types of aircraft essential to wildfire management programs (e.g., air tankers and rotary wing aircraft) were in high demand across Canada during the 2023 wildfire season, with shortages experienced in the NWT and elsewhere in the country. During the 2023 wildfires, the impacts of these shortages were exacerbated by the types of aircraft that were hired relative to the need, aircraft serviceability, misunderstandings regarding missions, operational decision-making, and deficiencies in incident reporting to enable ongoing process improvements.

Source: ECC

In 2023, there were multiple reported instances of aircraft in the NWT being dispatched to regions where they were unsuited to the tasks required. An example of this includes light or intermediate helicopters being provided when medium helicopters were needed. Aircraft are a territorially managed resource; it is the region's responsibility to clearly define task requirements, then the onus is on FMD to review available aircraft and choose the best available aircraft to dispatch. Although the nationwide shortage of aircraft is widely recognized as contributing to the dispatch of inadequate aircraft, there is also no existing SOP or training for FMD employees on aircraft selection. The Aircrew Briefing Manual (Department of Environment and Climate Change, 2023a) does not contain guidance for this decision either, despite the manual indicating that "aircraft type" is a regularly requested piece of information in aircraft form templates.

To increase the number of available aircraft in 2023, WCC utilized the territorial State of Emergency (SOE) declaration to request aircraft that were previously unavailable due to contractual obligations. This enabled many aircraft operators, who were willing but legally constrained, to offer their support once the SOE was declared. Additionally, it compelled less forthcoming operators to share their resources.

The new *Forest Act* (Commissioner of the Northwest Territories, 2023) will replace the *Forest Protection Act* coming into force once the associated regulations are established. This new legislation is anticipated to provide the Ministry and ECC with authority to access aircraft under contract or being withheld, for the purposes of supporting wildfire response efforts. Until the regulations are developed, and the *Forest Act* is brought into force, uncertainty remains regarding

the ability to conscript pilots along with their aircraft. In addition, discussions about the anticipated regulations highlight the need to train additional pilots and aircraft managers.

Engagement participants reported a limited number of cases where the effectiveness of aviation resources was compromised due to confusion or disagreements between pilots, incident commanders, and other key ICS personnel, such as Air Attack Officers (AAO). For example, one participant described a situation where a directive given to an air tanker group for a specified retardant drop mission was not followed, which created a safety concern for crew members on the ground. Further details revealed that the pilot had additional information that necessitated a judgment call on the execution of the mission. Although it is sometimes necessary for pilots to make last-minute adjustments to directive execution in the interest of safety, this action can be interpreted by some ECC employees as disregard for the directive. Such situations can also result in near-misses or serious incidents. However, in all cases, the safety of any flight is the full responsibility of the pilot in command, and they have full authority over the operation of the aircraft. Situations occur during wildfire operations where flight or wildfire conditions deteriorate and require changes in plans. Although ECC requires that deviations from missions or directives be recorded, a review of the record makes it unclear if these examples resulted in filed reports that could be evaluated to support safety and operational improvements.

Key Findings

- ECC's wildfire aircraft procurement system appears to be operating well. The 2023 wildfire season caused aircraft resourcing strains across Canada, affecting EEC's ability to procure adequate numbers of required aircraft.
- ECC does not have formal guidance, such as policies or SOPs, to support the selection of aircraft (i.e., the specific type and size of fixed and rotary wing aircraft) based on the required wildfire response task.
- Gaining access to aircraft previously engaged on other contracts helped to support wildfire response in 2023. However, this option was not leveraged until the situation became highly urgent and an SOE was declared. The new, and yet to be brought into force, *Forest Act* may provide ECC with the ability to leverage previously unavailable aircraft earlier in the wildfire season.
- AAO or pilot deviation from missions or directives may be required in the interest of safety. However, in limited instances, this action has been interpreted as disregard of the mission or directive. It is not clear if all deviations from missions or directives were recorded as required.

Recommendations

4.1. Participate, where possible, in the development of *Forest Act* regulations to help ensure clarity with respect to authority to access aircraft otherwise engaged in contractual obligations to provide services to another party. It is recommended the topic of pilots

be included in these discussions.

4.2. Once *Forest Act* regulations have been developed and enacted, create an SOP to guide employees on the process of accessing aircraft and pilots otherwise engaged in contractual obligations to provide services to another party.

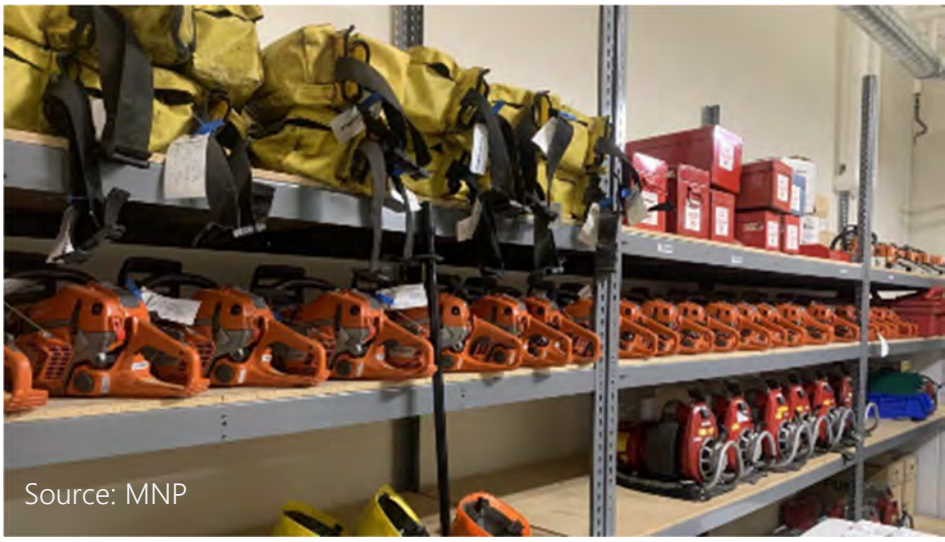
4.3. Develop an aircraft selection SOP or add aircraft selection guidance to the Aircraft Briefing Manual.

Opportunities for Improvement

4.A. Review procedures, training, and awareness regarding incident reporting.

Theme 5: Equipment Management and Infrastructure

Inventory management for wildfire response activities is the responsibility of the Materials Management Officers (MMO). Six regional warehouses (Inuvik, Norman Wells, Fort Simpson, Hay River, Fort Smith, and Yellowknife) are used to store, assess, and maintain equipment. An MMO is in each of the five regions. The MMO responsibilities include security, procurement, shipping and receiving, inventory, and disposal of assets (Government of Northwest Territories, 2023d).



Source: MNP

ECC currently uses *ToolHound* as its tool inventory management software and system, to track equipment such as sprinklers, pumps, chainsaws, and hand tools. This software has been in place within the GNWT for over 10 years, including during the 2023 wildfires. Workshop and interview participants indicated challenges related to inventory management and equipment availability during the 2023 wildfire seasons. Some participants shared accounts of pumps, hoses and other equipment being transferred to locations in different regions without proper procedures, equipment being left in the field in unknown locations after suppression activity ended, and equipment in the field being stolen or damaged by community members.

Participants also provided mixed reviews of the *ToolHound* software – some indicated the software's capabilities are not properly utilized for effective inventory management, and others reported a lack of appropriate training to enable the use of the system. The barriers and factors related to full and effective inventory management appear to be less about the *ToolHound* software itself, and more due to individuals choosing to not use the program, individuals not completing training, or the full suite of software options not being implemented within a region or by an MMO. For example, some participants shared that they only recently began using all the features of the software, such as the equipment scan feature despite access to the program for 10 years. Others shared they were unaware of training opportunities or had not yet prioritized completing training. These factors contributed to failures in accurate and timely equipment tracking, which resulted in fireline shortages, and increased procurement costs.

ECC has implemented various training strategies for *ToolHound* since 2013. Approaches included group classroom training, online training modules, and training provided by *ToolHound* representatives. When version updates of the system occur, FMD informs Material Management Officers, Forest Officers, and Managers of Forestry Operations; a 'refresher' on the program as a whole and its capabilities is also provided. These officers and managers then share this information

with their respective regions in the form of online training. Currently, ECC indicated that there is no tracking system in place to account for online module completion.

In addition to equipment management issues, critical communication infrastructure was compromised by the wildfires in 2023, including fibre-optic lines and network servers. Some participants speculated that the line was susceptible to damage related to poor installation, while others claimed that installation procedures were correct and that the lines were forced to the surface by permafrost behaviour. Regardless of the reason, wildfires reportedly damaged the lines, resulting in communication blackout periods in certain communities, including Fort Smith, Hay River, and Enterprise. Starlink was brought in to reestablish communications, through a mix of privately owned and government-owned resources. The disruption to communications was reported by participants to have disrupted wildfire response and evacuation efforts. The volatility of the current communication infrastructure highlights a need for alternative and/or backup plans. ECC indicated they escalated the plan to install backup communication infrastructure in preparation for next season, recognizing the crucial role it plays in maintaining a coordinated wildfire and evacuation response.

Key Findings

- The *ToolHound* wildfire response equipment and inventory software management tool appeared to have adequate features and functions to meet the needs of ECC during the 2023 wildfires. The shortcomings in effective and timely tool inventory management appeared to be related to training and utilization of the software.
- Compromised communication infrastructure negatively impacted wildfire response and created a safety risk for employees and residents.

Opportunities for Improvement

5.A. Create an online module completion tracking system to ensure the appropriate people are keeping up to date on required training for effective *ToolHound* use.

5.B. Assess *ToolHound* use across regions and warehouses to document practices and identify inconsistencies and opportunities for full feature implementation. Subsequently, create a strategy and implementation plan with clear timelines and accountabilities.

5.C. Continue efforts to establish and complete backup communications networks that are resilient to wildfire disruptions, along with related protocols and training. Implement remote network maintenance and backup systems.

Theme 6: Incident Command System Discipline

Wildfire managers and other employees or personnel involved in the 2023 response efforts frequently cited the importance of ICS and stated that they accept the ICS as a clear and effective system for organizing leadership and resources during wildfire responses. However, participants raised examples of departures to the ICS structure during the 2023 wildfire season, especially during July and August. Departures from ICS reportedly created challenges with communications, the coordination of wildfire response strategies, and the deployment of resources. None of the examples cited were directly correlated to outcomes such as the loss of structures or the loss of a fire line.

A review of the engagement and analysis of the information, suggests that in many cases, departures from the ICS structure were most likely related to inadequate training and experience. Several individuals reported being appointed to key decision-making roles, such as incident command and duty officer, without meeting the full training requirements, including advanced ICS certification. In a smaller number of cases, participants stated that many people were overwhelmed by a rapidly changing situation and system structures "fell apart." One of the cases appeared to be due to personality conflicts between the individuals involved.

It is apparent that the GNWT recognizes the importance of adhering to ICS principles and structures in emergency operations, including the wildfire management program. Also, it has identified the integrity of the ICS as an area for improvement; MACA has reportedly started an initiative to expand ICS training and ECC is continuing to train employees at all levels of ICS.

Figure 9: Historical ECC ICS Training

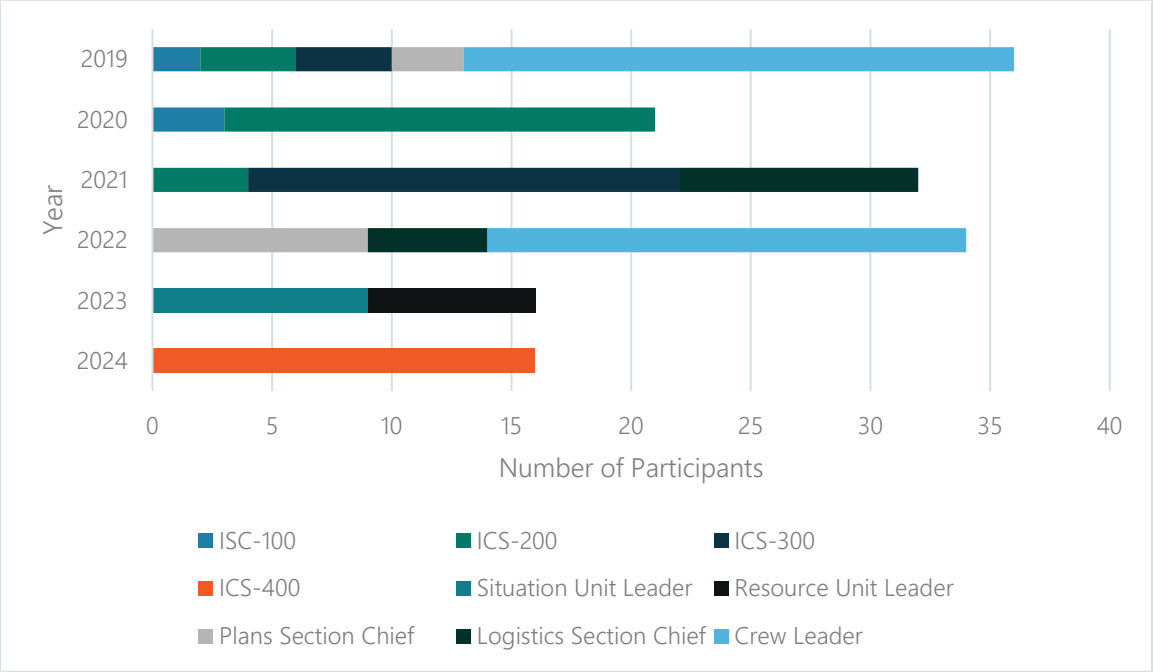


Figure 9 shows the historical ICS training courses ECC employees have completed over the past

five years. ISC-100 and ISC-200 are awareness-level training courses intended for all personnel assuming any positions and supervisory roles, respectively within an organization employing ICS. ICS-300 and ICS-400 are advanced-level training courses intended for incident management personnel in supervisory roles and serving as Command and General Staff in an ICS organization. Situation Unit Leader, Resource Unit Leader, Logistics Sections Chief and Crew Leader are position-specific trainings to build further capacity and understanding of roles and responsibilities for positions.

While all levels of ICS training are required for ECC employees, workshop and interview participants stressed that a greater number of GNWT employees should have ISC-100 training as a minimum requirement. Additionally, participated suggested that wildland firefighters should also received this base level training. Aurora College has started offering ICS courses and is reported to be a core partner in building ICS knowledge within the NWT. Furthermore, while it appears that ECC has been effective in providing training opportunities in the ICS field for full-time employees, ECC would benefit from training fire crew members in ICS, as they receive directives, are directly involved in tactical operations, and may also supply vital intelligence to decision makers.


Source: ECC

As import crews and import personnel for key positions, such as incident commander, were widely used in the NWT during 2023, knowledge of, and adherence to, ICS was critical for coordination and communication of response activities. GNWT employees and response personnel external to the GNWT observed that the ICS system was effective and largely adhered to by all parties involved. ECC worked closely with Parks Canada and the Government of Alberta in 2023 to respond to an early wildfire in Wood Buffalo National Park. While ignited in Alberta, the wildfire spread quickly into NWT and called for a coordinated response. A unified command system was implemented with reported success, providing the agencies with a clear understanding of their roles and responsibilities in the response effort. This serves as an example of the effectiveness of using ICS in complex emergency situations and where other agencies or jurisdictions were involved.

True Unified command was not established on either the SS0052-23 or ZF0015-23 wildfires.

Key Findings

- ICS is a widely supported system in the NWT and is recognized for its simplicity and effectiveness. Unified command is similarly effective when other response partners are involved.

- Departures from ICS occurred at different times and during responses to different wildfires in 2023. Possible reasons for these departures include lack of training, lack of awareness of protocols, the physical and mental stress of the specific situations, and the overall wildfire season.

Recommendations

6.1. Ensure a broader range of ECC employees have appropriate ICS training.

6.2. Advocate for more ICS training in GNWT departments in addition to MACA and ECC, as well as within NWT communities.

Opportunities for Improvement

6.A. Enhance training and education of the benefits to reporting ICS protocol non-compliances to enable reviews and learnings. Perform regular reviews/investigations of reported incidents and published findings summaries, along with lessons learned and opportunities for improvements.

Theme 7: Policy, Strategy and Procedures

ECC's wildfire response program is managed and delivered through a range of formal documents, including legislation and regulation, to program-specific policies, strategies, standard operating procedures, and guidelines. SPARCS is an online platform used by ECC to store all policies, strategies, SOPs, and guidelines. The platform is available to Duty Officers (DOs) and senior-level positions with decision-making authority and access to specific documents is provided to Wildfire Crew Leaders and Wildfire Technicians as required and as applicable. In the past, ECC printed hard copies of policy and SOP manuals. This practice was discontinued before the 2023 season and all formal documents can be accessed online.

Participants observed a widespread lack of awareness of current policies and SOPs within ECC. Accessing formal documents online is reportedly challenging and there is a preference for hard copies of policies and SOPs for ease of access. ECC-FMD noted that over 20 policies or SOPs are known to require updates and/or formal approval. Additional concerns noted by participants included: outdated SOPs, a lack of standardized format, and missing or incomplete SOPs.

At the wildland firefighter crew level, early season training provides the opportunity for generating awareness and understanding of policies and SOP. Several participants indicated that insufficient time is spent orienting wildland firefighter crew leaders and their crews to policies and SOPs beyond the start of the year training sessions. Compliance and awareness challenges were noted to not be limited to the crew during the 2023 wildfire seasons – many participants cited the extreme and rapidly changing conditions, coupled with resourcing shortages, resulting in the appointment and movement of people into roles in which those individuals were not certified or trained. While "in the role" training was often cited as a "great learning experience", the trade-off of this practice is potentially marginal policy compliance.

One example of limited policy compliance was the incomplete execution of After-Action Reviews (AARs). Training and templates are provided to all regions, with the expectation that AARs are completed for all wildfires. However, only 40% of After-Action Reviews (AARs) were completed for the 2023 wildfires. This shortfall is attributed to the severity, complexity, and sheer number of wildfire incidents. Many engagement participants shared that there were limited opportunities to debrief on the wildfire season or participate in an AAR — the workshops and interviews were the first time

Source: ECC

many formally discussed the 2023 season and its impacts. Debriefing offers numerous benefits for individuals and organizations including opportunities for learning, building resilience, and continuous improvement. Many workshop and interview participants shared the belief that they suffered Post Traumatic Stress Disorder (PTSD) from the events of 2023. Participation in AARs by these individuals may have helped them identify and address stress-related issues much earlier and more effectively.

A second example of policy adherence challenges involved the core finance and administration SOP regarding the procurement of equipment and supplies. The urgent need for rapid emergency response during the season, combined with the high demand for heavy equipment and supplies to support wildfire operations resulted in significant deviations from the established SOP. As a result, financial controls were not adhered to, and data entry for record keeping and accounts payable was inconsistently managed. Participants further noted that ECC entered non-competitively priced contracts, some of which were still being paid as of March 2024. While the emergency may have contributed to the lack of adherence to SOPs, such procedural breakdowns lead to more significant consequences.

A third example of a policy document requiring refinement is the Required Planning for Wildfire Events (RPWE) document. The RPWE is intended to provide direction to fire managers for the planning required for all fires and indicates the specific documentation required to support response decisions (e.g., smoke report, fire assessment, WSA, IAP, etc.). The RPWE specifies that the various reports and plans are to be filed in EMBER. However, participants and reviewers noted that some documents are stored in SPARCS. A review of the RPWE revealed a lack of clarity regarding planning documentation requirements leaving decision-making open to interpretation. For example, for a type 3 fire the RPWE states that a written IAP "may be required," but provides no further guidance. Additionally, the RPWE appears incomplete lacking version control and a designated document owner.

Key Findings

- Engagement participants noted a general level of lack of awareness of policies and SOPs within ECC. While some training is in place, it did not appear to meet the needs of various positions and resulted in organization-wide underappreciation and adherence to policies and SOPs.
- Policy and SOP adherence levels appear to vary. However, this did not directly result in adverse outcomes in most cases. An exception was the lack of adherence to the procurement process, which had negative financial consequences for ECC.
- The benefits of AARs were limited due to low completion rates and inadequate dissemination of lessons learned within ECC.
- The Required Planning for Wildfire Events document lacks specificity, appears to be in draft form without finalization, and allows room for interpretation and discretion.

Recommendations

7.1. Review and modernize a comprehensive approach to SOP training and make physical SOP binders available at the start of each season. Track binder locations and use spot audits and other tactics to keep the binders updated. Circulate and clarify the online pathways for accessing SOPs and the Wildfire Strategy.

7.2. Review and modernize the AAR system, and implement processes to track, monitor and incentivize adherence. Use AARs to help create a Lessons Learned system.

Opportunities for Improvement

7.A. Conduct periodic audits related to policy and SOP compliance and engage employees from all levels to determine barriers and opportunities to awareness, education, and compliance.

7.B. Refine and finalize the Required Planning for Wildfire Events document and ensure that the integration with software is clear and consistent (i.e., EMBER or SPARCS).

Theme 8: Wildfire and Wildfire Response Information Sharing

Elected officials, government senior management and employees, wildland firefighters, and the public need to be aware of where to access correct, up-to-date wildfire, and wildfire response information. They also need to be aware of the proper communication channels and protocols. During the 2023 wildfire season, misinformation about the wildfires and the wildfire response contributed to confusion and increased public safety risks. Identifying and responding to misleading and inaccurate information consumes limited human resources and contributes negatively to ECC employee mental health.

The Wildfire Management Strategy outlines ECC's responsibility to conduct engagement activities to facilitate the public's understanding of wildfire, respond to public concerns, and discuss ECC's responsibilities and decision-making processes. Public engagement has many benefits, including communicating what ECC is and is not mandated to do, as well as communicating the public's responsibility in prevention and FireSmart activities. Public engagement is a proactive way to increase trust with the public, elected officials, and other government agencies, by both providing information and allowing the opportunity for audiences to seek clarification and voice concerns. This engagement can take many forms including town halls, meetings with local leadership, or meetings with co-management partners and renewable resource boards. While ECC conducted community engagement sessions in most regions after the 2023 wildfire season. This contrasts with previous seasons, where community engagement was not always prioritized.

Source: ECC

ECC used online platforms such as the GNWT website, Facebook, and X (Twitter) during the 2023 wildfire season. ECC posted numerous notices, providing wildfire updates, and sharing information on conditions, distance to landmarks, status of VARs, and ECC's response efforts, as well as sharing pictures of the events. However, while social media was an effective tool for ECC to keep the public informed, it was also used by the public to distribute misinformation. Significant effort was expended by ECC's communications team to respond to and correct misinformation.

Interdepartmental communication regarding the wildfire and wildfire response in 2023 was also impeded by a lack of awareness of proper communication channels. The Wildfire Event Notification Protocol Between ECC and MACA is a document outlining the method of notification between MACA, ECC, and community governments should wildfire threaten a community or civilian

population in the NWT. The document contains contact information for ECC Regional Superintendents and MACA territorial and regional personnel; however, it was not updated for the 2023 season. This interrupted timely communications between the two departments. ECC is currently working with MACA to ensure the document is updated for the 2024 season.

Key Findings

- The public does not have a strong understanding of how the GNWT delegates, structures, and shares information on territorial wildfire response.
- Inaccurate wildfire and wildfire response information shared online propagated misinformation in 2023, resulting in public criticism of the GNWT.
- Responding to misleading and inaccurate information consumes limited ECC resources and contributes negatively to ECC employee mental health.
- Updates are being made to the Wildfire Event Notification Protocol Between ECC and MACA to ensure the document contains accurate contact information to facilitate timely communication between ECC and MACA in the future.

Recommendations

8.1. Reaffirm with the relevant government departments which department is responsible for responding to each of the various types of misinformation. Consider the different partners and employee counterparts that should be included in this conversation (political leaders, ECC, MACA, Health, etc.).

Opportunities for Improvement

8.A. Continue investment in off-season community engagement and education events to provide the public with information on the responsibilities of various government agencies related to wildfire response, highlight proper communication channels, and improve understanding of how resources are deployed and prioritized.

Theme 9: Coordination with Municipal Governments and Indigenous Governments

Municipal Governments and Indigenous Governments are key partners for ECC in wildfire response, collaborating on prevention initiatives, risk mitigation, emergency procedures, and suppression in the wildland/urban interface. Review participants, notably those representing municipal and/or Indigenous Governments, described communications and incident command structure challenges during the 2023 wildfires. These included confusion in the response priorities and tactics of ECC, and a lack of clarity on the roles of municipal fire teams and other support services (e.g., hosting command posts, provision of food and lodging for fire crews, and other support employees, etc.). These challenges also led to instances where some Municipal Governments extended their firefighting duties beyond their boundaries, as clear assignment of firefighting duties outside of municipal boundaries were not always established. Some Municipal Governments noted they did not have Memorandums of Understanding (MOUs) with other municipalities, First Nations, or the GNWT to delineate responsibilities. Participants cited the value of tabletop exercises, particularly during the off-season, for clarifying the decision-making processes among relevant agencies. However, few participants had participated in simulated or tabletop exercises at the time of engagement.

One concern that arose from workshops and interviews was the lack of a guiding definition for an "essential worker". This concern stemmed from evacuation confusion, when community personnel, especially those perceived as "essential", followed evacuation orders, and left a gap in their still-needed wildfire response services. ECC, Municipal Governments, and Indigenous Governments lacked coordination and a common understanding of which community employees needed to stay so that wildland firefighter crews and other emergency response workers could do their jobs safely and with sufficient support.

Source: ECC

There were also instances of both community employees and local fire crews continuing to work in threatened communities. Limited access roads and at-risk communications infrastructure made this decision especially risky for most communities across the NWT. This was especially true in Fort Smith when many ECC employees did not evacuate so that they could continue coordinating and

delivering fire operations. When the communications infrastructure was compromised, they reported feeling highly vulnerable because they had no way of knowing how close the fire was to the community. For this reason, setting clear expectations and guidelines for evacuation, including both community employees and ECC employees, is key.

Key Findings

- There is a need for MOUs between municipalities, Indigenous Governments, and ECC to clearly outline jurisdictional responsibilities.
- The lack of shared definitions around essential workers and to whom an evacuation order applies created confusion, tension, and delays in wildfire response efforts.
- During the 2023 wildfire season, there were instances of people evacuating communities when they were still needed and instances of people staying in-community when they should have left.

Recommendations

9.1. ECC/FMD wildfire employees and community structural firefighters should engage with one another during the offseason in simulated wildfire scenarios for areas where jurisdiction is unclear. This will help all involved understand roles and responsibilities and support continuous improvement.

9.2. Develop MOUs between ECC, municipalities and Indigenous Governments to document future areas of responsibility, cooperation, and commitments.

9.3. Conduct Intergovernmental tabletop exercises to help ECC, Municipal Governments, and Indigenous Governments understand each other's concerns for their employees in the event of an evacuation order and predict the challenges that would cause confusion around the go/stay decisions for different groups (EMO, health, food service, and policing).

Opportunities for Improvement

9.A. Continue discussion around "essential workers" to attain further clarity and formalize a definition.

9.B. Continue the regular practice of assigning an ECC Agency Representative (AREP) to the local government's Emergency Operation Centre (EOC) when activated to increase info flow, improve relationships, and build trust.

Theme 10: Prevention and Community Protection

Fire prevention and community protection is an NWT-wide, continuous, and collaborative process. Community protection projects, such as building fuel breaks, conducting prescribed fires, or reducing fuel around a community, require expertise and mobilization from several groups. The community must be involved, both at the government level and the public level. Projects of this nature tend to be quite visible due to the alteration of vegetation close to the community. As such, public awareness of the project tends to be high, and questions usually follow. Transparency and up-front education from the local government about the projects in or by their community can help build public support and engagement.

Community protection projects also require local operations capacity. Heavy-duty machinery is commonly needed for the construction of fuel breaks. In many places in the NWT, these types of projects are uncommon and expertise on how to properly conduct them is limited. Engagement participants noted the potential waste time and resources in attempts to construct fuel breaks under poor and conflicting guidance. ECC can play a part in providing expertise and advice on how to go about completing an effective protection project. In previous community protection projects, MACA has been involved in overseeing such initiatives. However, there has been a lack of clarity regard the responsibility for maintaining the fuel breaks, a crucial aspect of project effectiveness. Unmaintained fuel breaks can pose increased be wildfire risks compared to the original landscape.


Source: ECC

The roles and responsibilities for conducting and maintaining community protection projects are not adequately defined in the NWT. ECC has technical expertise, but project maintenance is outside of their scope. MACA has led projects in the past, but only as a reactionary, one-time effort. Communities and local governments want to feel protected from wildfires but do not have the technical nor logistical expertise to predict and address potential wildfire behaviour. For contractors, many may have expertise in the activities required by a community protection project but do not know rational behind cutting the trees and removing fuel. The pieces are there- but the roles and responsibilities need clarification.

Nonetheless, the importance of these types of projects continues to grow, reflected in the large number of threatened communities in 2023. To support more community protection projects in the NWT, the Disaster and Mitigation Fund is providing $20 million to NWT communities, administered by the Northwest Territories Association of Communities (NWTAC), with ECC as a guiding member. This money comes from the Government of Canada's Disaster Mitigation and

Adaptation Fund which committed $2 billion over ten years to invest in community protection projects that address the threat of natural disasters. An additional $1.375 billion was committed in 2021 to renew the fund (Government of Canada, 2023a).

Even before funding from the federal government was secured, GNWT was investing in vegetation management projects and researching best practices in community protection. In 2021/2022, the GNWT provided $483,500.00 to reduce the risk to communities from wildfires. This money was spent on vegetation management projects in Fort Simpson, Hay River, Sambaa K'e, Tsiigehtchic, and Behchokǫ̀. It also helped fund research conducted in partnership with FP Innovations at the Fore Providence Wildfire Experimental Site (Department of Environment and Climate Change, n.d.a).

Conducting prescribed burns is another possible technique for protecting communities and reducing neighbouring fuel loads. Prescribed burns are a traditional cultural practice for many Inuit and Indigenous communities within the NWT. This has not been leveraged as public perception and control risks have caused hesitance. ECC and the GNWT have been working with Indigenous knowledge-keepers, local colleges, and a handful of communities to conduct prescribed, planned burns that will renew vegetation. These projects are still in the planning phase and may require the submission of funding applications before being able to move forward.

The GNWT has also been very involved in promoting and facilitating Canada's FireSmart program. FireSmart is a national program founded in 1993 to promote good practices in making properties and buildings more resilient to wildfire. FireSmart promotes seven themes relevant to mitigating impacts of wildfire on homes and communities—one of the themes is specific to fuel reduction as a community protection initiative. All approaches to community protection and wildfire mitigation play an important part in ensuring communities are well positioned to mitigate the effects of a threatening wildfire. ECC has a team leading a multi-year initiative to increase FireSmarting in the NWT and promote responsible property maintenance.


Source: ECC

One area where the GNWT excels in community protection planning is in identifying and documenting VARs. The VAR registry is managed and maintained by ECC, with regional managers reportedly updating the list with new information regularly. At a minimum, VAR sites are expected to be updated once every five years. Some participants reported these check-ups are not occurring as often as they should and as a result, there are gaps in the VAR registry when it comes to natural and cultural sites. Cultural sites are a newer inclusion on the VAR registry.

Key Findings

- The roles and responsibilities in conducting community protection projects are not defined or well understood.
- Careful consideration must be made to ensure community protection projects have the budget and resources in place to be properly maintained.
- Investment from all levels of government is being made in building community fire resilience.
- The GNWT has a strong VAR registry system in place, but regular updates and maintenance need to be prioritized.

Recommendations

10.1. Define and communicate roles and responsibilities for community protection projects and ensure that maintenance is planned into the future. Confirm who will initiate them, who will plan and resource them, who will conduct them, who will maintain them, and how the public can support them.

10.2. Consult with Municipal Governments, Indigenous Governments, and the public to bring the VAR registry up-to-date, inclusive of natural and cultural values, and ensure check-ups are conducted as expected.

Opportunities for Improvement

10.A. Enhance promotional efforts of the FireSmart program for various audiences, including the use of fuel breaks.

10.B. Continue to explore the use of preventative forest management procedures, including prescribed burns with partners.

Theme 11: Budgeting and Reporting Structure

The Wildfire Management Program in the NWT, which was in place during the 2023 wildfires, employs a hybrid structure, with some responsibilities at the territorial level within the FMD with oversight from an ADM of Wildlife and Forest Management Branch (WFMB), and some at the regional level with oversight from an ADM of Regional Operations. The strategy associated with splitting the program into regional and territorial levels of responsibilities is two-fold. It matches the local and regional needs of the public or stakeholders with a regional organization and authority and matches territorial needs and resources with a centrally managed group.

Source: MNP

Within this structure, responsibilities for wildfire management are allocated as follows:

Wildlife and Forest Management – Forest Management Division

- Maintaining and leading updates to wildfire management policy, strategy, and operating procedures.
- Contracting and managing territorial aircraft resources, including airtanker groups.
- Maintenance of a central warehouse for equipment and supplies.
- Managing and delivering training and continuing competency for permanent wildfire management employees.
- Managing and delivering territorial-level wildfire prevention, pre-suppression, and communications activities, including public education and awareness.
- Management of the fire suppression budget, including tracking and approving all activities and costs over and above the base level set of activities assigned to regions.

Regional Operations – Individual Regions

- Presuppression activities, including:
    - Prevention and FireSmart activities
    - Seasonal fire crew training
    - Seasonal fire crew recruitment and employment
    - Seasonal helicopter engagement

- Fire detection
- Wildfire initial attack
- Inventory and maintenance of equipment
- Maintenance of regional camps and assets
- Financial cost tracking and recourse deployment

The delegation of responsibilities is designed such that the regions plan, prepare, and manage crews, aircraft, resources, and relationships at a base level (or pre-suppression level) on a day-to-day basis within their geographic area, under the direction of policies and procedures set at the territorial level by FMD. FMD leads and coordinates policy, strategy, and planning at the territorial-level and manages territorial resources, including airtankers, and wildfire suppression budgets.

This type of structure has several advantages and disadvantages as listed below (Table 4):

Table 4: Hybrid Management Analysis

Advantages	Disadvantages
Provides decision-making and authority for preparedness and day-to-day wildfire activities at the regional level (close to the community).	Allows for inconsistency in decision-making, authority, and subsequent service levels for day-to-day activities, as regions modify processes and procedures to meet their own situations.
Allows for enhanced local and regional input to the implementation of the fire program. This includes regular communication with the public and key leaders, plus wildfire updates during times of high fire activity.	Constrains resource sharing between regions, as each region is accountable for its own results. It is more difficult to shift base resources from region to region to reflect changing demands and priorities.
Allows for prompt local decisions and actions regarding detection and initial attack activities.	Regions can more easily become overwhelmed with demands during periods of high-fire activity.
Provides for territorial control over key resources such as airtankers.	The lack of centrally managed and controlled processes and business rules makes it difficult to report on activities and spending at a territorial level.

All Canadian jurisdictions employ a combination of central management of policies, procedures, and key resources with regional or local presence. What is unique about ECC's model is that a small organization splits service delivery and authority between two levels within ECC, yet the responsibility and accountability for the program lies with WFMB. This disconnect has the risk of causing internal control, reporting, and accountability issues.

The issue of overall program coordination, control, reporting, and accountability was discussed through workshops and interviews to assess any potential issues related to the program structure and accountability. Specific issues identified through this process concerning the 2023 fire season that partly relate to the structure of the program include:

- **Responsiveness to Resourcing Needs of Individual Regions**. Excessive demands on regional employees commonly occur during periods of high activity. This happens in any season with high wildfire activity. While 2023 was an extreme year and the program was stressed in all regions; the regional team members were overextended and needed support. In some cases, the regional wildfire management team was isolated from the rest of the regional team and received limited additional support from within. The separation of responsibilities between FMD and regions made it difficult for FMD to control the movement of resources between regions to help support priority fire situations. This situation served as a structural barrier to the optimal deployment of the program's human resources.
- **Procurement and Expenditure Control**. At times, procurement, and expenditure control processes, that are part of a jurisdiction's Wildfire Management Program, are known to weaken during emergency situations. This is due to the sense of urgency experienced by wildfire management employees and vendors. In the case of the 2023 wildfire response, this was identified as an issue. Some of the issues related to a lack of resources and experience at the regional level to manage procurement processes and expenditure controls during an emergency. There are not enough experienced financial administrators for all five regions and the WFMB to tackle the excessive workload and challenges. Another concern was the procurement of heavy equipment that was often done without following normal procedures and at much higher costs than normal due to the emergency nature of the situation. Terms of the contract and costs were often unfavourable to the GNWT as arrangements were made without the benefit of the guidance of a more experienced financial administrator.
- **Expenditure Tracking and Reporting.** As noted, tracking, accounting, and reporting on expenditures and commitments was a significant issue throughout the 2023 wildfire season. This issue relates to the structure supporting the program as well as resourcing. Data entry and accounts payable fell behind, but in addition, some data that was entered wasn't properly recorded. Estimates, when needed, were not provided to WFMB on a priority basis. Consequently, it was not possible for WFMB to consolidate a full accounting of expenditures and obligations (expected future costs) and to report on the full program expenditure levels. At the time of this review, an accurate accounting of expenditures was not available. This makes program-level reporting and accountability difficult and delayed. Senior government leadership has difficulty understanding the full scope of the program activities and obligations.

Alternative means of organizing the program can be developed that maintain the benefits of regional presence, help improve the ability to meet local and regional needs and improve the

ability of the department to responsibly manage expenditures, and to report fully at a program level. The following features of a revised program structure accomplish this objective:

- Consolidate all Wildfire Management Program resources under Wildlife and Forest Management – Forest Management Division. Resources can be positioned in regional and territorial offices as required, recognizing the benefits of a regional presence, however, all aspects of wildfire management should be managed as a single program under the FMD.
- Consolidate all aspects of the forest management budget and expenditure control under the Wildlife and Forest Management–Forest Management Division with financial administration to be managed under the FMD. FMD becomes responsible and accountable for budgeting, hiring, contracting, inventory control, equipment maintenance and accounting functions.
- Establish an annual work-planning and budgeting exercise with all regions to establish plans for regional pre-suppression and preparedness activities including public communications, wildfire prevention, firefighter training, fire crew recruitment and management, and management of resources. Budgets are to be allocated annually based on work plans, territorial priorities, and any special one-time needs.
- Consistent hiring, contracting, and expense coding processes should be established and consistently used with all expenditures rolling up to a single program account and reported to senior management.

The change in program structure will be reflected in two fundamental changes—regional resources reporting to FMD, and a change in the program budget structure. In terms of budget structure, Table 5 and Table 6 show the current budget structure in summary form, with the first budget summary representing the territorial budget under FMD, and the second budget representing the wildfire management activities under regional control and authority.

Table 5: Current FMD Budget Summary

	FMD Rollup	Equipment Rollup	Comms, Training and Presuppression Rollup	Aviation Rollup	Operations & Suppression Rollup	Community protection & Disaster Comp	FMD HQ
Permanent Salaries	5,035,000	-	465,000	598,000	2,768,000	252,000	952,000
Casual Wages	893,000	-	-	-	699,000	-	194,000
Employee Benefits	478,000	-	55,000	102,000	110,000	43,000	168,000
Employee Related Costs	1,000	-	1,000	-	-	-	-
Total Compensation and Benefits	6,407,000	-	521,000	700,000	3,577,000	295,000	1,314,000

	FMD Rollup	Equipment Rollup	Comms, Training and Presuppression Rollup	Aviation Rollup	Operations & Suppression Rollup	Community protection & Disaster Comp	FMD HQ
Grants	100,000	-	-	-	-	100,000	-
Contributions	190,000	-	-	-	65,000	75,000	50,000
Total Grants and Contributions	**290,000**	**-**	**-**	**-**	**65,000**	**175,000**	**50,000**
Travel & Transportation	1,306,000	-	148,000	515,000	571,000	10,000	62,000
Materials and Supplies	1,110,000	-	50,000	9,000	991,000	34,000	26,000
Purchased Services	62,000	-	19,000	5,000	34,000	-	4,000
Utilities	1,199,000	-	-	-	1,199,000	-	-
Contract Services	14,406,000	-	84,000	12,092,000	1,947,000	-	283,000
Fees & Payments	87,000	-	74,000	-	5,000	-	8,000
Other Expenses	-						
Tangible Assets	105,000	105,000	-	-	-	-	-
Computer Hardware and Software	3,000	-	3,000	-	-	-	-
Total O&M	**18,278,000**	**105,000**	**378,000**	**12,621,000**	**4,747,000**	**44,000**	**383,000**
Total	**24,975,000**	**105,000**	**899,000**	**13,321,000**	**8,389,000**	**514,000**	**1,747,000**

The regional budget associated with wildfire management is shown below (Table 6).

Table 6: Regional Wildfire Management Budget Structure

	South Slave	North Slave	Sahtu	Dehcho	Beaufort Delta
Permanent Salaries	995,000	667,000	385,000	801,000	465,000

	South Slave	North Slave	Sahtu	Dehcho	Beaufort Delta
Casual Wages	16,000	16,000	-	25,000	-
Employee Benefits	157,000	115,000	55,000	121,000	69,000
Employee Related Costs	-	1,000	-	-	-
Total Compensation and Benefits	**1,168,000**	**799,000**	**440,000**	**947,000**	**534,000**
Grants	-	-	-	-	-
Contributions	-	-	-	-	-
Total Grants and Contributions	-	-	-	-	-
Travel & Transportation	8,000	11,000	5,000	15,000	18,000
Materials and Supplies	27,000	23,000	-	31,000	19,000
Purchased Services	8,000	13,000	2,000	11,000	7,000
Utilities				13,000	
Contract Services	1,378,000	1,263,000	393,000	469,000	11,000
Fees & Payments	-	-	-	2,000	7,000
Other Expenses	-	-	-	-	-
Tangible Assets	-	-	-	-	-
Computer Hardware and Software	1,000	-	-	-	-
Total O&M	1,422,000	1,310,000	400,000	541,000	62,000
Total	**2,590,000**	**2,109,000**	**840,000**	**1,488,000**	**596,000**

With the changes recommended above, the budget will be consolidated to include the WFMB wildfire program activities along with the wildfire management aspects of the regional budgets. This will be represented as a single program budget summarized below with territorial budgets and budgets set aside for regional functions identified. Regional budgets would be allocated based on an annual program review identifying local and regional priorities and needs (Table 7).

Table 7: Recommended Program Budget Structure

	Territorial Services	Regional Services	Total Program
Permanent Salaries	5,035,000	3,241,000	8,276,000
Casual Wages	893,000	57,000	950,000
Employee Benefits	478,000	505,000	983,000
Employee Related Costs	1,000	1,000	2,000
Total Compensation and Benefits	6,407,000	3,804,000	10,211,000
Grants	100,000	-	100,000
Contributions	190,000	-	190,000
Total Grants and Contributions	290,000	-	290,000
Travel & Transportation	1,306,000	51,000	1,357,000
Materials and Supplies	1,110,000	94,000	1,204,000
Purchased Services	62,000	36,000	98,000
Utilities	1,199,000	13,000	1,212,000
Contract Services	14,406,000	3,510,000	17,916,000
Fees & Payments	87,000	9,000	96,000
Other Expenses	-	-	-
Tangible Assets	105,000	-	105,000
Computer Hardware and Software	3,000	1,000	4,000
Total O&M	18,278,000	3,714,000	21,992,000
Total	24,975,000	7,518,000	32,493,000

Key Findings

- The current hybrid structure with territorial-level responsibility for the Wildfire Management Program overall and regional delivery of pre-suppression and other base level operational aspects of the program resulted in an inability to effectively manage the program overall. This means that it was difficult to demonstrate and account for expenditure controls, activities, and total costs. Tasks to be completed at the regional level in support of wildfire

management program objectives were often found to be incomplete or inconsistent as regions are not accountable for the program.

- The structure detracted from the ability to meet changes in priority resourcing needs in specific regions as there was no single decision maker with authority to allocate base resources between regions as needed. This structure served as a barrier to the optimal deployment of the program's human resources.
- It was difficult to provide the finance and administration personnel within each region to effectively manage procurement processes and expenditure controls during an emergency. There were and are not enough experienced financial administrators for all five regions and FMD to tackle the excessive workload and challenges. A more centralized approach to finance and administration specific to wildfire response is needed to meet accountability requirements placed on the FMD.

Recommendations

11.1. Consolidate the regional and territorial aspects of the Wildfire Management Program into a single program with a single consolidated budget and financial reporting structure. The program's human resourcing, budgeting, and reporting should be consolidated under Wildlife and Forest Management, with regionally located resources reporting to the Forest Management Division. Budget allocations should be determined on an annual basis through a work planning and prioritization exercise.

Recommendation and Opportunities Matrix

The table below provides a listing of all recommendations and opportunities for each of the 11 themes. The assignment of accountabilities is based on a high-level understanding of departmental mandates during the review. All recommendations and opportunities for improvement have ECC noted as accountable. However, in some cases, it is recognized the authorities and responsibilities either are shared with or may rest with another department, such as MACA. In some cases, GNWT is noted, and this is intended to present where a whole-of-government approach may be required. A more limited number of recommendations are noted to include "other" entities – this may include municipal or local governments, Indigenous Governments or other GNWT departments.

Table 8: Recommendations and Opportunities Matrix

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
1 – Fire Behaviour Modelling	1.1 Invest in wildfire behaviour modelling software that is current, nationally accepted, and well-supported.		✘			
	1.2 Invest in systems and research to update fuel, weather, and topography data to the minimum acceptable scale.		✘			
	1.3 Invest in training ECC's five wildfire behaviour modelling employees in the selected modelling software and continue with plans to expand the number of trained employees able to support wildfire behaviour modelling.		✘			
		1A – Explore and determine the appropriate balance between increasing internal expertise and leveraging external contract resources for weather forecasting, as well as for long-term	✘			

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
		climate prediction.				
2 – Human Resources – Capacity	2.1 Expand culturally appropriate mental health services, tailor them for a firefighter audience, and promote them to wildfire management team members. Provide management and team leader-level training on trauma-informed practice and critical incident stress.		✘		✘	
	2.2 Implement formal team appreciation initiatives that foster a culture of commitment and accountability. This will complement the informal appreciation and gratitude from senior ECC employees and team leaders.		✘			
	2.3 Increase the organization's emphasis on recruitment and retention of firefighters and add a minimum of two firefighter crews, with associated overhead support, to better cope with the frequency of extreme weather events.		✘			
		2A – Conduct scenario planning for resourcing, with extreme seasons like that of 2023 in mind, to test if the current structure of resource allocation and resource sharing agreements is sufficient, and better prepare for a range of possible outcomes.	✘			

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
3- Human Resource – Training and Skills Management	3.1 Compare and analyze the costs/benefits of starting crews earlier with one cycle of centralized training, against staggering crew start dates and doing multiple cycles of training. Consider expanding fire crew member responsibilities in the event of late wildfire seasons to avoid costly idle time. Weight the pros and cons, including budget implications, to inform decisions.		✘			
	3.2 Further support and formalize the MACA cross-training initiative and secondment opportunities with other parts of ECC and GNWT departments to expand local capacity for IMTs, wildfire management roles, and support functions.		✘			
	3.3 – Develop a robust qualification, certification, and skills tracking system for ECC and other GNWT employees, as part of the GNWT Wildfire Management Certification and Qualification Manual (Government of Northwest Territories, 2021). Ensure the system is easily accessible, consistently updated, and diligently maintained.		✘		✘	
	3.4 – Develop an alternate fitness standard that can be applied to crew members that are designated as territorial resources only (i.e., not for export duty) to support coaching and mentoring local personnel.		✘			

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
	3.5 – Establish specialized wildfire operations teams to evaluate and oversee complex operations such as indirect attacks (a tactic of working away from the wildfire's perimeter to get rid of forest fuel in the wildfire's path).		✘			
		3A – Implement a formal mentoring program allowing the transfer of skills and experience from veteran firefighters to recruits. Access mutual aid partners (other provinces and territories under a mutual aid agreement that promotes and facilitates emergency management assistance between provinces and territories before, during and after a major event) to import mentors if needed.	✘			
		3B – Continue the use of retired resources to supplement operational support when needed and ensure those individuals are placed in roles that they are qualified for and where their experience is current.	✘			
		3C – Promote export opportunities for employees to learn from experts in other jurisdictions, in turn increasing expertise within the NWT upon their return.	✘			
4 – Aviation	4.1 – Participate, where possible, in the development of *Forest Act* regulations to help		✘			

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
Resources	ensure clarity with respect to authority to access aircraft otherwise engaged in contractual obligations to provide services to another party. It is recommended the topic of pilots be included in these discussions.					
	4.2 – Once *Forest Act* regulations have been developed and enacted, create an SOP to guide employees on the process of accessing aircraft and pilots otherwise engaged in contractual obligations to provide services to another party.		✘			
	4.3 - Develop an aircraft selection SOP or add aircraft selection guidance to the *Aircraft Briefing Manual*.		✘			
		4A - Review procedures, training, and awareness regarding incident reporting.	✘			
5- Equipment Management and Infrastructure		5A - Create an online module completion tracking system to ensure the appropriate people are keeping up to date on required training for effective *ToolHound* use.	✘			
		5B – Assess *ToolHound* use across regions and warehouses to document practices and identify inconsistencies and opportunities for full feature implementation. Subsequently, create a strategy and implementation plan with	✘			

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
		clear timelines and accountabilities.				
		5C - Continue efforts to establish and complete backup communications networks that are resilient to wildfire disruptions, along with related protocols and training. Implement remote network maintenance and backup systems.	✘		✘	
6 - Incident Command System Discipline	6.1 Ensure a broader range of ECC employees have appropriate ICS training.			✘		
	6.2 Advocate for more ICS training in GNWT departments in addition to MACA and ECC, as well as within NWT communities.		✘	✘	✘	✘
		6A - Enhance training and education of the benefits to reporting ICS protocol non-compliances to enable reviews and learnings. Perform regular reviews/investigations of reported incidents and published findings summaries, along with lessons learned and opportunities for improvements.	✘			
7 - Policy, Strategy, and Procedures	7.1 - Review and modernize a comprehensive approach to SOP training and make physical SOP binders available at the start of each season. Track binder locations and use spot audits and other tactics to keep the binders updated. Circulate and clarify the online pathways for accessing SOPs and the Wildfire		✘			

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
	Strategy.					
	7.2 - Review and modernize the AAR system, and implement processes to track, monitor and incentivize adhere. Use AARs to help create a Lessons Learned system.		✘			
		7A - Conduct periodic audits related to policy and SOP compliance and engage employees from all levels to determine barriers and opportunities to awareness, education, and compliance.	✘			
		7B - Refine and finalize the Required Planning for Wildfire Events document and ensure that the integration with software is clear and consistent (i.e., EMBER or SPARCS).	✘			
8 - Wildfire and Wildfire Response Information Sharing	8.1 Reaffirm with the relevant government departments which department is responsible for responding to each of the various types of misinformation. Consider the different partners and employee counterparts that should be included in this conversation (political leaders, ECC, MACA, Health, etc.).		✘	✘	✘	✘
		8A - Continue Investment in off-season community engagement and education events to provide the public with information on the responsibilities of various government agencies related to	✘			

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
		wildfire response, highlight proper communication channels, and improve understanding of how resources are deployed and prioritized.				
9 - Coordination with Municipal Governments and Indigenous Governments	9.1 - ECC/FMD wildfire employees and community structural firefighters should engage with one another during the offseason in simulated wildfire scenarios for areas where jurisdiction is unclear. This will help all involved understand roles and responsibilities and support continuous improvement.		✗	✗		
	9.2 - Develop MOUs between ECC and municipalities and Indigenous Governments to document future areas of cooperation and commitments.		✗	✗		
	9.3 - Conduct Intergovernmental tabletop exercises to help ECC, Municipal Governments, and Indigenous Governments understand each other's concerns for their employees in the event of an evacuation order and predict the challenges that would cause confusion around the go/stay decisions for different groups (EMO, health, food service, and policing).		✗	✗	✗	✗
		9A - Continue discussion around "essential workers" to attain further clarity and formalize a definition.	✗	✗	✗	

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
		9B - Continue regular practice of assigning an ECC Agency Representative (AREP) to the local government's Emergency Operation Centre (EOC) when activated to increase info flow, improve relationships, and build trust.	✗	✗		
10 - Prevention and Community Protection	10.1 - Define and communicate roles and responsibilities for community protection projects and ensure that maintenance is planned into the future. Confirm who will initiate them, who will plan and resource them, who will conduct them, who will maintain them, and how the public can support them.		✗	✗		
	10.2 - Consult with Municipal Governments, Indigenous Governments, and the public to bring the VAR registry up-to-date, inclusive of natural and cultural values, and ensure check-ups are conducted as expected.		✗	✗	✗	
		10A - Enhance promotional efforts of the FireSmart program for various audiences, including the use of fuel breaks.	✗	✗		✗
		10B - Continue to explore the use of preventative forest management procedures, including prescribed burns with partners.	✗			

Theme	Recommendations	Opportunities for Improvement	Accountability Entity/Entities			
			ECC	MACA	GNWT	Other
11 - Budgeting and Reporting Structure	11.1 Consolidate the regional and territorial aspects of the Wildfire Management Program into a single program with a single consolidated budget and financial reporting structure. The program human resourcing, budgeting, and reporting should be consolidated under Wildlife and Forest Management, with regionally located resources reporting to Forest Management Division. Budget allocations should be determined on an annual basis through a work planning and prioritization exercise.		✘			

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Appendix A: What We Heard Report

Northwest Territories 2023 Wildfire Response Review

What We Heard Report

June 2024

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Acknowledgement

To create this report, engagement sessions were conducted throughout the Northwest Territories; it is acknowledged with respect and gratitude that they took place on the traditional territories of three distinct Indigenous Groups across the territory: First Nations, Inuvialuit, and Métis.

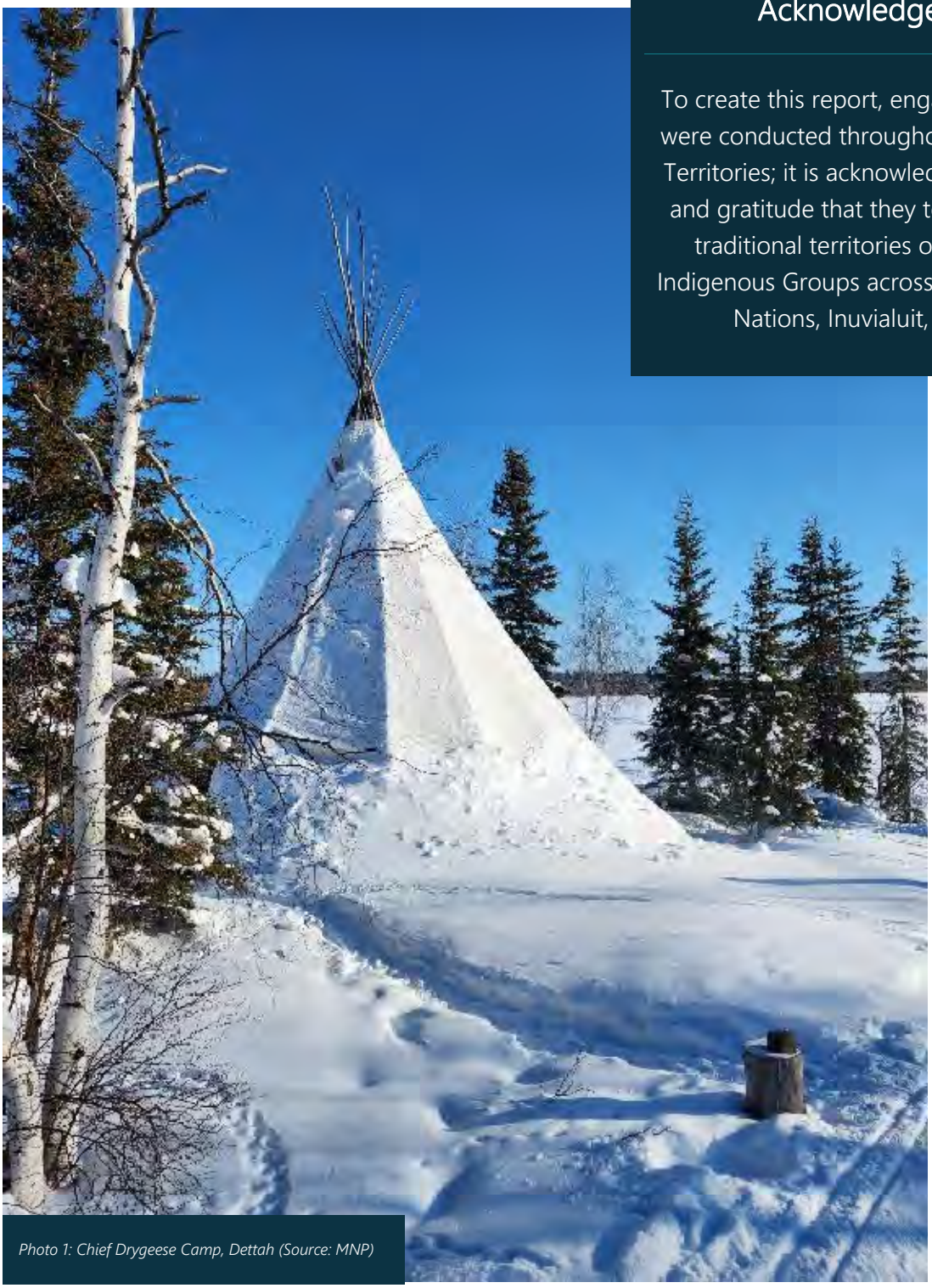

Photo 1: Chief Drygeese Camp, Dettah (Source: MNP)

Executive Summary

The purpose of this report is to reflect what was heard through third-party engagement of those who supported the Northwest Territories during the 2023 fire season. Hosted by MNP on behalf of the Department of Environment and Climate Change (ECC), engagement activities were carried out between February 2024 and March 2024. The focus of this engagement was to better understand the Government of Northwest Territories and ECC's preparedness and response to the 2023 wildfire season. This report is part of a larger comprehensive report that includes an overview of the 2023 fire season, a detailed review of actions taken on the ZF015-13 (also Behchokǫ̀ wildfire) and SS052-23 (also Enterprise wildfire) wildfires, and a structured evaluation of ECC's effectiveness with regards to preparedness and response, and observations and recommendations going forward.

The people engaged during this review are past, current, seasonal, and out-of-territory workers and stakeholders who supported fighting the many fires that occurred during the 2023 season. Their roles are diverse and include, but are not limited to firefighters, managers, team leads, officers, directors, Royal Canadian Mounted Police, Senior Administrative Officers, mayors, fire chiefs, ministers, operators and more. In total, 104 ECC staff and select stakeholders were involved in sharing insights and feedback to develop this report.

The engagement process was designed to collect information from Government of Northwest Territories employees and those involved in the wildfire response. Engagement methods included regional office workshops, one-on-one in-person and virtual interviews, and virtual workshops. The engagement focused on ECC's response to the wildfires, by encouraging participants to reflect on their involvement in related wildfire activities, decision-making, communications, the use of technology, tools and equipment, and key collaborations and partnerships. Participants were also asked to provide their perspectives on the strengths of the response as well as the challenges encountered and opportunities for improvement.

It is important to note that this report reflects "what we heard" from participants about their experiences during the 2023 wildfire season. Where possible the report includes multiple perspectives that reflect the range of experiences and contexts. Some of the information shared by participants may not reflect the experiences or observations shared by others. Where possible these discrepancies and/or alignments are identified. This What We Heard Report should not be considered a standalone report and should be read in conjunction with the Wildfire Response Review Report.

This report reflects a commitment to listen to key participants about their experiences and perspectives related to the 2023 wildfire season. As such, participant engagement was conducted with a trauma-informed approach with safety protocols in place. To maintain anonymity, the people engaged in this review are referred to as "participants" and generic language such as "regions" and "partners" is used in this report. Participant involvement was voluntary, and often occurred during participant "off-time".

Throughout the engagement, several key themes emerged:

Human Resourcing and Supports

- Dedication of the Team
- Workload and Impact on People
- Fitness for Work
- Mental Health Supports
- Accountability
- Timing of Training
- Training Programming
- Mentoring
- "Essential Worker" Definition

Machinery and Equipment Resourcing

- Heavy Machinery and Air Support
- Equipment Tracking
- Resource Allocation

Policies, Processes and Procedures

- Debrief Procedures
- Standard Operating Procedures
- Procurement Process

Fire Prevention

- FireSmarting Role

Communication

- Communication Channels
- Information Technology

The review team is grateful for the time participants took to share their insights and experiences from the 2023 season. Their passion, devotion to safety and tireless efforts to protect northern communities does not go unrecognized.

Source: MNP

Contents

Table of Acronyms

Acronym	Meaning
CIFFC	Canadian Interagency Forest Fire Centre
Department	Department of Environment and Climate Change
ECC	Department of Environment and Climate Change
EFAP	Employee and Family Assistance Program
EFF	Extra Firefighter
EMO	Emergency Management Office
FMD	Forest Management Division
GNWT	Government of Northwest Territories
ICS	Incident Command System
IG	Indigenous Government
IMT	Incident Management Team
IO	Indigenous Organization
MACA	Municipal and Community Affairs
NWT	Northwest Territories
RCMP	Royal Canadian Mounted Police
RDO	Regional Duty Officer
SAO	Senior Administrative Officer
SOP	Standard Operating Procedure
TDO	Territorial Duty Officer

Introduction

Wildfires in the 2023 Season

Wildfires are a natural phenomenon that plays a role in sustaining healthy forest ecosystems. However, in recent years, the frequency, intensity, and duration of wildfires have increased substantially due to a combination of factors, including climate change and human activity. Wildfires have the potential to threaten human life, damage or destroy private property and public infrastructure, and damage natural and cultural resource values important to the way of life for many residents both in the Northwest Territories (NWT) and across Canada.

In 2023, the NWT experienced unprecedented impacts and disruptions to communities due to wildfires; the impacts of two specific fires Behchokǫ̀ (ZF015-13) and Enterprise (SS052-23) were especially extreme. As a result of these fires, it is estimated that, four structures in Behchokǫ[1] and 80 to 90 percent of the structures inEnterprise[2] were lost. The fire response activities also resulted in 34 reported incidents to the Workers Safety and Compensation Commission, the tragic loss of one Fort Liard firefighter, and the destruction of approximately 30-50 structures. The intensity of these fires was due, in part, to drought and weather conditions not experienced in previous seasons. Many fires burned deep into the ground, resisting suppression efforts in ways previously thought uncommon. Additionally, the fires experienced in the 2023 season often created their own weather patterns.

Over 3.4 million hectares across NWT were burnt in over 300 fires during the summer of 2023. The fires resulted in the evacuation of more than two-thirds of NWT's population of approximately 45,000 residents in 19 community evacuations. See the Wildfire Response Review Report to understand how the 2023 fire season compared to previous fire seasons.

Wildfire management is the responsibility of the Department of Environment and Climate Change (ECC) which has 486 staff members, 142 of which are actively involved in the fire program. There are five regional forestry operations offices including Sahtu, Beaufort Delta, Dehcho, North Slave, and South Slave. The regional offices report to the Superintendent under the Operations branch but take guidance and direction from the Forest Management Division (FMD) office located in Fort Smith, South Slave region.

In 2023, the Government of the Northwest Territories (GNWT) had 46 firefighters and 22 four-person contract crews, totalling 134 firefighters, spread throughout the regions. In addition, 31 crews (620 people) and 102 overhead were brought in through the Canadian Interagency Forest

[1] The total structures lost in Behchokǫ vary depending on the source. A total of four structures lost have been used as it was confirmed by a Behchoko engagement participant in a senior leadership position.

[2] A loss range of 80-90% has been used as differing accounts of the loss percentages were provided, depending on the source. Sources include senior administrative officials of affected communities and major media, including CBC and Global.

Fire Centre (CIFFC) from other provinces and countries, as well as, one 20-person crew and eight overhead were brought in through the Northwest Compact.

Review of the 2023 Season

Given the escalating threat of wildfires in a changing environment, ECC commissioned MNP LLP (MNP) to provide an independent third-party review of their wildfire management program during the 2023 season. This review recognizes wildfires as a significant and natural phenomenon. It applies environmental, social, and economic criteria to understanding wildfire management decisions that prioritize human life and other values at risk. It also incorporates an understanding of local knowledge, government policies, and a consideration of Indigenous Section 35 rights. The review team, comprised of 12 individuals, understands that wildfires are inevitable and oftentimes unpredictable.

This What We Heard Report (WWHR) is a component of the overall review and represents a summary of the themes and key takeaways expressed by participants engaged by MNP. It also represents multiple, and sometimes differing, perspectives based on the experiences of a wide range of individuals with varying roles and responsibilities. This report was not designed and should not be considered a standalone report. It should be read in conjunction with the Wildfire Response Review Report. The WWHR reflects a commitment to listen to key participants about their experiences and perspectives related to the 2023 wildfire season.

The insights and perspectives gathered in this WWHR will help to inform the Wildfire Response Review Report, comprising additionally of a chronology of events, an assessment of ECC's overall wildfire response, and a structured evaluation of ECC's preparedness for the 2023 wildfire season. The Wildfire Response Review Report will also include recommendations aimed at enhancing the readiness and effectiveness of ECC and the GNWT for future wildfire responses.

Project Purpose

The purpose of this project is to conduct a third-party review of ECC's preparedness for and response to the 2023 wildfire season. It aims through a review and critical analysis to identify areas where successful efforts should be sustained and where potential improvements to wildfire operations should be made. This WWHR is part of a larger comprehensive report that includes the following four subject areas:

1) A description of the 2023 wildfire season to provide context, an understanding of events, insight into decisions and actions, and a picture of results.
2) A detailed review of actions taken on two specific wildfires (Behchokǫ̀ and Enterprise), to identify potential issues and opportunities for improvement.
3) An evaluation of the effectiveness of the ECC's preparedness and response to the 2023 wildfire season through a formal program evaluation framework, including a review of budgets, administrative systems, standard operating procedures and/or program structures.

4) Observations, conclusions, and key recommendations to assist GNWT in improving the effectiveness of the wildfire management program moving forward into future fire seasons.

Methodology

The engagement process was designed to collect information and perspectives from GNWT employees and those involved in the wildfire response. The engagement focused on ECC's response to the wildfires and encouraged participants to reflect on their involvement in related wildfire activities, decision-making, communications, the use of technologies, tools and equipment, policies and procedures, and key collaborations and partnerships. Participants were also asked to provide their perspectives on the strengths of the response as well as the challenges encountered and opportunities for improvement.

The engagement methodology was informed by, and refined through, conversations with ECC project members and leaders from the FMD. Draft facilitated workshop and interview guides were circulated to ECC project members for review and prior approval.

Engagement participants were identified by the Regional Office Managers of Forestry Operations and ECC project members and consisted of regional and territorial leaders, staff, and select stakeholders who were directly involved in wildfire activities and connected to regional office staff. Considerable effort was dedicated to promoting psychological and cultural safety during engagement sessions. Each participant was contacted via email or phone and provided information about the project and invited to participate. Where necessary, multiple follow-up attempts were made. Throughout the process, additional individuals and demographic groups were identified as key stakeholders, all of whom were contacted and invited to participate. Engagement activities included the following:

Regional Office Workshops

Half-day and full-day in-person workshops with regional ECC office staff were facilitated in the Sahtu (Norman Wells), Beaufort Delta (Inuvik), South Slave (Fort Smith), and North Slave (Yellowknife) regions.

FMD Workshop

A full-day in-person workshop with the Forest Management Division staff was facilitated in Fort Smith.

Virtual Workshops

Two-hour virtual workshops were facilitated for multiple demographic groups including the Dehcho (Fort Simpson) Regional Office staff, FMD staff, and RCMP.

Interviews

One-on-one interviews were conducted with staff and select stakeholders both in-person and virtually.

All engagement was directed through pre-approved guides which allowed for an open-ended, semi-

structured approach to guide conversations while still ensuring key data points were explored. The Internal Interview Guide, External Interview Guide, and Workshop Guide are in Appendix A, B, and C, respectively.

All engagement activities followed principles from the International Association for Public Participation (IAP2) Foundations of Public Participation, including identifying the level of engagement, clearly communicating the purpose of each engagement session, information collection and mobilization, and next steps.

Summary of the Engagement Approach

Participation in the review was voluntary and participants were informed that the views and opinions shared throughout their engagement would be anonymous. No video or audio recordings were made during the interviews or group discussions, and any notes taken by the MNP team were not shared with ECC or any other party. The parameters of the engagement were provided to all participants prior to the sessions via email and in person before the workshop or interview (Appendix D).

The review team recognized the emotional and mental impact the 2023 wildfire season may have had on workshop and interview participants. Trauma-informed approaches and in-person engagement sessions that were designed to be broadly accessible were prioritized throughout the engagement sessions. Norms related to safety and accessibility were established such as assuring participant anonymity in the reporting and the opportunity to pause when needed during the session. In each of the workshops and interviews, at least one of the MNP facilitators was trained in mediation or trauma-informed approaches with experience in conducting engagements that support cultural and psychological safety.

Summary of Engagement

In February and March 2024, MNP conducted four in-person regional office workshops, one in-person FMD workshop, three virtual workshops, and 57 in-person and virtual interviews. The engagement schedule is detailed in the table below.

In total, 141 people were invited to participate in the engagement. Of the 141, 105 individual perspectives are considered in this report. Communication logs were made available to ECC by MNP. However, these are not included in this report.

Table 1: Summary of Engagement

	Workshop	Interviews
	Date	**Date**
Sahtu	February 13, 2024	February 14, 2024
Beaufort Delta	February 15, 2024	February 15, 2024 February 16, 2024
Dehcho	February 19, 2024	February 19, 2024
South Slave	February 22, 2024	February 22, 2024
Forest Management Division	February 23, 2024	February 22, 2024
North Slave	February 26, 2024	February 20, 2024 February 21, 2024 February 27, 2024
Behchokǫ̀		February 26, 2024
Enterprise		February 28, 2024
Hay River		February 29, 2024
Virtual Interviews		February 2024 – March 2024
Forest Management Division Virtual	March 14, 2024	
RCMP Virtual	March 18, 2024	
Dehcho Virtual	March 25, 2024	

Project Limitations

While MNP worked directly with ECC and their partners to identify and engage key stakeholders, not everyone was available to meet with the team during the established time frame. The project team expanded engagement activities beyond the original scope of five to six in-person sessions plus 12 to 15 interviews to 57 interviews, five in-person engagement sessions and three additional virtual workshops. Multiple efforts were made to reach stakeholders and partners. Where it was not possible to engage key individuals, all efforts were made to ensure proxies or people in similar roles participated to best reflect a diversity of perspectives in this report. Additionally, several attempts were made to contact and facilitate a workshop with fire crews, however, these efforts were not successful.

Analytical Approach

The MNP engagement team took detailed notes during each workshop and interview. In preparing the WWHR, direct quotes were used in some sections to emphasize the information heard and highlight the voices of the participants.

Thematic analysis was used to examine the information collected during engagement sessions. Thematic analysis is a standard qualitative research methodology that involves coding or grouping text-based data (i.e., statements and/or observations) based on similarities. Once information was coded for this report, information was further refined and grouped to reveal key themes. Key regional differences are also included to ensure a true representation of each regional experience.

What We Heard: Key Themes

The key themes, detailed below, provide a consolidation of shared viewpoints and experiences heard from individuals directly involved in the 2023 wildfire season. The engagement sessions were semi-structured and conducted using open-ended questions to allow participants to actively engage on unanticipated themes. The engagement information may be categorized into multiple themes, reflecting the interconnectedness of the shared experiences.

Human Resourcing and Supports

Dedication of the Team

Participants, both internal and external to ECC, expressed recognition of the hard work of all team members during the 2023 wildfire season. Participants from all regions shared that ECC and their partners were dedicated in their response to the unprecedented conditions of the 2023 fire season.

Participant Quote:

"Even if we had unlimited resources, the outcomes would not have changed. The conditions were too extreme."

Workload and Impacts on People

Engagement participants in all regions highlighted shortages of labour and skills in the fire management sector as key barriers to effective fire management practices. Participants expressed concern that labour and crew shortages can result in burnout, mental health concerns, trauma, and compromised decision-making. Participants shared that during previous fire seasons provinces such as Alberta and British Columbia were able to provide resources to NWT. In 2023, the concurrent provincial and territorial fire seasons strained resources across the country. The engagement participants also observed that resource shortages became pronounced as the season progressed, and as evacuations and the number of fires increased.

- Engagement participants reported exceeding their work-day hours, work tasks outside of the scope of their job descriptions, and physical tasks that pushed their sense of safety.

- Participants voiced concerns about the lack of redundancy in roles. When individuals in key positions took leave from work, a gap was created. Reportedly, this was either filled by individuals without training and/or experience, or another staff member took on the responsibility in addition to their assigned role. Participants also shared that the lack of redundancy in roles was especially prevalent during the evacuations or when team members were exported to other regions in need.

Participant Quote:

"People are wearing multiple hats and trying to juggle multiple duties."

- Participants shared that the extreme conditions of the 2023 wildfire season contributed to increased workload because of concurrent fires across the territory and the evacuations.
- Some participants observed there was an insufficient number of firefighters/fire crews. One region indicated that they used to have 15 crews of five (a total of 75 firefighters) and now they have approximately half the number of fire crews/fighters).
- Most participants expressed the need for surge capacity in response to the unprecedented conditions of the 2023 wildfire season.

Participant Quote:

"We did not have the crews for the type of work needed to conduct necessary fire suppression activities."

Fitness for Work

Engagement participants in all regions shared concerns regarding the use of substances by crews and the subsequent impacts these may have had on fire response activities, including capacity and safety.

- Some participants observed that some crew members and Extra Firefighters (EFF) exhibited signs of substance use while on duty or at the start of their duty shifts.
- Regions shared incidents of sending home crew members who exhibited signs of using substances. In some instances, this led to staffing shortages and increased pressure on remaining team members to fulfill their duties. Regions shared that enforcement of policies against cannabis use proved challenging due to its "discreet nature", making it difficult to detect and regulate effectively among operations staff.
- Some participants shared having to make subjective judgment calls in relation to crew fitness and readiness for work.
- In some regions, there were reports of medical emergencies on the fire line or in camps relating to the use of substances.
- No participants faulted substance use as responsible for the unprecedented nature of the fires. Some participants observed that fire crews and EFFs may be dealing with unresolved trauma.

Mental Health Supports

Mental health and wellness were dominant themes in all engagement sessions across all regions. The extreme conditions of the 2023 wildfire season emotionally impacted staff members, with participants describing the accommodations necessary to handle the workload. Reflecting on the past five months, participants expressed that the current mental health supports available are insufficient or rarely utilized (if available).

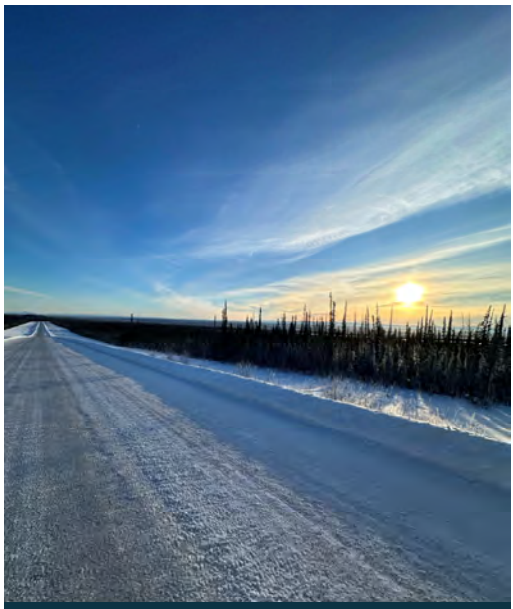

Photo 2: Winter Road Near Norman Wells (Source: MNP)

- One contributing factor preventing people from seeking mental health support, as identified by participants, is the stigma or "hyper-masculine attitudes". Participants reported they do not feel comfortable admitting they are burnt out, mentally struggling, or in need of time off.
- Many participants shared that they believe they now have post-traumatic stress disorder (PTSD) because of the events from last season.
- Multiple participants indicated that there are challenges with the Employee and Family Assistance Program (EFAP); some said that the counsellors do not understand the complexities and implications of living in NWT and may not be culturally sensitive. Participants noted the counsellors working at the EFAP program may not have adequate skills to help with the complexities and severity of events and feelings experienced by ECC staff.
- One manager noted that the EFFs do not qualify for the EFAP program, resulting in a gap in support and services for that demographic. Similarly, not all municipal fire departments reported having access to trauma supports.

Accountability

Participants observed that all regions are struggling to fill fire crew positions. According to participants, one common consequence of the limited labour pool and fire crew shortage was the lack of appropriate consequences for misconduct by staff. Participants observed that crewing challenges resulted in lax enforcement of disciplinary measures in response to tardiness, use of substances, unauthorized phone usage while on active duty, and instances of personnel abandoning their assigned posts for extended periods. These observations were coupled with expressions of empathy for those employees and firefighters whose families were evacuated and whose communications were cut off.

Several participants also expressed concern with a lack of accountability demonstrated by some crews/firefighters. This was attributed to a lack of pride and collegiality in the culture of certain crews. Some participants expressed concerns regarding a perceived decline in the workplace culture that is typically characterized by a sense of familial cohesion, pride in one's work, and a readiness to engage in firefighting duties.

Participants also expressed concerns about the lack of staff recognition across all levels of the organization. A sense of blame coupled with demands to hold a public inquiry into the territory's wildfire response exacerbated these feelings. Participants emphasized the need to improve staff morale to better prepare for forthcoming fire seasons.

Timing of Training

Participants in all regions shared that one of the central challenges faced by ECC at the onset of the season was the timing of training for fire crews. Several participants with many years of experience in the North noted their concern that the fire season has been starting earlier each year. These same participants shared that the timing and duration of crew contracts have remained unchanged.

Participant Quote:

"The fire crews are doing the job because we need them to do it – but we are not making sure their safety is paramount."

- ❖ FMD shared that the timing and duration of the contract crews were changed in 2023 with an increase of two weeks made possible through a forced growth funding increase.
- ❖ Regional Office participants agreed on the need to adjust the crew training start date and ensure training is not scheduled during active fire response activities. They suggest commencing training earlier would potentially prevent or lessen incidents of exporting under-trained fire crews to the fire lines.

Training Programming

The Incident Command System (ICS) is essential for providing organizational structure and consistency when responding to an emergency such as a wildfire. While some participants in the regions observed that ICS was in place and working well, several shared the contradictory perspective that ICS was not adequately followed, resulting in unnecessary challenges. At the same time, participants also observed that breakdowns in the ICS primarily occurred during the height of the wildfire season, when multiple wildfires across NWT and Canada began exhibiting unprecedented behaviours, straining the already taxed system**.** It is important to note that while participants did not suggest ICS breakdowns led to loss of control of fires, there were concerns in relation to ICS and the overall response. Further gaps in training were noted several times regarding Standard Operating Procedures (SOPs), including a lack of awareness and access.

- ❖ While ICS was largely praised by participants as a clear and effective system for emergency management, gaps in the adherence to ICS were identified. For example, several participants described incidents where some pilots disregarded directives given by the Incident Commander or the Duty Desk and made calls themselves on where drops were made.
- ❖ Regions widely reported that crew leaders do not have easy access to the SOPs. They reported this lack of awareness creates risks and challenges when they are making decisions on the ground.

- Participants shared that on some occasions there were deviations in the ICS chain of command; most notably during the Enterprise (SS052-23) fire. During that fire, several participants shared that people did not adhere to the proper communication channels, people overrode the Regional Duty Officer (RDO), and some communications were prioritized based on personal relationships. While frustration with communication delays was evident, no one reported that deviations in the ICS chain were directly correlated with the damage caused by the Enterprise fire and occurred after structures were damaged.

> Participant Quote:
>
> "Having individuals come out of retirement to help out last season was instrumental to the success of some activities."

- Participants shared that a lack of awareness of the ICS resulted in some elected and senior executives inserting themselves into the emergency response efforts.
- Participants observed that there was an insufficient number of wildfire specialists employed to meet the needs of the 2023 wildfire season. As a result, multiple retired individuals were hired back to fill the gaps in technical capacity. Regions agreed that there is a need to invest more in training staff in the technical aspects to create a pool of internal specialists.
- Challenges related to the lack of redundancy in roles and training were frequently discussed. Participants noted the training completed by staff did not create an overlap of knowledge, resulting in select individuals being responsible for multiple duties.
- Participants explained that the National Fitness standard WFX-FIT, which is a requirement in the NWT and for ECC staff, created challenges. Several participants stated that the WFX-FIT poses a barrier for returning retiree staff, including those who act as mentors, and restricts which positions and locations they can occupy. Multiple regions shared a desire to develop a third-level fitness standard for retired personnel which would allow them to return and continue imparting knowledge to the current team.

Mentoring

Some participants observed that individuals with years of fire experience are invaluable resources. They expressed concern that upcoming retirements will create gaps in experience and institutional knowledge which can be detrimental to wildfire response activities. However, other participants shared that while they believe there is a role for mentoring, they cautioned that some past knowledge and/or approaches are not always applicable to the types of fires witnessed more recently. These participants shared experiences where some retired personnel, not trained in new approaches, implemented approaches not suitable to the current conditions and specific fires.

- Participants widely shared that they are experiencing high turnover rates, resulting in underqualified and/or under-experienced people receiving promotions.
- As above, high turnover rates create a gap in knowledge and experience; there was a strong desire from participants to prioritize creating space for knowledge transfer and mentorship opportunities.

"Essential Worker" Definition

Participants expressed concern over the lack of an essential services list for evacuations, resulting in key people (including ECC staff, medical personnel, food preparation, supply chain, and RCMP) evacuating and leaving the community without essential services, jeopardizing the safety of the community and the individuals who were required to stay behind.

Participant Quote:

"There is a list of staff are considered essential in the event of a strike, but we do not have a similar list in the event of a fire or flood."

- In regions where evacuations occurred, some participants suggested that incidents of looting and vandalism occurred. However, other participants provided an alternate perspective, observing that most reported instances were related to the forced entry of homes to collect pets or personal items upon request of the property owner. That noted, most participants voiced concern over the lack of law enforcement after evacuations occurred in some communities.
- Some participants observed that road closures were left unsupported by law enforcement after the evacuations.
- In regions that were evacuated, participants shared that while some ECC staff chose to evacuate with their families, others chose to remain behind and continue with their fire response duties. Those who stayed behind stated they experienced increased workloads and were concerned for their safety as the fires moved closer to the communities.
- Those participants who stayed behind during evacuations shared that communication and efficiency were the main areas of concern when trying to work with evacuated colleagues.

Machinery and Equipment Resourcing

Heavy Machinery and Air Support

Participants in most regions expressed concerns regarding the availability and accessibility of heavy machinery and air support. The inability to access the required resources as identified in fire response plans can impact the region's ability to carry out certain fire suppression activities.

- Participants in all regions felt that they were often provided resources not suited for the activities identified in their Incident Action Plans. For example, in one location, in response to a request for a medium helicopter, the region was provided with a light helicopter that was inefficient for transporting crews and equipment to the fire line.
- Participants noted that while some air tanker supports, specifically the Lockheed Electras, are on five-year contracts, there was a desire in most regions to be assigned rotary-winged medium aircraft to more effectively respond to the specific fire behaviour exhibited.

Participant Quote:

"We don't have the right tools for the job, and even when we do, they are exported to other regions."

❖ Some regional participants noted additional challenges related to perceived delayed contract starts for some helicopters, reporting that while fires began in early May some contracts did not start until mid-June. However, participants did acknowledge that some of the helicopter contracts were a new initiative and all attempts were made to initiate the contracts as early as possible.

❖ Regional participants also observed that due to the smoke and limited visibility, there were many "no-fly days" which negatively impacted the regions' ability to report on the fire location and behaviour, as well as engage in air attacks.

Equipment Tracking

Participants shared that they had trouble accessing the required equipment and tools. Deployment of equipment to other regions left regions temporarily vulnerable and delayed response activities while crews waited for the return of equipment, or request fulfillment from other regions.

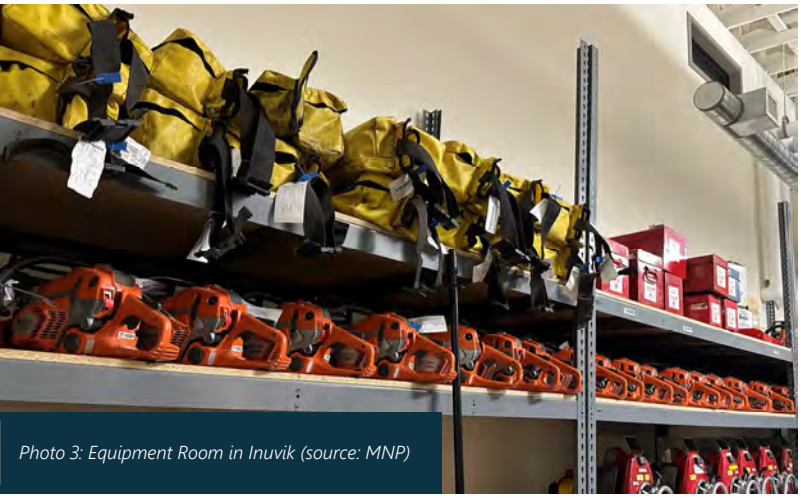

Photo 3: Equipment Room in Inuvik (source: MNP)

❖ A shared opinion across regions was that the current tool inventory management system "ToolHound" is not being utilized to its full capacity. Some participants shared a lack of knowledge with regard to training opportunities, other participants shared that while they attended training they had yet to implement their learnings from the training. In other cases, participants shared that ToolHound was simply not being used. Participants shared equipment is not being properly logged and cannot be accounted for and occasionally goes missing. There were reported instances of equipment being left in the field or stolen.

❖ Participants shared that they experienced a shortage of suppression equipment (pumps and sprinklers) to protect values at risk and requested there be more investment in this type of equipment. One participant shared that it is common for sprinklers and associated equipment to return burned or damaged.

Resource Allocation

Multiple regions shared that once resources initially assigned to their region were exported, it was very difficult to reclaim and access them. Participants indicated that the assignment of helicopters and hours did not work optimally during peak times because the concurrent fires meant resources were being requested by multiple regions.

❖ Additionally, participants expressed frustration that they were not provided with adequate

rationale as to why or where their regional resources were allocated.

Policies, Processes and Procedures

Debrief Procedure

Several participants shared that there was not, or they were not aware of, any formal debriefing policies. Key insights from participants indicated that because the wildfire season extended into the fall, the time allocated towards their administrative workload decreased and as such, there was limited time and opportunities to conduct formal debriefs.

- Many participants shared that the workshops and/or interviews MNP conducted were the first time they had talked about the 2023 wildfire season and the consequential impacts.

Participant Quote:

"We haven't had a chance to celebrate the season, we also haven't had a chance to cry."

Standard Operating Procedures

Participants shared that while overall, there was general compliance with the SOPs, challenges accessing them, the unprecedented nature of the fires, and exceptional fire behaviour meant that, at times, SOPs may not have been adhered to. ECC staff also shared additional concerns with the general awareness and access to SOPs.

Photo 4: View from the North Slave Fire Ops Room (Source: MNP)

- Participants shared their frustration that some SOPs and policies were not adhered to (most notably the training matrix). Crews were exported into positions in which they felt they did not have the required training.
- Many participants agreed that the online platform SPARCS, where SOPs are housed, is difficult to navigate. There was a strong desire to have a hard copy manual.
- Participants shared that there was a long delay in the SOP approval process at multiple levels, causing further disruption in their implementation.
- Because SOPs are stored online, they were not easily accessible during the fire season. Further, retired personnel who were hired back for the season did not have easy access to them.
- Some participants suggested that SOPs should be reviewed as part of onboarding for all team members.
- While priorities were clear (human life, property, infrastructure), some SOPs are not as widely known.
- Regional participants expressed that there could be greater clarity related to Values at Risk (VAR) related policies. Participants shared that there has been recent work to update VAR-related databases and policies so that costly efforts are not directed towards VARs no longer in use. However, these same participants suggested that further updating is required to relate to policies and databases pertaining to natural and cultural resource VARs.

Fire Behaviour Modelling

Many participants shared they had never experienced a fire season such as the 2023 wildfire season. Severe drought conditions, record-high temperatures, and extreme wind events were all factors that contributed to the unprecedented nature of the season. As such, the need for more effective fire behaviour modeling tools was noted by multiple regional offices.

- Participants shared the desire for more predictive tools as well as accurate, timely modelling for fire behaviour. The current system was not suitable for the type of fire behaviour experienced in 2023.
- Participants agreed that having access to military satellite imagery was a useful and effective tool in response efforts.

Procurement Process

Due to urgency and tight timelines, participants shared that many procurement contracts were entered into without following the proper procurement process. This resulted in the GNWT being susceptible to, and inevitably responsible for non-competitively priced contracts, with multiple

participants going as far as saying that certain contractors were "exploiting the situation".

- Participants involved in the procurement process reported that many contracts were submitted with missing information and/or vague statements due to the urgent need for equipment and resources.
- Some participants shared their observations of inadequate adherence to the procurement process, certain invoices were being processed as late as March 2024.

Figure 5: Near Enterprise (Source: MNP)

Fire Prevention

FireSmarting Role

Participants in most regions discussed the need for FireSmarting in and around communities and personal residences. Key insights from participants included the need for more emphasis on prevention activities, increased communication to communities about the importance of FireSmarting, and increased ownership of communities in participating in the FireSmarting program.

- According to several participants, the merger of what was formally Environment and Natural Resources and Lands into what is now ECC provided an opportunity to create incentives for FireSmarting activities. Participants at one regional session shared the idea of providing monetary incentives for residents who FireSmart their properties, or alternatively introduce a mandatory component in lease agreements.
- Participants agreed that all parties involved - ECC, MACA, municipalities, Indigenous Governments, and residents - have a role to play in FireSmarting and these roles need to be communicated more clearly. There is an opportunity for ECC to engage in more educational activities.
- One challenge shared by participants is that FireSmarting activities are often interrupted by migratory bird rules which restrict the cutting and clearing of trees during certain timeframes.
- Some participants emphasized that there should be a shift from using the term "fire break" to using the term "fuel break", as the former term leads to public misconception that they are sound solutions for stopping fires.

Participant Quote:

"It's no longer a fire season, it's a fire year."

Communications

Communication Channels

Engagement sessions indicated that public communications have improved over the last decade but that opportunities for improvement still exist, such as increased collaboration and involvement of Incident Management Teams (IMTs) and local and regional Indigenous Governments, community engagement and education, off-season communication, and communicating the Departments' role to the public.

- Some participants shared experiences whereby several elected politicians were posting on various online platforms (including social media) their contact information and encouraging people to connect with them directly about the fires (as opposed to supporting the proper channels for information).
- According to several participants, social media was noted as an effective tool utilized by ECC for public communication. However, participants also shared that a large amount of misinformation was posted by civilians, causing confusion amongst the public and hindering the fire response.
- Regional workshop participants widely agreed that the jurisdictions and responsibilities of ECC, Emergency Management Office (EMO), MACA, and municipalities are often misunderstood, including the fact that ECC is not responsible for evacuations.
- Participants shared that "The Wildfire Event Notification Protocol" should be updated to ensure it is accurate and effective.
- Several regional session participants mentioned that the location and configuration of the fire operations rooms often posed challenges. For example, some participants said that some of these rooms were very far from the airport which created delays when they needed to brief pilots. Others noted that the rooms were too small and were frequently overcrowded, or too public. Participants observed there was often no way to prevent unnecessary personnel from accessing the rooms, and that radio activity was often drowned out by background noise.

Information Technology

Participants shared concerns that in at least four different locations, fibre optic communication cables were severed during the fire seasons, resulting in some communities losing access to broadband internet.

- Participants expressed concern that very few places in the NWT have communication redundancies if the fibre optic cable line is burnt, and the lack of a contingency plan threatened all essential online services and communications.
- Participants noted Starlink, where they could access it, provided an effective stopgap in addressing the interruption in communications. Importantly, however, participants across the regions reported difficulties in accessing and getting approval to use Starlink. In some

instances, employees and members of the public donated their personal Starlink equipment to GNWT and EMO offices.

- The technology challenges experienced during the 2023 wildfire season revealed the gap in IT surge capacity and demonstrated the need for additional support.

Conclusion and Next Steps

This report reflects the insights and feedback of 104 ECC staff and select stakeholders. Throughout the engagement, participants emphasized the extreme and unprecedented nature of the wildfire season. While participants emphasized many strengths of the response efforts, they raised areas of concern. The main themes which emerged from the various engagement efforts included:

Human Resourcing and Supports

The dedication and skills of GNWT employees and other people involved in the response effort were clear and it was evident that many people put in large amounts of time and effort throughout the fire season. The extent and magnitude of the wildfire season stress all systems beyond capacity and there were not enough resources to fill the various response needs. This resulted in strain on many individuals, both physically and mentally, as participants shared that they were often performing multiple roles and working for periods beyond the norm. While basic mental health supports were reported to be in place, most participants shared that they did not find them appropriate for their needs and that the season left many with trauma. The evacuations of several communities impacted those engaged in response activities and participants suggested there is a need to better define what is an essential worker to help ensure basic services and resources are in place to support active response efforts. Participants also shared that training was often not completed in time for the early fire season and some people, in part due to personnel shortage, were required to step into positions in which they lack the training or experience. Participants emphasized that more training is required related to ICS as they cited that there were instances where the ICS was not followed. Formalized mentorship was suggested by several participants as a way to learn "on the job" and benefit from the experience of senior team members. In addition, participants said more efforts are needed to increase the morale of teams and help make all involved feel appreciated for their efforts.

Machinery and Equipment Resourcing

The 2023 wildfire season response was reported by participants to have led to higher equipment and machinery needs than previous seasons. The need for more air support for suppression, both fixed and rotary wing was frequently raised by participants. They shared the perspective that medium rotary wing aircraft were preferred in most applications because of their effectiveness at moving crews, equipment, and performing drops. Participants shared that while a concentrated effort was made to procure as many aircraft as possible, these efforts were challenged by high demand across the country. Participants further described how the response effort was often limited by the number of days in which the smoke restricted visibility, resulting in grounded aircraft. The availability and tracking of other essential equipment, including hoses, sprinklers, and pumps was also challenging. Confusion as to the availability of the software suggests that more training, monitoring, and accountability are needed to fully utilize the equipment management software. Similarly, participants also observed that additional training and compliance around SOPs is needed to ensure equipment is not left exposed. Further, participants shared that equipment

shortages resulted in surge pricing, "exorbitant" costs, and a stressed procurement system.

Policies, Processes and Procedures

Participants described challenges around accessing online policies and SOPs and expressed a clear preference to have access to current, printed policy and SOP manuals. These same participants shared that more training is needed on SOPs during the off-season. In addition, it was evident that not all crews and regions routinely followed after-action debrief procedures, and some participants indicated they were not aware of the formal requirements. Those who did complete debriefs spoke to the value of the process and the benefit of documenting the lessons learned from specific incidents. Participants also raised concern over procurement, noting that as the season progressed, the procedures in place were stressed, resulting in many cases where the correct documentation was not in place.

Fire Prevention

The need to focus more attention on preventative activities, including FireSmarting, was frequently raised by participants. It was evident that clarity was lacking about the role and responsibilities of GWNT Departments, Indigenous Governments, municipal governments, and individuals. Participants shared the view that the construction and ongoing maintenance of fire breaks around communities needs to be prioritized and the use of prescriptive burns should be revisited. Throughout the session and interviews, participants widely recognized that the climate in the north is changing and that prolonged periods of drought have affected the landscape. They shared that this knowledge needs to be better considered in preventive planning.

Communication

Participants raised concerns regarding the loss of network capabilities due to fire damage, confusion related to the proper communication channels, the sharing of misinformation, and the timing of communications with key GNWT, municipal and Indigenous Government partners. Participants in both regions shared how damage to fiber optic cables because of the fires caused interruptions and communication delays with some communities experiencing blackouts for extended periods. While Starlink was instrumental in getting communications back online, the use of personal and donated Starlink equipment underscores the need for contingency planning, communication redundancies, and additional IT capacity and resources. Participants acknowledged the strengths of ECC's internal communication processes, but the use of informal communication channels outside the ICS, and the spread of misinformation created unnecessary delays and additional work for the Department.

Finally, Participants noted the value of the continued collaboration with MACA, Indigenous Governments, and municipalities, through public education efforts, fire prevention activities, emergency management, and wildfire response training. Observations that continued relationship building, desktop training exercises, and strategic communications during future wildfire seasons suggest that improvements in this space are needed.

During the unprecedented 2023 fire season, the dedication, effort, and flexibility demonstrated by the ECC and its partners were instrumental in the 2023 wildfire response. The observations and feedback outlined in this WWHR are intended to inform the forthcoming Wildfire Response Review Report. This report will review all pertinent findings, comprising of the WWHR, a chronology of events, an assessment of ECC's overall wildfire response, and a structured evaluation of ECC's preparedness for the 2023 wildfire season. The report will also include recommendations aimed at enhancing the readiness and effectiveness of ECC and the GNWT for future wildfire responses.

Appendix A: Internal Interview Guide

Introduction

The unprecedented 2023 wildfire season put a major strain on resources, communities, and people across the NWT. An independent review is underway to explore the response. This review looks at decisions and implementation made throughout the summer and compares them to best practices from other Canadian jurisdictions, identifying lessons which can be applied to the wildfire management program going forward. The Wildfire Response Review is not an evaluation of individuals, but rather the GNWT's authorities, policies, procedures, and processes regarding wildfire preparedness and response.

ECC retained the services of MNP, to conduct research and to lead the engagement of staff and select stakeholders. Engagement will collect information from semi-structured workshops and interviews with select organizations/individuals.

The results of the engagements will be published in a report that will include recommendations for implementing processes and procedures which would benefit the territory in the short, medium, and long term. The report's release will be announced publicly.

*NOTE – the scope of engagement for this review is limited to internal GNWT staff, select stakeholders, and Indigenous Governments that were directly involved in operations and communications related to the wildfire response with GNWT staff.

Confidentiality: Participation in this review is voluntary. The views and opinions shared through the engagement will not be associated with any individual's name.

Also, no video or audio recording will occur during the interviews or group discussions, and any notes taken by the MNP team will not be shared with the Department of Environment and Climate Change (ECC) or any other party.

For the report, MNP will focus on the main themes of what is heard, from the viewpoint of the staff or stakeholders, with no individual names or titles as mentioned above. This report will be sent to the ECC in June 2024.

The MNP Privacy Policy can be viewed at www.mnp.ca/en/privacy-policy.

Trauma-Informed and Accessibility: This review has been designed with participant safety and inclusion in mind. At least one of the MNP facilitators is trained and certified in mediation with experience in leading consultations that follow these same principles of safety and inclusion. Also, an effort will be made to help ensure that virtual and in-person meeting spaces are accessible, and to accommodate participants' needs. Please feel free to share any specific considerations or accessibility needs you may have during this interview process, as your comfort and well-being are important to us.

MNP will prioritize empathy, active listening, and sensitivity to participant experiences, fostering a supportive environment that recognizes and address the emotional impact of the wildfire season.

Mental Wellness support available 24/7 through TELUS Health the GNWT's confidential Employee and Family Assistance Program (EFAP) at 1-833-622-1307 or one.telushealth.com

If you have any questions about the review, please contact Clint Abbott, Senior Manager, MNP (clint.abbott@mnp.ca).

Please note: this question guide will be used to facilitate the discussion. Questions may be asked in any order, and the interviewer will have ample opportunity to delve deeper and/or rephrase questions as necessary.

Interview Participant Information

Name:

Date:

Theme 1: Roles

1. What is your role within GNWT?
2. How long have you been with GNWT?
3. What role(s) did you play in response to the 2023 wildfire season?

Theme 2: Experiences and Observations

4. Please describe your experience in training and preparing for wildfire response.
5. How would you describe the effectiveness of the ECC Wildfire Response Strategy in the context of the 2023 fire season?
    a. Is it reflective of the needs of local communities, land uses, industry, and other resource users?
    b. Is it balanced regarding protecting values at risk and deciding which fires not to fight?
6. How would you describe the nature of the 2023 wildfire season compared to previous fire seasons you have experienced?
7. How would you characterize the strengths of the GNWT's response that need to be sustained going forward?
    a. Can you use specific examples to help us understand the strengths?

8. In your opinion, what were the challenges or barriers of the GNWT's response that need to be addressed before the next fire season?
    a. What suggestions do you have to overcome the challenges or barriers?

Theme 3: Preparedness and Resourcing

9. Did you feel adequately trained to respond to the 2023 wildfire season?
    a. If you have direct reports, did you feel they were adequately trained?
10. Were the processes and procedures you were expected to follow clear to you?
11. What do you believe were the strengths and/or gaps of the GNWT's wildfire response from an internal resourcing perspective?
    a. Can you provide specific examples to help us understand the strengths?
    b. What suggestions do you have to overcome the gaps?
12. Were resources engaged (hired) and prepositioned appropriately given the forecasted weather, fire hazard conditions and known values at risk? (i.e., were resources being located and transported to the right areas at the right time?)
13. Are the current personnel, equipment, and infrastructure resource levels appropriate in type, quantity, and location to support wildfire response?
    a. Do you feel current resource levels will be appropriate and sufficient in the future/for the next four seasons?
14. How do you feel the current ECC/NWT organizational structure and incident command structure of the wildfire season helped or hindered your ability to adequately prepare for the 2023 wildfire season?
    a. What could be done to improve the organizational/reporting structure?

Theme 4: Interactions with Other Resources

Other resources include other GNWT Departments, Municipal Governments, Contractors, select stakeholders, and Indigenous Governments (IGs) that were directly involved in operations and communications related to the wildfire response with GNWT staff.

15. What do you think were the strengths and/or gaps of the ECC's interactions with other resources?
    a. Can you provide specific examples to help us understand the strengths?
    b. Can you provide suggestions on how to overcome the gaps?
16. What strategies do you and did you employ to coordinate with other governments/government agencies and external organizations? Thinking about the next fire season, what strategies would you like to employ for coordination with external agencies and organizations?
17. Do you feel as though the contract arrangements with IGs worked successfully? Why or why not?
18. Describe the procurement process and management of procured resources.
    a. Describe what worked well and where there is room for improvement.

Theme 5: Policy, Procedure, Process

19. What legislative authorities/policies/procedures/processes were effective in the operations and communications of the wildfire response?
20. What legislative authorities/policies/procedures/processes were ineffective in the operations and communications of the wildfire response?
21. What types of legislative authorities/policies/procedures/processes were missing or would be useful in future fire seasons to address situations?
22. How often are policies/procedures/processes updated?
    a. How do you stay updated on the latest developments and best practices in wildfire management?
    b. Are there any best practices in wildfire management that are not being implemented currently in the NWT that would be useful?
23. Is the current budget and funding structure/procedures of wildfire preparedness and response efficient and sufficient?
    a. Describe the capital planning process and its effectiveness.
24. Describe the inventory management system.
    a. How would you describe its effectiveness?

Closing

25. Is there anyone else who was involved in the wildfire response whose insights and experiences would be valuable for our review?
26. Is there anything else you would like to share?

Appendix B: External Interview Guide

Introduction

The unprecedented 2023 wildfire season put a major strain on resources, communities, and people across the NWT. An independent review is underway to explore the response. This review looks at decisions and implementation made throughout the summer and compares them to industry best practices from other Canadian jurisdictions, identifying lessons which can be applied to the wildfire management program going forward. The Wildfire Response Review is not an evaluation of individuals, but rather the GNWT's authorities, policies, procedures, and processes regarding wildfire preparedness and response.

ECC retained the services of MNP, to conduct research and to lead the engagement of staff and select stakeholders. Engagement will collect information from semi-structured workshops and interviews with select organizations/individuals.

The results of the engagements will be published in a report that will include recommendations for implementing processes and procedures which would benefit the territory in the short, medium, and long term. The report's release will be announced publicly.

*NOTE – the scope of engagement for this review is limited to internal GNWT staff, select stakeholders, and Indigenous Governments (IGs) that were directly involved in operations and communications related to the wildfire response with GNWT staff.

Confidentiality: Participation in this review is voluntary. The views and opinions shared through the engagement will not be associated with any individual's name.

Also, no video or audio recording will occur during the interviews or group discussions, and any notes taken by the MNP team will not be shared with the Department of Environment and Climate Change (ECC) or any other party.

For the report, MNP will focus on the main themes of what is heard, from the viewpoint of the staff or stakeholders, with no individual names or titles as mentioned above. This report will be sent to the ECC in June 2024.

The MNP Privacy Policy can be viewed at www.mnp.ca/en/privacy-policy.

Trauma-Informed and Accessibility: This review has been designed with participant safety and inclusion in mind. At least one of the MNP facilitators is trained and certified in mediation with experience in leading consultations that follow these same principles of safety and inclusion. Also, an effort will be made to help ensure that virtual and in-person meeting spaces are accessible, and to accommodate participants' needs. Please feel free to share any specific considerations or accessibility needs you may have during this interview process, as your comfort and well-being are important to us.

MNP will prioritize empathy, active listening, and sensitivity to participant experiences, fostering a supportive environment that recognizes and address the emotional impact of the wildfire season.

Mental Wellness support from registered nurses is also available 24/7 through 811 Helpline at 811 or 1-844-259-1793.

If you have any questions about the review, please contact Clint Abbott, Senior Manager, MNP (clint.abbott@mnp.ca).

Please note: This question guide will be used to facilitate the discussion. Questions may be asked in any order, and the interviewer will have ample opportunity to delve deeper and/or rephrase questions as necessary.

Interview Participant Information

Name:

Date:

Theme 1: Roles

1. What organization do you work for?
2. What is your position within the organization?
3. How long have you been in your position?

Theme 2: Experiences and Observations

4. How would you describe your role during the 2023 wildfire response?
5. How did you support or work with ECC staff during the wildfire response?
6. How would you characterize the strengths of your organization's part, or role, in the response that needs to be sustained going forward?
    a. Can you provide any specific examples to help us understand the strengths?
7. What would you say were the challenges or barriers of your organization's part, or role, in the response that need to be addressed before the next fire season?
    a. What suggestions do you have to overcome the challenges or barriers?

Theme 3: Resourcing

8. What do you believe are the strengths and/or gaps of your organization's part, or role, in the wildfire response from a resourcing perspective?

a. Can you provide specific examples to help us understand the strengths?
b. Can you provide suggestions on how to overcome the gaps?

9. Does your organization have the appropriate level of resources needed to support wildfire response?

Theme 4: Communications

10. How would you describe communication between ECC and your organization?
    a. If communications need to be improved, what could be done to strengthen lines of communication between ECC and your organization?

Closing

11. Is there anyone else who was involved in the wildfire response whose insights and experiences would be valuable for our review?
12. Is there anything else you would like to share?
13. Is there anything we did not ask you that you expected us to?

Appendix C: Facilitated Workshop Guide

(For internal GNWT staff workshops)

Meeting Details

Location:	
Date:	
Time:	

Trauma-Informed and Accessibility: This review has been designed with participant safety and inclusion in mind. At least one of the MNP facilitators is trained and certified in mediation with experience in leading consultations that follow these same principles of safety and inclusion. Also, an effort will be made to help ensure that virtual and in-person meeting spaces are accessible, and to accommodate participants' needs. Please feel free to share any specific considerations or accessibility needs you may have during this interview process, as your comfort and well-being are important to us.

MNP will prioritize empathy, active listening, and sensitivity to participant experiences, fostering a supportive environment that recognizes and address the emotional impact of the wildfire season.

Mental Wellness support from registered nurses is also available 24/7 through 811 Helpline at 811 or 1-844-259-1793.

Agenda Details

5 mins	Welcome & Introductions • Territorial Acknowledgement • Roundtable of Introductions • Review Agenda
10 mins	Project Overview • Purpose and Goals • Approach • Key Themes
45 – 60 mins	Theme 1: Overview of Significant Events • Describe the significant events that occurred in your region, please be as specific as possible (i.e., dates, times, locations) • What factors contributed to the severity, impact, or complexity of the significant events in your region? (i.e., weather conditions, fuel conditions)

	○ What tools are in place to mitigate and determine such factors? ○ Were these tools sufficient? • Describe the response of your regional office, please be as specific as possible (i.e., dates, times, locations)
45 - 60 mins	**Theme 2: Preparedness and Resourcing** • What pre-suppression and preparedness tools are in place? ○ How was pre-attack planning and preparedness implemented? ○ What specific preparedness actions did you take? • Recognizing that Fire Smart is connected to municipal affairs, how is this supported by ECC? • Describe how the response of your regional office went from a resource perspective (i.e., people, equipment, assets) ○ If applicable, what factors contributed to resource constraints? ○ Did the personnel available have sufficient training and experience to address needs? • Are the current personnel, training, equipment, and infrastructure resource levels appropriate in type, quantity, and location to support wildfire response? • What are the strengths of current resource allocation? • What are the opportunities for improvement in resource allocation? • How do you feel the current ECC/NWT organizational structure and incident command structure of the wildfire season helped or hindered your ability to adequately prepare for the 2023 wildfire season? ○ What could be done to improve the organizational/reporting structure?
15 - 45 mins	**Break/Lunch** (depending on meeting location and times)
45 - 60 mins	**Theme 3: Interactions with Other Resources** • What other areas of government, government agencies, Indigenous Governments, and organizations did your regional office interact with? • What other resource bodies did your regional office interact with? • Were the interactions with other institutions effective and sufficient? ○ Why or why not? • What were the strengths of interactions with other resources? • What are the opportunities for improvement of interactions with other resources? • Describe the interactions between the Duty Officer and Incident Management Teams

	• What communication strategies and/or policies are in place? • Describe the procurement process and management of procured resources. o Describe what worked well and where there is room for improvement.
	Theme 4: Policy, Procedure & Process

45 - 60 mins	• What legislative authorities, policies, procedures, and processes are in place to guide wildfire response efforts?
	  o What are the strengths?
	  o What are the opportunities for improvement?
	• What is the decision-making model, or incident command models are most employed in different situations (explain or draw it) Is the decision-making model formalized, accessible, written, and explicit? What training is provided in decision-making and incident command?
	• Were the appropriate SOPs followed during the 2023 wildfire response?
	  o Why or why not?
	• What factors contributed to your regional office's ability to follow SOPs?
	• Is the current response strategy reflective of current needs?
	  o Are the right decision support tools in place?
	  o How did the response strategy evolve over the 2023 fire season?
	• How are communication plans, policies and procedures designed to educate the public about wildfire risks, Fire Smarting, preparedness measures, and emergency protocols?
	• What changes would you like to see in place ahead of the next fire season?
	• Describe the inventory management system.
	  o How would you describe its effectiveness?
	• Describe the capital planning process and its effectiveness.

10 - 15 mins	Next Steps & Questions

*Times allocated per section are estimates and will be adjusted depending on the time available at the regional office.

Appendix D: Engagement Invitation

Overview of Engagement

MNP LLP has been commissioned to conduct a third-party review of the 2023 NWT wildfire season preparedness and response for the Government of Northwest Territories, Department of Environment and Climate Change ("ECC"). The review will consist of a document review, facilitated workshops with GNWT regional office staff and one-to-one interviews with staff and select stakeholders. Following this, the MNP team will prepare a report that identifies what was unique and challenging regarding the 2023 fire season, what worked well, and what did not work well or needs improvement.

Who Will Be Invited to Participate in These Meetings?

Facilitated Workshops

The facilitated workshops will be hosted in the Norman Wells, Inuvik, Fort Simpson, Fort Smith, and Yellowknife regional offices. In addition, we will be conducting meetings in Behchokǫ̀, Hay River and Enterprise. We hope that all regional office staff will participate in the meetings.

Interviews

Interviews will be conducted in Norman Wells, Inuvik, Fort Simpson, Fort Smith, Yellowknife, Behchokǫ̀, Hay River and Enterprise. We anticipate inviting staff and stakeholders who were directly involved in the 2023 wildfire response operations and communications to interviews.

*NOTE – the scope of engagement for this review is limited to internal GNWT staff, select stakeholders, and Indigenous Governments that were directly involved in operations and communications related to the wildfire response with GNWT staff.

What is the Purpose of These Meetings?

The facilitated workshops and interviews will help identify areas where successful efforts should be sustained and where potential improvements could be made in wildfire response operations. The information gathered during the facilitated workshops and interviews intends to accomplish the following:

- Develop a description of the 2023 wildfire season to provide context, an understanding of events, insight into decisions and actions, and a picture of results.
- Conduct a detailed review of actions taken on two specific wildfires (Behchokǫ̀ and Enterprise), to identify potential issues and opportunities for improvement.
- Develop an evaluation of the effectiveness of the Department's preparedness and response to the 2023 wildfire season through a formal program evaluation framework, including a review of budgets, admin systems and/or program structures.
- Prepare observations, conclusions, and recommendations to help GNWT improve the effectiveness of the wildfire management program going forward into future fire seasons.

When Will These Meetings Take Place?

Facilitated workshops will occur in the following locations on the respective dates. One-on-one interviews will be scheduled with staff and select stakeholders on an as-needed basis.

	Workshop		Interviews	
	Date	Time	Date	Time
Norman Wells	February 13, 2024	9:00AM -3:00PM	February 14, 2024	8:30AM-11:00AM
Inuvik	February 15, 2024	2:00PM -5:00PM	February 15, 2024	8:30AM-12:00PM
			February 16, 2024	8:30AM-12:00PM
Fort Simpson	February 19, 2024	9:00AM -3:00PM	February 19, 2024	3:00PM-5:30PM
Fort Smith	February 22, 2024	8:30AM -12:30PM	February 22, 2024	1:30PM-5:00PM
Fort Smith (FMD)	February 23, 2024	8:30AM-12:30PM		
Yellowknife	February 26, 2024	9:00AM -3:00PM	February 20, 2024	11:00AM-5:00PM
			February 21, 2024	8:30AM-12:00PM
			February 27, 2024	9:00AM-4:00PM
Behchokǫ̀			February 26, 2024	9:00AM-4:00PM
Enterprise			February 28, 2024	9:00AM-4:00PM
Hay River			February 29, 2024	9:00AM-4:00PM

What is Required from the Regional Office?

To conduct the above engagement, MNP is requesting:

- Board room space to host the facilitated workshop from 9:00AM-3:00PM in each regional office on the corresponding dates.
- Private space to conduct interviews in each regional office on the corresponding dates.

In addition, we kindly request you complete the attached contact sheet for workshop participants and interviewee suggestions.

How Will MNP Handle Confidentiality?

Participation in this review is voluntary. The views and opinions shared through the engagement will not be associated with any individual's name.

Also, no video or audio recording will occur during the interviews or group discussions, and any notes taken by the MNP team will not be shared with the Department or any other party.

For the report, MNP will focus on the main themes of what is heard, from the viewpoint of the staff, with no individual names or titles as mentioned above. This report will be sent to the Department of Environment and Climate Change (ECC) in Spring 2024.

The MNP Privacy Policy can be viewed at www.mnp.ca/en/privacy-policy.

What Comes Next?

MNP will facilitate workshops at the above-mentioned locations and dates and will contact identified interview participants individually based on the contact information provided in the attached document.

Who Can I Contact About This?

If you have any questions about the review, please contact Clint Abbott, Senior Manager, MNP (clint.abbott@mnp.ca).

Appendix B: Case Study: SS052-23

Northwest Territories 2023 Wildfire Response Review

Case Study: SS052-23

July 2024

MNP LLP
1700 - 10235 101 St NW, Edmonton AB, T5J 3G1
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Contents

Table of Acronyms

Acronym	Meaning
ADO	Area Duty Officer
AAR	After-Action Review
CIFFC	Canadian Interagency Forest Fire Centre
DO	Duty Officer
ECC	The Department of Environment and Climate Change (Government of Northwest Territories)
EMO	Emergency Management Office (for Hay River and Enterprise)
FMD	Forest Management Divisions (Government of Northwest Territories)
GNWT	Government of Northwest Territories
IAP	Incident Action Plan
IC	Incident Commander
ICS	Incident Command System
IMT	Incident Management Team
MACA	Municipal and Community Affairs (Government of Northwest Territories)
NRCan	Natural Resources Canada
NWT	Northwest Territories
RDO	Regional Duty Officer
RPWE	Required Planning for Wildfire Events
VAR	Values at Risk
SS052-23	Enterprise/Hay River Wildfire

Introduction

Purpose and Structure of the Case Study

As part of the independent third-party review of the Northwest Territories (NWT) response to the 2023 wildfire season, individual reviews of two key wildfires were commissioned. This review relates to wildfire SS052-23 (herein referred to as the Enterprise/Hay River wildfire). This fire includes Katl'odeeche First Nation, Enterprise, Hay River and Kakisa.

The purpose of this individual wildfire review is to collect and review information available on the situational context, level of preparedness, initial response, sustained action, and other aspects relevant to the wildfire response. The review aims to identify areas of concern, where potential improvements to wildfire operations should be made, as well as areas of strength, where positive aspects of the program need to be sustained. This individual wildfire review includes the following four subject areas:

1. **Wildfire Overview:** An overview and description of the wildfire (SS052-23).
2. **Timeline:** A graphic timeline and summary of events describing the wildfire event.
3. **Observations and Key Issues:** A synthesis of the information collected through interviews, workshops, and program files.
4. **Recommendations:** Suggestions for changes or improvements to enhance the wildfire capabilities.

Case Study Methodology

This case study of fire SS052-23 is part of the larger *Northwest Territories 2023 Wildfire Response Review,* prepared by MNP, that looks at SS052-23 and ZF015-23 (Behchokǫ̀/Yellowknife wildfire) fires in the context of the broader Department of Environment and Climate Change (ECC) response. MNP used the following approach to understand the timeline of events for the Enterprise/Hay River wildfire.

February-April 2024	**Fire-Specific Data Review** MNP subject matter experts reviewed all data specific to each fire including information from the SPARCS and EMBER systems, True North Weather Consulting's *2023 Fire Weather Report*, Natural Resources Canada (NRCan) weather maps, and other weather data information provided by the ECC. Data was also derived from engagement workshops and interviews, Incident Action Plans (IAPs), and After-Action Reviews (AARs). The fire-specific data review findings were reviewed with representatives from the Forest Management Division (FMD) and incorporated into the report.
February 2024	**Site Visits** The MNP review team visited the three NWT communities where the 2023 wildfires caused structural loss – Behchokǫ̀ in the North Slave Region, and

Enterprise and Hay River in the South Slave Region. These site visits allowed MNP to see the extent of the damage firsthand and to develop this report from a lens that grasped the significance and implications of the outcomes of the 2023 wildfires.

January 2024

Production of the Case Study

The SS052-23 Case Study is the consolidation of the information gathered and analyzed. The case study contains an overview of the wildfire, a written timeline, a graphical timeline, observations, and recommendations for potential improvements to wildfire management operations.

Review Limitations

The review of the SS052-23 wildfire revealed significant gaps in data and information. Data regarding the Enterprise/Hay River wildfire came from a variety of sources including debrief or summary reports, IAPs, SPARCs, EMBER, and engagement with ECC employees and other stakeholders involved in the wildfire response. The guideline document, *Required Planning for Wildfire Events* (RPWE) provides direction on IAPs and when other planning and assessment documents are required. Not all required reporting documents were completed and/or fully available at the time of this review. Absent or incomplete IAPs resulted in gaps in our understanding of the timeline, wildfire progression, and operations.

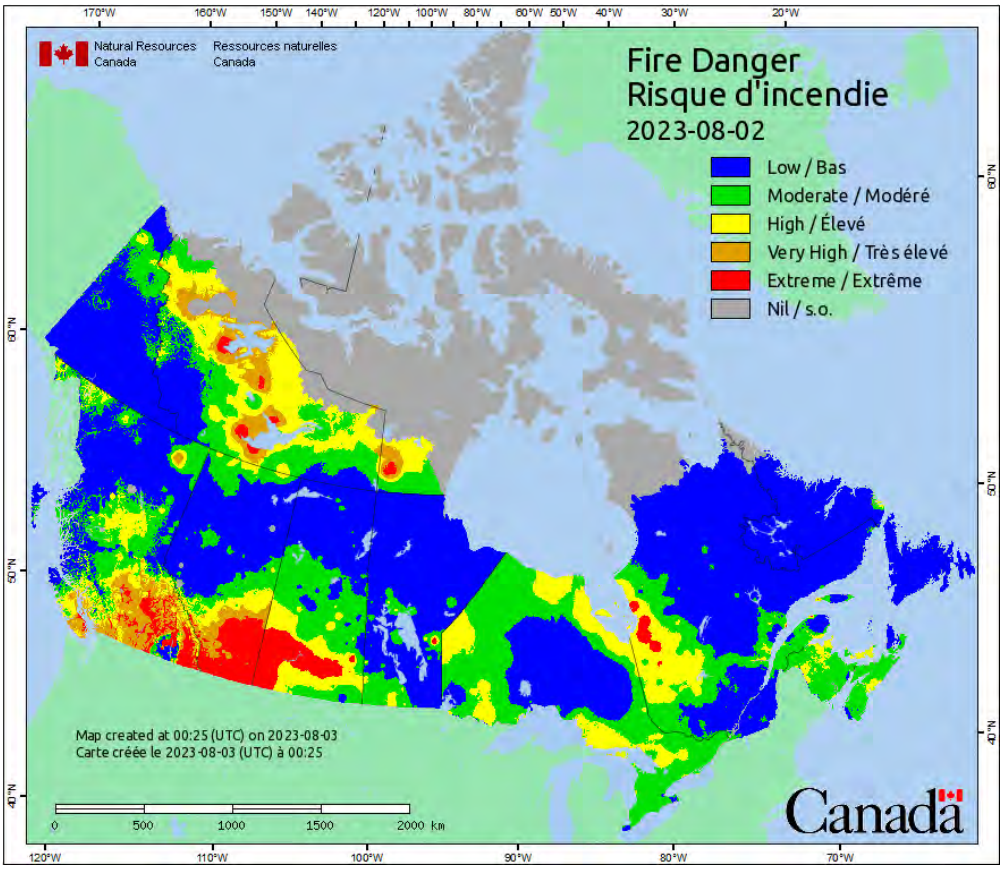
Stakeholder and ECC employee recollections also varied or lacked specificity in relation to details, times, and dates. Sometimes, the available information sources conflicted for example, concerning the size of the fire, or details related to the timing of the response. To ensure data consistency and reviewability, MNP prioritized the best data available including fire mapping data, IAPs, and personal notes. Where possible, maps that included wildfire size, date, and time of day information were also prioritized.

MNP notes that gaps in data and information likely relate more to reporting requirements, delays in uploading documentation, and the unprecedented wildfire season rather than an unwillingness to provide the information. It is likely that extemporaneous IAPs and personal notes, as well as AARs, were not required and/or prioritized during critical wildfire response windows as per the RPWE document. Every effort was made by ECC to provide the data and information required for this review.

Wildfire Overview in the South Slave Region

During the spring and summer of 2023, Canada experienced a widespread and severe wildfire season. In the days and weeks leading up to the identification of the SS052-23 wildfire, much of western Canada experienced "high" to "extreme" wildfire danger, especially in the Northwest Territories, southern British Columbia, and Alberta. The Government of Northwest Territories (GNWT) uses a four-point danger rating scale (low, moderate, high, and extreme). Wildfire danger is a relative index of how easy it is for a wildfire to ignite, how difficult a wildfire might be to control, and how much damage a wildfire may do. Fire danger ratings are derived from daily observations of temperature, relative humidity, precipitation, and wind direction and speed. "High" fire danger signifies challenging surface wildfire requiring heavy equipment and/or air attack, while "extreme" denotes fast-spreading crown fire, hard to control directly. Figure 1 shows the wildfire danger rating provided by NRCan (using a five-scale danger rating scale) for the country on August 2, 2023, the day that the Enterprise/Hay River fire was detected. The danger rating demonstrates a high to extreme hazard situation in the NWT, and southern British Columbia and, Alberta.

Figure 1: Wildfire Danger for August 2, 2023



Further to the overall wildfire hazard situation in western Canada, local wildfire weather conditions

were categorized as high to extreme, with wildfire behaviour-related indices linked to ground moisture, temperature, relative humidity, and winds conducive to aggressive wildfire behaviour.

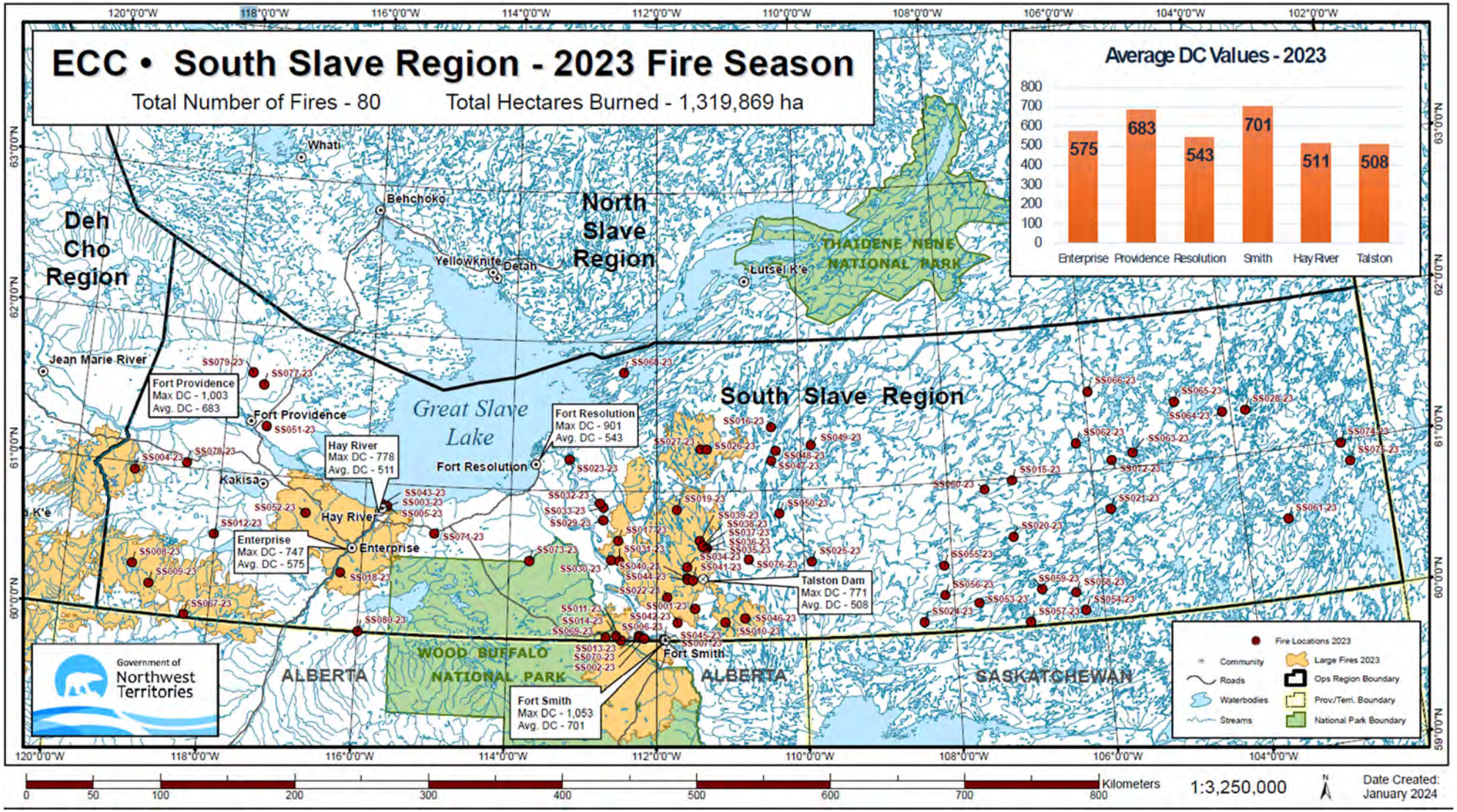
The fire season began early in the South Slave with a 3,200-hectare wildfire at Kátł'odeeche First Nation (SS005-23) that started May 14 (Figure 2). This wildfire grew rapidly under extreme fire danger conditions threatening the First Nation community and the town of Hay River. Both the community of Kátł'odeeche First Nation and the town of Hay River were placed on evacuation notice on May 14.

Figure 2: Map of area burned for Kátł'odeeche First Nation wildfire. Adapted from CBC (https://www.cbc.ca/news/canada/north/k-atl-odeeche-land-loss-1.6856202).

After the spring wildfire at Kátł'odeeche First Nation, the fire season continued with numerous wildfire starts, extreme fire behaviour, and large fires throughout the region. Specifically, a large fire complex exhibiting extreme fire behaviour threatened Fort Smith and neighbouring communities. This dangerous situation reflected in drought indices beyond 425[1] and high to extreme fire danger ratings. Figure 3 shows the 2023 wildfire situation for the South Slave region.

[1] It is recognized that drought indices of over 700-800 have been reported within the NWT during previous fire seasons.

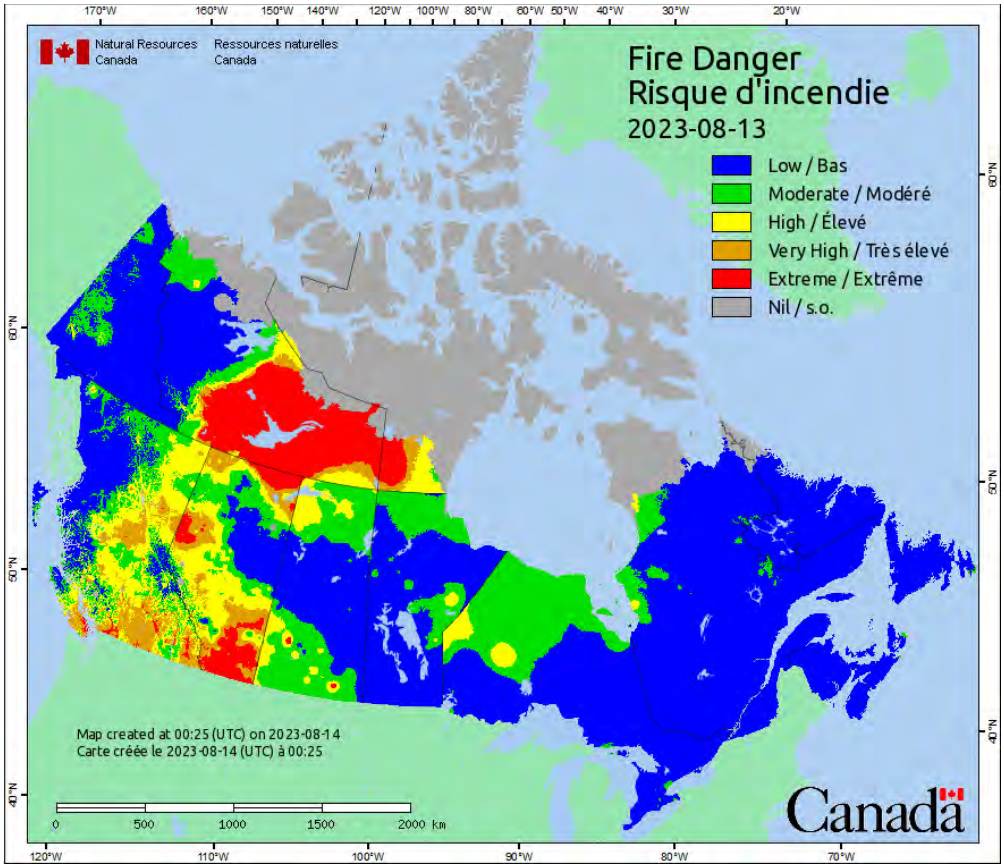
Figure 3: South Slave Region 2023 Fire Season. Includes noteworthy wildfires and drought codes (DC). Produced by ECC.



According to the *2023 Fire Weather Report*, prepared for FMD, August began with high lightning activity resulting in many wildfire starts, especially in the South Slave region. While lightning and new ignitions slowed as August progressed, a lack of precipitation, persistent drought conditions, low relative humidities, and high winds, caused by a strong upper ridge and persistent omega block, resulted in extremely active wildfire behaviour (True North Weather Consulting, 2024).

On August 2, 2023, a lightning strike between Kakisa and Hay River ignited the fire SS052-23. By August 13, the development of an unprecedented or "never seen before" weather situation, marked by extreme fire weather conditions in the South Slave, was significantly worsened by winds gusting over 90 km/hr. The combination of extreme heat, low humidity, and high winds set the stage for the dangerous and unusual scenario that would evolve later in the day. Figure 4 shows the fire danger ratings on August 13, 2023, with extreme conditions throughout most of southern and central NWT.

Figure 4: Fire Danger for August 13, 2023



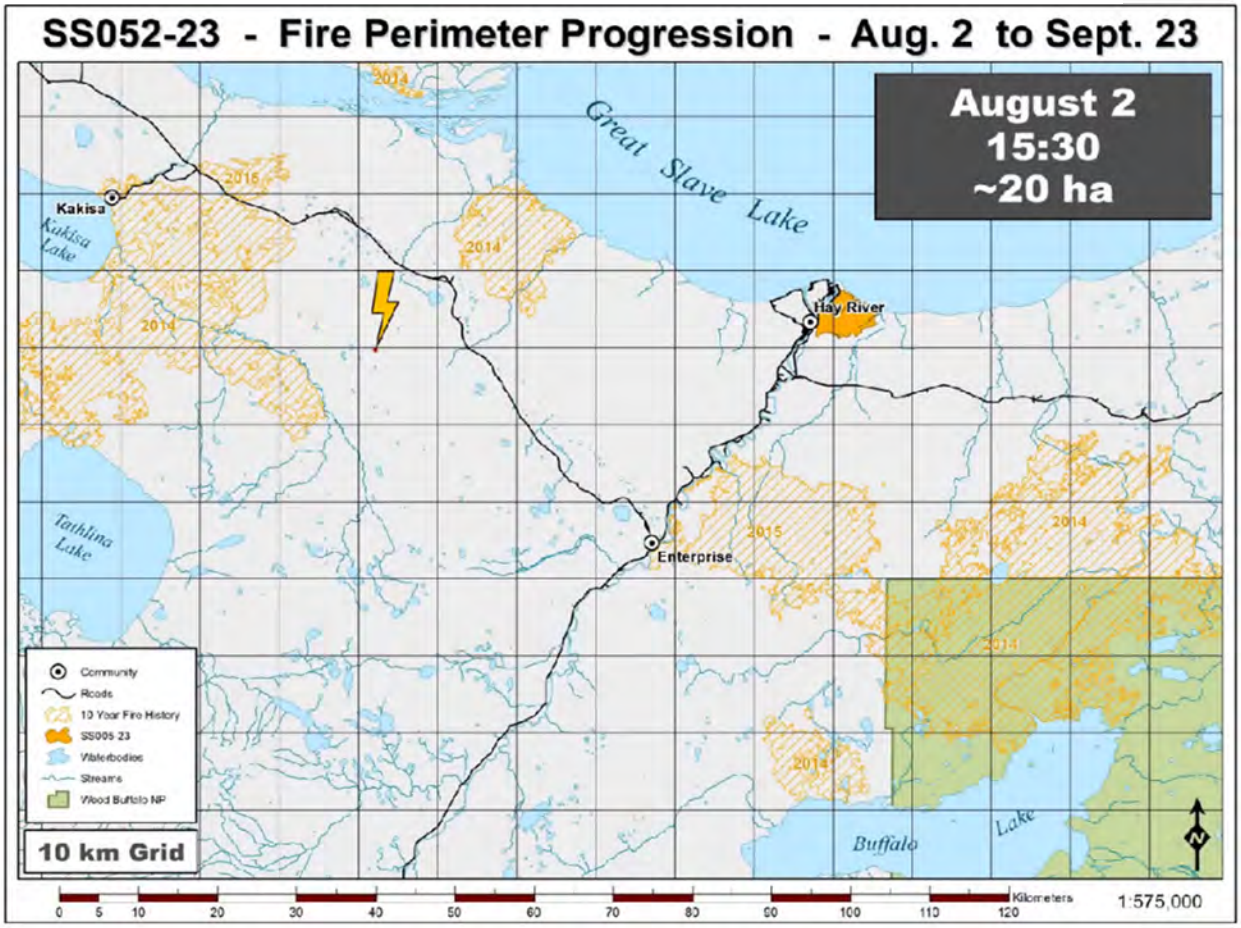
SS052-23 Wildfire

Wildfire SS052-23 was detected at a remote location between Hay River and Kakisa, on August 2, 2023, by a Hay River Fire Technician while on a fixed-wing smoke patrol. This fire was one of the 27 wildfires identified between August 1 and August 2, 2023. The initial assessment, conducted at 2:10 PM, estimated the size of the wildfire at three hectares. The fire behaviour exhibited low flame with

moderate spread; winds were from the north at 15km/hour. An initial attack wildland fire crew was dispatched to the fire shortly after detection. Air tanker operations were also dispatched with air attack officers reporting the fire sizes between 60 to 80 hectares throughout the day on August 2. The significant growth of the fire on day one was likely due to drought conditions and highly flammable fuels, typical of the northern boreal black spruce forest. The wildfire danger rating in the immediate vicinity was high to extreme. On August 3, crews, heavy equipment, rotary wing aircraft, and air tankers were used on SS052-23 in a containment attempt before the fire size became much larger. Fire size reports were variable and inconsistent for that afternoon, however by 6:09 PM the fire was reported at 120 hectares. Figure 5 shows the point of ignition for SS052-23 on August 2, 2023.[2]

On August 4, air tanker operations and ground crew suppression were again deployed. The fire size at the beginning of the day was 220 hectares and at the day's end was 850 hectares. According to participants, the verbal wildfire response plan's objective was to contain the

Figure 5: SS052-23 Wildfire Ignition Start. August 2, 2023. Produced by ECC



[2] Note that maps provide area burnt statistics at varying times of day. This section was prepared using data from the ECC, as well as other sources. Some minor discrepancies may exist.

southwest quadrant with air tankers laying retardant lines tied in between lakes and the wildland fire crew support on the ground; however, the mission was suspended later in the day without successfully containing the fire due to poor visibility and flying conditions. Crews were pulled off the fireline because helicopters could not support wildland fire crews due to increasingly dangerous fire behaviour, and poor flying conditions due to smoke and poor visibility. From August 4 to 6, the stronger winds continued, and wildland fire crews were deployed sparingly, as conditions and visibility permitted, to safeguard the northern and northwestern sectors of the fire. This strategic effort was aimed at containing the northern and western flanks of the fire and at slowing the fire's advancement towards Kakisa and Highway 1.

Overnight on August 6, the fire took a four-kilometer run to the west bringing the fire size to 5,900 hectares. On August 8 the fire was now 18 kilometers to the east of the community of Kakisa. The community was placed on evacuation alert and wildfire crews were evacuated from the fireline due to blow-up fire conditions conducive to the rapid and extreme spread of fire. Air tanker support was again cancelled due to low visibility. The fire size was recorded by the Regional Duty Officer (RDO) at 21,730 hectares by the end of the day.

In the following days, wildfire and structure protection sprinklers were mobilized to Kakisa to facilitate the safeguarding of values at risk (VAR), with a particular focus on residences and private properties. By August 11, improved visibility enabled an air tanker group to reach the wildfire site, thereby resuming fire suppression efforts. It is unclear how well the escalating situation was communicated to Hay River, Enterprise, Kakisa, and Kátł'odeeche First Nation. As late as August 12, evacuees from Fort Smith were arriving in Hay River, and the annual Enterprise Gateway Jamboree was underway with 600 visitors in Enterprise. Regional EMOs and employees report limited communication about the changing fire situation.

By August 12, the fire had expanded to over 30,150 hectares in size, prompting an air tanker operation aimed at containing hotspots along the northeast flank. While the air tanker operation initially proved successful, by August 13, severe winds gusting to over 90 km/hr, compounded by extreme hazard conditions, leading to a rapid escalation in fire activity.

As conditions worsened and winds intensified, the fire approached Enterprise and the highway leading out of Hay River. On August 13, 2023, all available records and accounts indicated the fire weather and behaviour conditions were unprecedented. Extreme fire indices and high winds made it extremely challenging for wildland fire crews and air tanker groups to contain a conflagration of this size and magnitude. Though the fire was 37 km from the town boundary, the wildfire was moving fast, with some projections indicating that the fire could reach Hay River within 16 hours.[3]

[3] According to interview participants, the EMO was informed of the evacuation orders for Hay River and Enterprise, "mid-afternoon" of August 13. They were given a window of four hours before the fire could potentially reach structures in Hay River.

At 12:28 PM the ECC and MACA, including EMO, discussed evacuation orders for Enterprise, Hay River, Kátł'odeeche First Nation, and Kakisa as a precaution. At 2:53 PM the RDO ordered all wildland fire crews to pull back to Hay River and at 3:00 PM the evacuation order was issued for Hay River. At 4:00 PM the IC received a mobile phone alert indicating the evacuation order for Enterprise. Compounding and complicating the events at this time was the concurrently intensifying situation at Fort Smith. Fire SS007-23 had been burning near Fort Smith and was threatening the town at the same time. An evacuation order was issued on August 12 for the Fort Smith area and many people were directed to Hay River. Once arriving in Hay River, they were subjected to the Hay River evacuation order and were subsequently forced to leave within 24 hours.

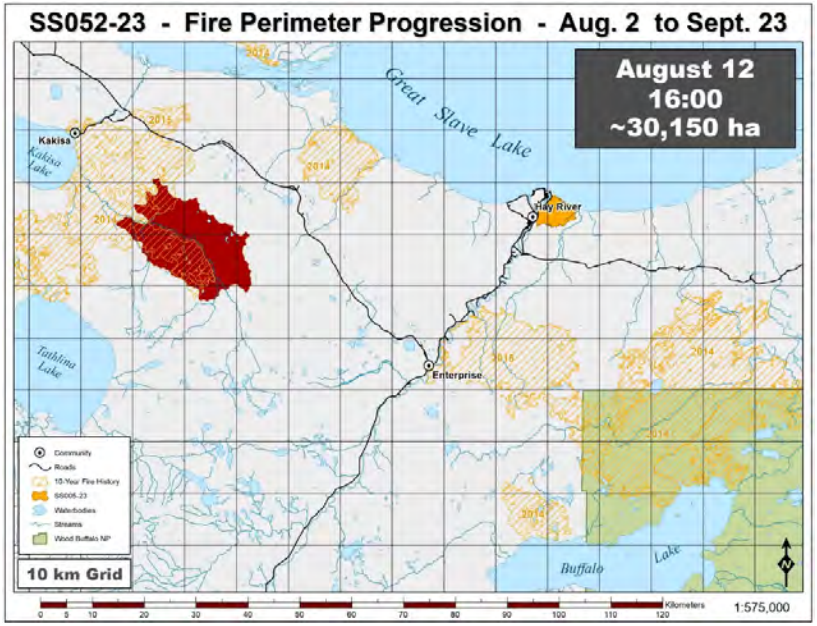
By 8:10 PM on August 13, 2023, the fire size reached 73,320 hectares and the town of Enterprise was largely consumed by the fire. An estimated 80 to 90 percent of the structures in Enterprise were reportedly lost[4]. SS052-23 continued to burn toward the town of Hay River burning homes and structures in Paradise Garden and Patterson Road.[5] . Communications were compromised as communications towers were burned, resulting in a reliance on satellite phones and star link connections.

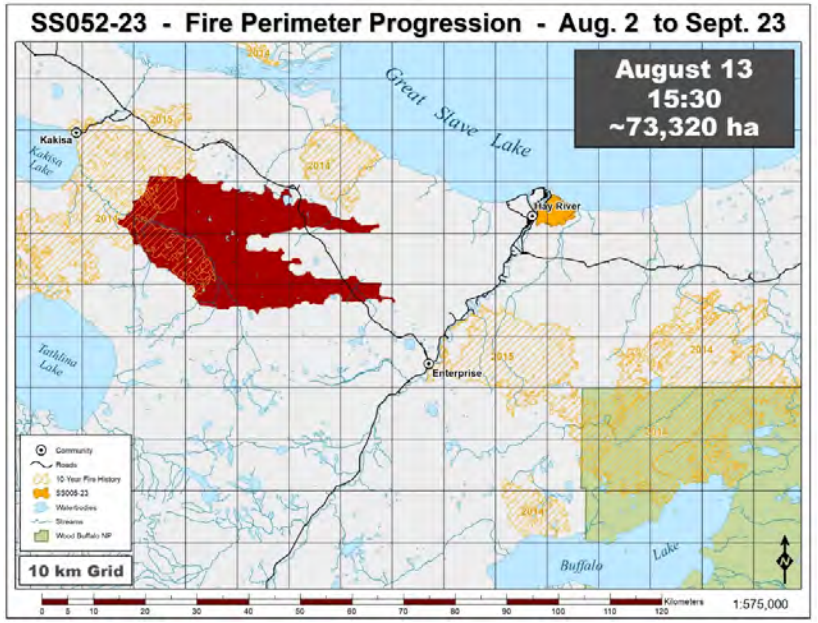
By August 14, 2023, the fire was estimated at 159,640 hectares and by August 15, 2023, the fire size grew to 167,220 hectares as hazard conditions and winds persisted. Figure 6 illustrates the fire growth over the four-day period. On August 15, preparations for incoming resources from the Canadian Armed Forces and imported wildland fire crews from Ontario began. Military crews were arriving in Yellowknife beginning on August 14 with an initial deployment of 124 personnel primarily assigned to fire ZF015-23, along with aircraft and support equipment. A second deployment focused on the Hay River-Enterprise area and involved an equal or greater number of personnel. In addition, a second CC-130J Hercules aircraft for evacuation support and a helicopter for ground support were made available.

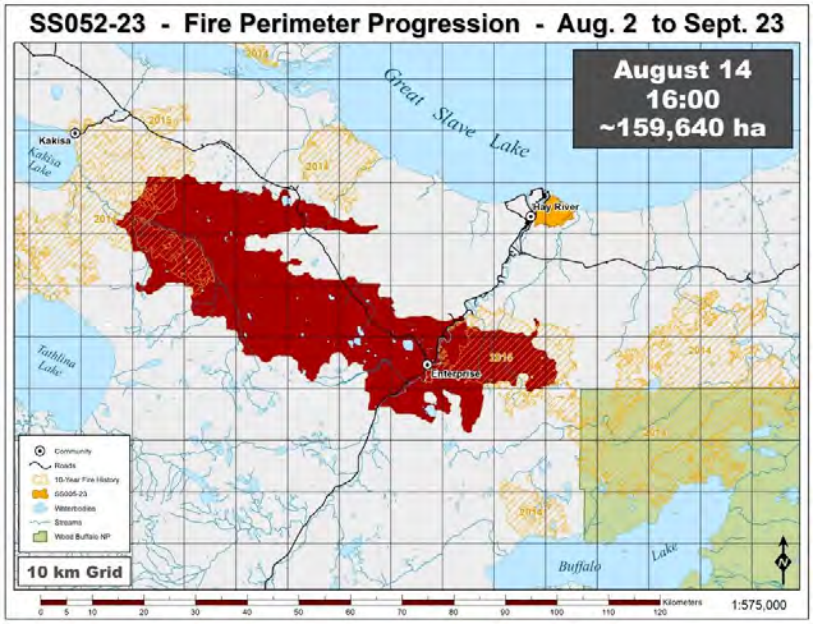
[4] A loss range of 80-90% has been used as differing accounts of the loss percentages were provided, depending on the source. Sources include senior administrative officials of affected communities and major media, including CBC and Global.

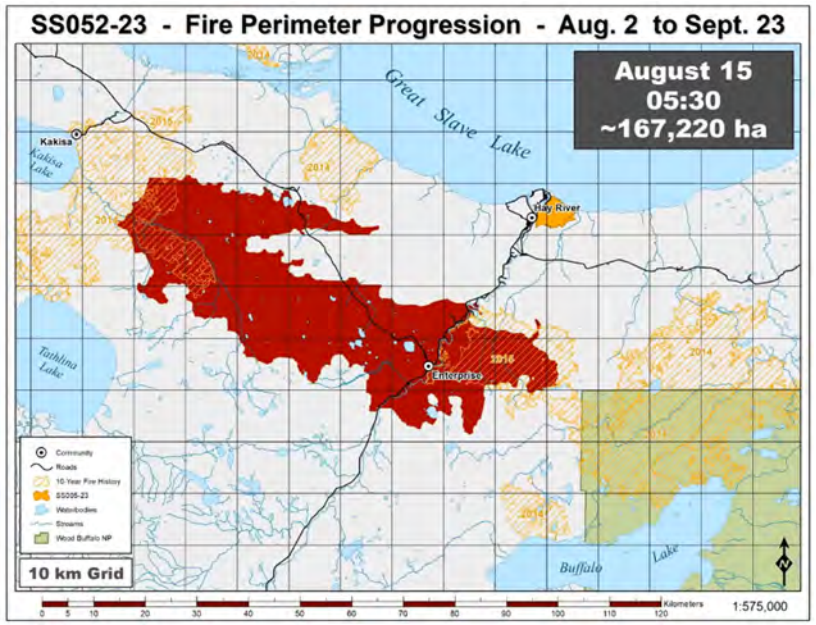
[5] Paradise Garden is located approximately 26 kilometers to southeast of Hay River, and approximately 25 kilometers northwest of Enterprise. Patterson Road is located 21 kilometers southeast of Hay River and approximately 19 kilometers northwest of Enterprise.

Figure 6: SS052-23 Wildfire Progress August 12-15, 2023. Produced by ECC.







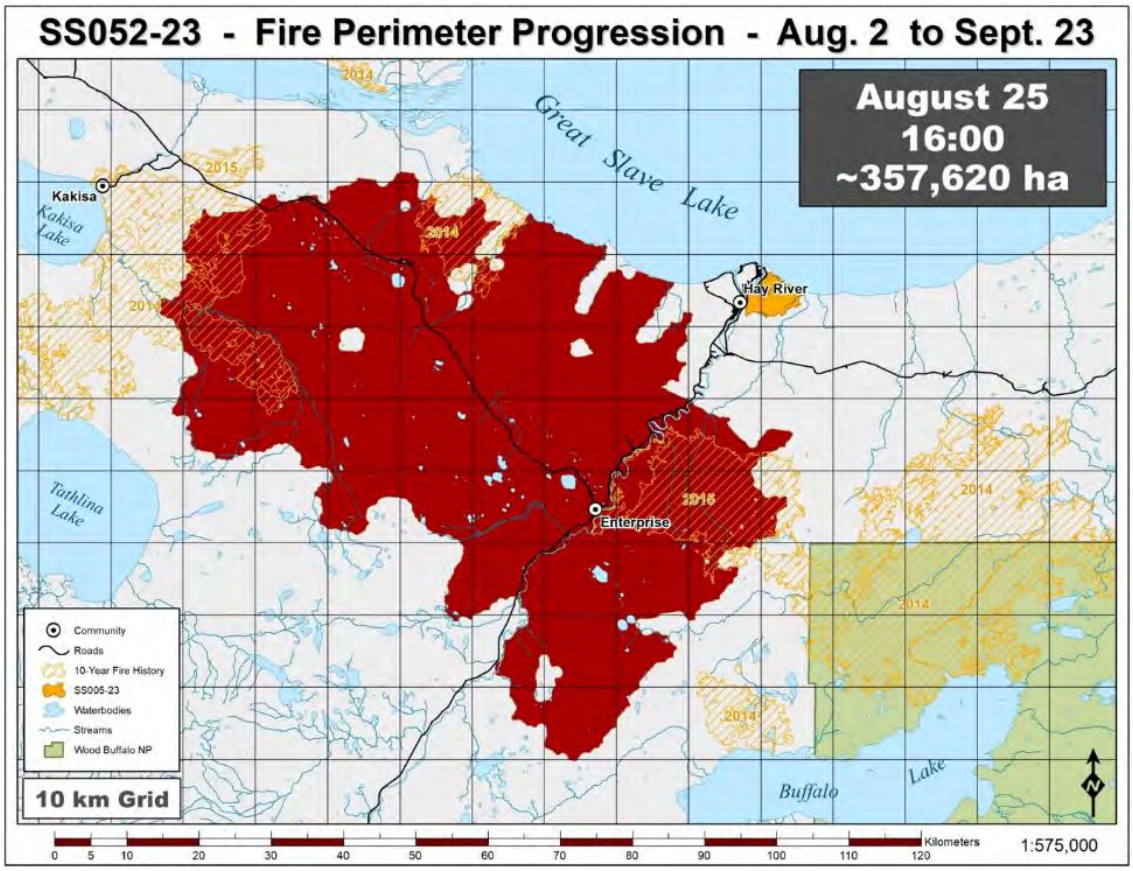


August 16 and 17 were days of significant growth for SS052-23 as the wildfire spread to the east and continued to encroach on the Hay River town boundary. On August 17, the IMT was established, and wildfire responsibility was transferred to an Incident Commander from the Ontario Incident Management Team (IMT).

On August 25, blow-up conditions reoccurred and all remaining non-essential personnel in Hay River were ordered to evacuate. Indirect attack operations were implemented on the west side of Hay River to the Great Slave Lake shore to protect as much of Hay River and the surrounding area as possible. The burn operation was supported by helicopters with buckets, and structural fire teams close to Hay River.

Overall, the indirect attack operations were deemed successful. However, after incident reports and town officials indicated most structures within the town of Enterprise were destroyed– reportedly 80 to 90 percent. The main fire caused the loss of four homes on Patterson Road and another three or four were lost at Paradise Gardens.[6]Two cabins were also lost along the shore of Great Slave Lake, west of the west channel area. No loss of life and only one significant injury were reported directly associated with the fire.

Figure 7: SS052-23 Wildfire Progress. August 25, 2023. Produced by ECC.



[6] These buildings are considered Hay River structures despite residing outside the municipal boundaries.

SS052-23 Timeline Overview

In this timeline for SS052-23, certain conditions and significant events are identified to help understand the role that environmental conditions, suppression activities, and certain events played in the progression of the wildfire.

July 21, 2023: Fire Ban Put in Place: The GNWT issues a fire ban for the entire South Slave region.

August 2, 2023 – Wildfire Start: The SS052-23 wildfire was ignited by a lightning strike on August 2, 2023, at a location between the town of Hay River and Kakisa.

August 2, 2023 – Detection and Initial Attack: Detection occurred at 2:12 PM on August 2 by an ECC employee on a fixed-wing smoke patrol. The fire size was estimated at three hectares. Fire behaviour was moderate, reflecting moderate to high hazards and low winds. Initial attack by a wildland fire crew commenced shortly after detection with the fire estimated at 20 hectares. By the end of the day, the fire was estimated at 80 hectares in size. The wildfire was classified as Type 4 at this time and a smoke report was completed.

August 4, 2023 – Airtanker Operations and Crew Withdrawal: As the wildfire spread significantly on August 3 and August 4, airtanker operations were attempted, but terminated due to high winds and smoke conditions. Wildland fire crews were pulled off the fire due to smoke restricting helicopter flights and risks associated with the rapidly spreading fire. The fire size was estimated at 850 hectares.

August 5, 2023 – Fire Growth Overnight: The fire made a seven-kilometer run south overnight. Crews were working to the north and northeast to protect Kakisa.

August 6, 2023 – Fire Location: The fire was reported to be 5,900 hectares with a four-kilometer run to the west overnight. The fire was now 38 kilometers northwest of Enterprise, 32 kilometers southeast of Kakisa, and 11 kilometers west of Highway 1. Crews and rotary wings were working on the north and northeast sections of the fire.

August 6, 2023 - Wildfire Situation Analysis Filed: Limited action was the determined course of action to prevent growth towards Highway 1 disruption of traffic to Yellowknife and Fort Simpson.

August 7, 2023 –Fire Progresses Towards Kakisa: Crews still working on the north and northeast sections to protect Highway 1 and Kakisa. At 7:00 PM under wind gusts, the fire ran three kilometers to the northwest towards Kakisa. The IC speculated the fire had the potential to reach Kakisa overnight. The RDO reports the size at 7,111 hectares.

August 8, 2023 – Rapid Fire Growth Approaching Kakisa: The fire growth on August 7 and 8 resulted in the fire approaching within 18 kilometers of Kakisa. This necessitated a prompt response from an air tanker group. While the air tankers took off and travelled towards the fire, they were unable to reach the fire and the mission was called off due to extremely low visibility and aggressive fire behaviour. The fire size was recorded by the RDO at 21,730 hectares.

August 8, 2023 – Evacuation Alert: An evacuation alert for Kakisa is issued on the afternoon of

August 8.

August 9, 2023 – Minimal Fire Growth Overnight: The fire had little movement overnight. The overcast conditions limited air operations but air tanker operations began at 3:51 PM until they were rained out at 6:29 PM. The size of the fire was estimated to be 26,903 hectares.

August 10, 2023 – Limited Fire Spread: There was no spread of the fire towards Kakisa. Air tanker operations started at 11:18 AM and operations ceased at 7:18 PM due to limited visibility. The RDO estimated the fire to be 27,985 hectares.

August 11, 2023 – Value Protection Work: Crews and air tankers worked on the northeast flank of the fire to complete values protection work. A new IC arrived in Hay River and the fire size was estimated at 28,040 hectares.

August 11-12, 2023 – Enterprise Gateway Jamboree: More than 600 visitors are in Enterprise to participate in the annual Enterprise Gateway Jamboree.

August 12, 2023 – ICS Established: The ICs first day on the incident was August 12.

August 12, 2023 – Low Visibility and Fort Smith Evacuation Order: BD102 assessed the fire at 12:08 PM but air tanker operations were limited by low visibility. The RDO estimates the fire to be 30,150 hectares. An evacuation order for Fort Smith in relation to SS0007-23 is issued and residents are directed to Hay River.

August 13, 2023 – Intensive Growth and Impact on Enterprise: Hazard conditions leading up to August 13 were extreme with winds increasing and smoke restricting operations. August 13 was characterized by an unprecedented combination of extreme burning conditions and high winds gusting to over 90 km/hr. Explosive fire growth resulted in the fire approaching Enterprise and the highway leading out of Hay River.

August 13, 2023 – Evacuation Order and Resource Pull Back: At 12:28 PM ECC and MACA, including EMO, discuss evacuation orders for Enterprise, Hay River, Kátł'odeeche First Nation, and Kakisa as a precaution. At 2:53 PM the RDO orders all resources to pull back to Hay River. The order to evacuate Hay River, along with KFN, was issued at 3:00 PM, and at 4:00 PM the IC received a mobile phone alert indicating the evacuation order for Enterprise. Residents relocated from Fort Smith are subsequently redirected to locations outside of the NWT due to evacuation orders for Hay River.

August 13, 2023-Enterprise Burned: By 8:10 PM, it was reported that a large percentage of Enterprise was lost due to the wildfire and parts of Hay River (Paradise Garden and Patterson Road) were also burned. The fire size reached 73,720 hectares.

August 13, 2023 – Telecommunications Affected: Fibre optic line compromised, impacting Hay River, Fort Smith, Fort Providence, and Jean Marie River.

August 14, 2023 – Fire Growth: The fire was mapped at 159,640 hectares at 5:26 PM. Having burned over Enterprise, the fire was spreading northward towards other nearby homes and cabins as well as Hay River.

August 15, 2023 – Continued Intensive Growth: Within two days, the fire size grew to 167,220 hectares as hazard conditions and winds persisted. An injured tanker base employee was airlifted to Yellowknife and further aircraft and ground operations were halted due to low visibility.

August 15, 2023 – First Written IAP Issued: The first written IAP listed two incident commanders.

August 15, 2023- Territorial State of Emergency: The Minister of MACA declared a Territorial State of Emergency for the whole of the NWT, allowing the GNWT to acquire and deploy necessary resources.

August 16, 2023 – Fire Growth in All Directions: On August 16, dramatic growth occurred in all directions as hazards remained extreme and winds again became highly variable. The fire size was mapped at 226,936 hectares at 9:28 PM.

August 17, 2023 – Fire Growth and Kakisa Evacuation Order: The fire was mapped at 232,670 hectares at 9:33 PM. Kakisa evacuation order issued.

August 17, 2023 – IMT Established: An IMT from Ontario took over the wildfire, positions on the IMT were also filled by regional employees.

August 18, 2023 – No Overnight Growth and Incident Management Team Transition: The fire was mapped at a sustained 232, 670 hectares as of 10:07 PM, indicating no growth overnight. The Ontario Incident Management Team arrives and transitions onto the fire.

August 19, 2023 – Minor Fire Growth: The fire was mapped at 232,780 hectares at 1:34 PM

August 20, 2023 – Town of Hay River Threatened: As the fire pushed to the northeast, the town of Hay River was threatened. Visibility improved enough to direct air tankers to lay lines of retardant on the west side of the community, helping to protect it from the advancing fire. At this point, the fire size was mapped at 237,970 hectares.

August 25, 2023 – Fire Growth and Fire Reached South Shore: As the winds shifted to a more southerly flow, the fire reached the south shore of Great Slave Lake and the northwest outskirts of Hay River. The remaining residents and non-critical emergency workers were ordered to prepare for evacuation and later to evacuate. The fire size was estimated at 357,620 hectares, with 120,000 hectares of fire growth in five days.

August 29-302023 – Fire Growth and Fire Surrounds Hay River: The fire was mapped at 447,140 hectares growing to surround Hay River.

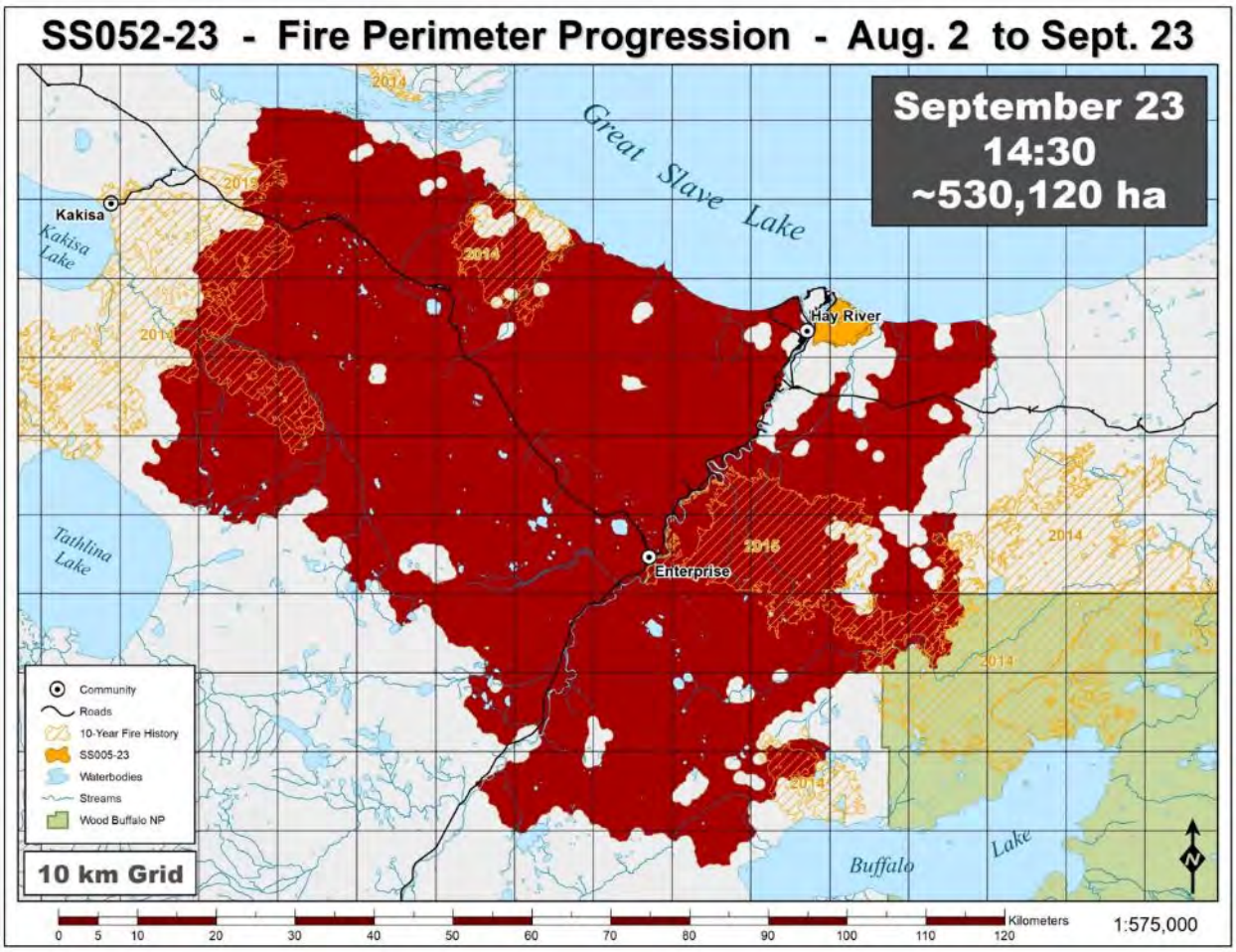
September 4, 2023 – Fire Growth: The fire was mapped at 458,700 hectares at 10:45 AM, exhibiting minimal growth over the past several days.

September 12, 2023 – Fire Growth Moderates: Between August 30 and September 12, the fire grew less than 40,000 hectares to 486,170 hectares in size. The fire encroached on the Wood Buffalo National Park at this point, however, it was not expected to grow much further in size.

September 23, 2023 – Moderate Growth and Mop Up Activities Extend into the Fall. Shorter days, lower temperatures and higher relative humidities resulted in much less aggressive fire behaviour and slower fire growth, though the wildfire was still not fully under control.

September 28, 2023 – Fire Size: The fire was mapped at 522,284 hectares.

Figure 8: Figure 8: SS052-23 Wildfire Progress. September 23, 2023. Produced by ECC



October 2, 2023- Territorial State of Emergency Lifted: The Minister of MACA lifted the Territorial State of Emergency. Fire bans were also lifted.

October 3, 2023 – IMT Stood Down: IMT team from Ontario departs.

April 8, 2024 – Fire Reported as Out: The fire was completely out and posed no further threat.

Associated Notable Events

The following notable events associated with the timeline provide insights into the effectiveness of the wildfire response.

1. Changing Priorities Forced by Changing Wind Direction.

Within the context of extreme drought and fire hazard conditions, the changing wind direction and subsequent fire spread required changing strategies and tactics at a time when leadership and resources were spread out among many other wildfires. It appears that the capacity of the organization to deal with this type of challenge given so many other demands at the time was exceeded.

Initially, SS052-23 began moving southward, away from Highway 1 and the community of Kakisa. A few days later, the fire grew northwest and westward driven by easterly and southeasterly winds. The suppression priority was the protection of Kakisa and Highway 1, as a critical transportation corridor, at this time. This formed the basis of the strategy from initial attack on August 7 to August 12. The strategy also recognized the numerous other fires in the region that started at approximately the same time and required attention. August 7 and 8 were days of significant fire growth pushing the fire to within 18 km of Kakisa. Priorities changed a few days later as winds shifted, coming from the west and southwest and pushed the fire toward Enterprise and Hay River. While both communities were priorities, smoke and extreme winds limited the ability to use air tankers. As the fire grew rapidly, the communities of Enterprise, Hay River, Kakisa and Kátł'odeeche First Nation were evacuated mid-day on August 13 and within hours the wildfire burned over the hamlet of Enterprise and the outlying portions of Hay River. Hay River remained threatened until early September. While much of Enterprise was lost to fire, losses to Hay River, Kakisa and Kátł'odeeche First Nation were more limited.

2. Loss of the Hamlet of Enterprise.

In the days leading up to the fire, the hamlet of Enterprise hosted the annual Enterprise Gateway Jamboree. The presence of more than 600 visitors in the community on August 11 and 12 indicates the fire was not an active concern for the community. It also suggests that the predictive ability of the NWT's wildfire modelling capacity was unable to keep pace with the changing conditions, and/or suggests a significant gap in communications between ECC, MACA, and the community EMO. This coupled with what appears to be an overall lack of situational awareness created a dangerous situation in Enterprise.

3. Losses in the Community of Hay River

The extreme fire danger index and burning conditions coupled with high winds and limitations, wildland fire crews and fire managers were unable to contain the fire. The loss of homes, businesses, and other structures in the hamlet of Enterprise on August 13 represents a significant impact and substantial loss and disruption to many individuals and businesses. The fire reached Paradise Garden and Patterson Road on August 13 resulting in the loss of seven homes and

structures. The fire continued to expand towards the community of Hay River reaching its outskirts and homes on the south shore of Great Slave Lake on August 23 to 25. All non-essential personnel already not evacuated on August 13, were evacuated by August 25.

4. Successful Use of Indirect Attack.

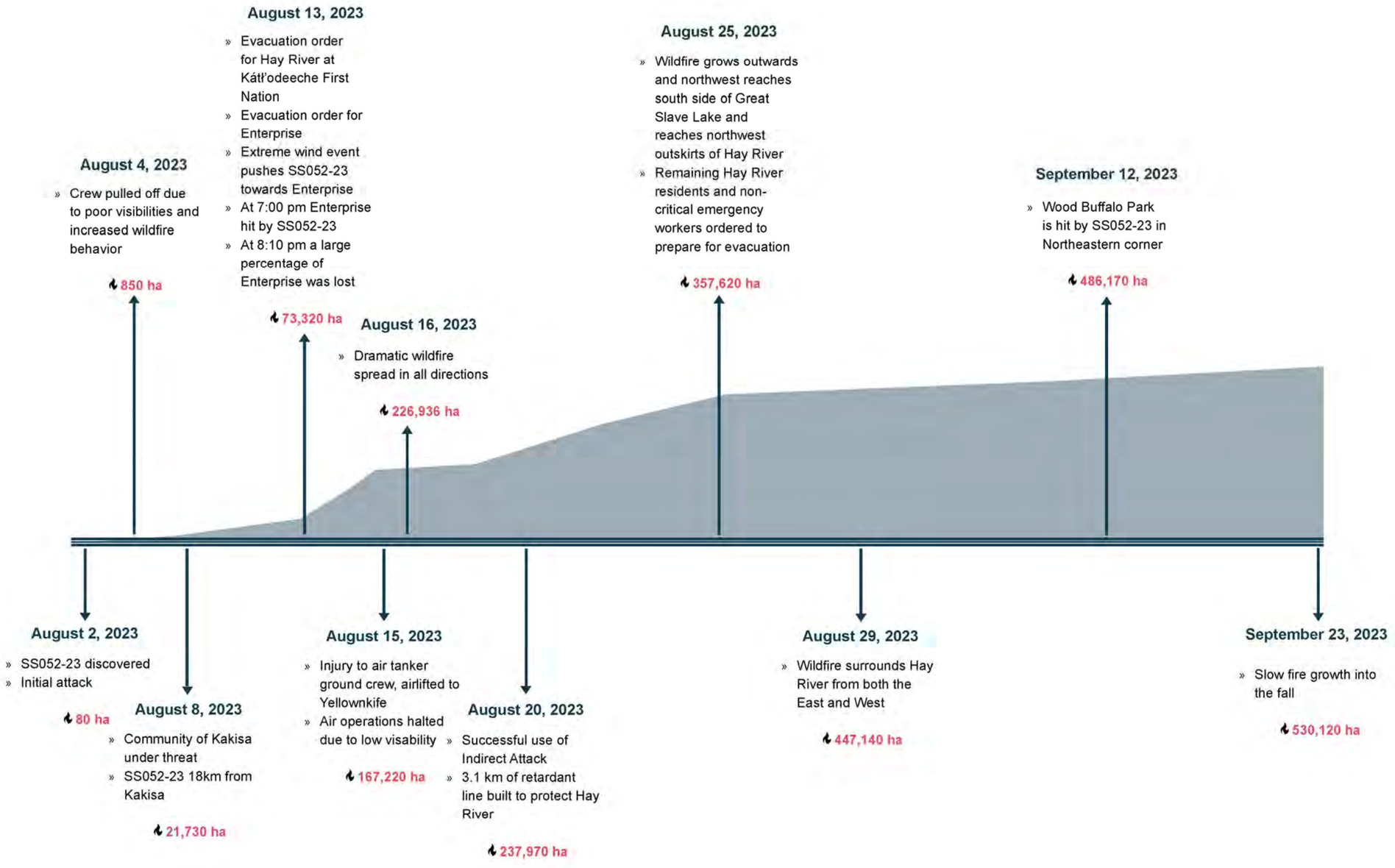
The use of indirect attack strategies at Hay River was successful, validating the value of using indirect attack operations when conditions are favourable, and support is available. Indirect attack operations west of Hay River supported by helicopter bucketing and ground crews are credited with preventing the wildfire from directly impacting the town and preventing loss. This is an important event because indirect attack tactics are key tools available to the NWT in wildfire management; however, used improperly or under the wrong conditions, can be highly counterproductive.

5. Smoke Affecting Air Operations.

For much of the period covered by the SS052-23 wildfire, smoke was a significant factor limiting fire suppression operations. On many occasions air tankers were unable to fly due to poor visibility, resulting in the inability to use air tanker retardant drops or amphibious tanker operations to support suppression strategies. In addition, poor visibility made helicopter flying impossible and unavailable to transport and service wildland fire crews. This was particularly important on August 12 and 13, the period of time immediately leading up to the extreme conditions that caused the fire to run towards Enterprise.

SS052-23 Timeline

The figure below details the timeline for key events of SS052-23



Observations and Analysis

Several observations arise from the review of the SS052-23 wildfire in relation to conflagration itself as well as the wildfire response, decisions, and actions associated. These observations are intended to inform the overall wildfire management review and for improvement recommendations of the program. Observations are as follows:

Limited Reporting from August 2 to 11:

There was a noticeable gap in the reporting of the wildfire situation between August 2 and 11, including a lack of formal IAPs and records of decisions and results. Engagement participants noted a gap in reporting and reflected that the lack of information availability may have hindered the decision-making process, potential response strategies, and effective communications with EMOs and communities.

It is understood that there were many wildfires starts during this time due to lightning. Conditions were conducive to the rapid establishment and growth of new wildfires that likely contributed to deprioritizing written documentation. While this shift in prioritization of the documentation process can be explained, it diminishes the IMTs and the region's ability to develop a robust sense of situational awareness. The limited documentation and reporting are indicative of the organization's capacity being overwhelmed by the demands of this fire and concurrent fires within the region.

Documenting plans, actions, and results is fundamental to ICS and is essential to effective communications. Developing and sharing a common and detailed understanding of the situation is critical to the development of response strategies and priorities. This lack of reliable and real-time documentation makes the subsequent review and learning processes more challenging.

Frequent Personnel Changes:

Personnel assigned to IMTs frequently changed, causing communication challenges and decision-making inefficiencies. Frequent personnel changes disrupted the team dynamics, communications, and the continuity of operations. While priorities change over time and personnel changes need to be made to meet these demands, a higher degree of consistency in team composition is crucial for maintaining operational efficiency. The rapidly changing situation at the regional level, coupled with the necessity to allocate limited leadership resources across multiple concurrent wildfires, explains the frequent personnel changes.

Several engagement participants observed ICs were changed frequently leading to a lack of continuity of leadership and strategy. Information reviewed regarding assignments for IC roles suggests that the normal rotation was used whereby a 14-day assignment was the norm with overlap between the outgoing and incoming IC to provide briefing and coordination of strategy. There were, however, clear indications that key IMT positions were changed frequently as priorities at a territorial level changed and qualified individuals were in short supply. This was especially noticeable in the Operations, Planning and Finance/Admin roles. Consequently, certain key ICS

positions were frequently filled by inexperienced personnel, and individuals often assumed multiple roles within the ICS structure.

Changes in Incident Management Teams Makeup and Size and ICS Breakdown:

Reports indicated that inexperienced or unqualified individuals were assigned to key positions, resulting in reduced effectiveness. These reports are substantiated by the records, which highlight instances of the individual(s) assuming multiple roles and/or filling positions for which they lacked the requisite qualifications. The demands of the 2023 fire season exceeded the capacity of the wildfire management organization at times and as such, it was necessary to fill certain roles with the best available resources. However, the lack of qualified and experienced resources in leadership positions was notable on several occasions.

For example, the engagement of retired personnel with past experience in wildfire management but no recent training or current field experience occurred regularly during the 2023 wildfire season. While retired personnel can provide needed capacity and experience there is a risk of assigning these individuals to roles that are beyond their current capabilities and resulting in a risk of underperformance or misdirected efforts.

In part, the issue related to inexperienced, and/or unqualified, and/or uncertified personnel in key wildfire response roles reflects a miscommunication or a lack of understanding between FMD and regions. FMD is responsible for the deployment of resources between regions and from outside the NWT (i.e., specialists and retired professionals) and is done with specific roles and duties commensurate with their experience and certifications in mind. Reassignment to other roles once at the region level occurred several times resulting in the difficulties noted above.

Finally, multiple contributors noted that two separate IC were established: one responsible for the structural fire response in Hay River and the other for the overall wildfire response. While contributors noted this "worked well once underway" it is a notable departure from overall ICS practice. Contributors were also under the impression that the two ICs were working under a UC structure. ECC confirms that no UC was established for SS0052-23.

Communication Challenges:

There were significant communication challenges during fire SS052-23, particularly in relation to the level and quality of communication from GNWT to local EMOs and community members potentially impacted by wildfires.

In the initial stages of SS052-23 communication between ECC and MACA was reportedly effective, according to some participants. This included communications during the initial attack and active suppression phase of the fire. Participants indicated that the lines of communication were primarily between employees from FMD and MACA, with input from regional ECC employees. In addition, communications between the IMT and the community of Kakisa were reportedly effective as the community was kept informed and prepared for a potential evacuation. Later in the wildfire's timeline, communications directed to the EMO and community members were considered less effective.

As reported a lack of clarity on the roles and responsibilities of informing the EMO and communities about the fire situation emerged in mid-August as the fire began to intensify. It was clear that members of the communities of Hay River and Enterprise were not fully informed and aware of the risks and potential threat of the fire to their west. While MACA may have the primary responsibility for working with and informing town leadership, the information is held by ECC and it is ECC's responsibility to source, provide and interpret the data. The fact that Enterprise hosted 600 visitors in the 24-hour period before SS0052-23 burned over the community suggests the fire was not an active concern indicating a lack of communication and/or situational awareness that should accompany unpredictable wildfire activity near human habitation and values. Similarly, the town of Hay River reported they were told the fire would be to the community's boundary within four hours of the evacuation notice on the afternoon of August 13. Town officials noted the fire arrived in Paradise Gardens within two hours of the evacuation notice.

Communications also deteriorated between the region and the IMT, resulting in difficulty in assigning required resources and a failure to inform the IC of resources being redeployed from the fire to other fires or regional responsibilities. The loss of communication infrastructure because of the fire and continued severe fire weather, wind events, and over twenty fires simultaneously burning in the region continued to complicate communications around the wildfire response. There was a limited understanding of how and where to access certain critical data. At times, resources were reportedly transferred from an IMT to another fire or regional role without informing the IC, disrupting the effectiveness of the team. In other cases, communications challenges related to evacuations were reported by engagement participants. For instance, participants stated that the decision to evacuate Enterprise was not communicated to the IC or IMT, which resulted in the need to reconsider planning within tight time frames.

These communication challenges significantly affect performance and safety. It will be critical in future situations for communications roles and responsibilities to be clear, fully understood and effectively implemented.

Limited Medium and Long-Term Wildfire Projections and Reporting:

There were significant gaps in wildfire behaviour predictive modelling, particularly for medium to long-term projections. The focus of fire behaviour analysis appears to be focused on the one-to-three-day timeframe. This timeframe is helpful from a tactical planning and safety perspective but is inadequate in terms of strategy beyond one or two days. In a situation such as the South Slave region in early August 2023, building a strategy based on predictive modelling beyond one to three days would have been important to maximize community protection efforts.

Improved forecasting could have helped better understand the wildfire's potential to change direction and approach Enterprise and Hay River. This would have allowed for more proactive evacuation preparations and a longer-term strategy for resourcing and prioritization of operations. As an example, Fort Smith residents were evacuated to Hay River on August 12 and then subsequently evacuated out of Hay River the next day. A longer-term outlook may have avoided these difficulties and unnecessary duplication.

Use of Outdated Wind Forecasts:

Wind forecasts are critical for predicting wildfire behaviour. Early in the timeline, the use of short-term and outdated wind forecasts resulted in the prioritization of the protection of Kakisa, with no or limited attention being given to the east side of the fire that had the potential to impact Enterprise and Hay River. Shifts in winds to a westerly flow along with increasing wind speed and gustiness were predicted as much as five days in advance. Given that the winds changed and behaved as predicted on August 13, the strategy to prioritize Kakisa based on outdated information was misguided. The use of accurate and timely wind forecasts is crucial for determining which areas are most at risk. This situation emphasizes the need for early success on fires that have the potential to impact communities, regardless of the immediate winds and conditions. It also brings into question the effectiveness of the strategy to prioritize the operations on the north and northwest sections of the fire without a broader and more forward-thinking strategy to address the east section.

Resource Management:

Despite initial communication challenges in and around the August 13 run on Enterprise and Hay River, the cooperation and pre-wildfire season planning between territorial, local government and other agencies was reported to be effective and a positive aspect of the response to fire SS052-23. However, by some accounts, it was Hay River's previous experience with emergency response and evacuation[7] that served as "effective preparation" for SS0052-23 facilitating the community's quick response and evacuation despite the delayed communications. Experience related to emergency response also facilitated Hay River's structural fire operations, standing up of their IC, protecting the community over the August 20-25 run, and providing support to outlying communities and structures. Some engagement participants also noted that pre-wildfire season planning, and relationship building is not as robust as it could be and requires improvement.

Coordination of wildland fire operations and structural fire operations can be complex, requiring the application of different types of training and expertise in different situations. Continuing to build and strengthen these working relationships in the NWT must be a priority.

Quality of Incident Action Plans:

IAPs for the first ten days of the fire are unavailable. While IAPs are not required for all fires (as per the ECC Required Planning for Wildfire Events guidelines), it appears, given its initial proximity to Kakisa that fire SS0052-23 was a high priority fire from start. Only one IAP was found to completed between August 2 and August 15, and participants indicated that a verbal wildfire response plan was completed around August 2. No written IAPs appear to have been completed until August 15. Subsequent IAPs prepared after August 23 generally demonstrated thorough preparation and effective planning, reflecting well on strategy formulation. However, there is potential for

[7] Hay River had previously evacuated twice in the proceeding 16 months. Once for a flood in May 2022 and the other for SS0005-23 in May 2023.

improvement in maintaining discipline in completing these documents and ensuring consistency in their content. IAPs are critical as they form the basis for a common understanding of the strategy, tactics, and expectations of the day's activities.

The gaps in IAPs make it difficult to understand the full scope of events and responses leading up to the evacuations of Enterprise and Hay River. This, in turn, makes it difficult to understand how prioritizing and actioning the west side of the fire to protect Kakisa was successful while the planning and actions on the east side of the fire to protect Enterprise and Hay River afterward were not.

The RPWE intended to provide direction to fire managers for the planning required for all fires and indicate the specific documentation required to support response decisions (e.g., smoke report, fire assessment, IAP, etc.) A review of the RPWE revealed that in some areas there is a lack of clarity on planning documentation requirements and could be left open to interpretation. This lack of clarity may have contributed to an absence of some key reports during various stages of the wildfire (e.g., a lack of written wildfire response plans).

Conflicting Information:

There were many examples of conflicting information in reviewing and comparing interview notes, duty logs, personal notes, and IAPs. This is particularly the case regarding the timeline of events and fire size. Accurate information is crucial for reviewing and analyzing wildfire operations and emergency responses as well as providing a foundation for future learnings. Part of the purpose of documenting events and reporting data is to establish a means of reviewing, improving, and training current and future wildfire management personnel.

Imported Resources and Teams:

The Ontario IMT did two tours to support the response to SS052-23. Follow-up reports were very positive in nature and included observations about the dedication and teamwork of local crews and regional personnel. The success reflects positively on the national system of standards for training and certification as well as the application of a commonly understood incident command structure on wildfire responses.

The military resources were welcome additions to the firefighting effort, however, lacked the specific wildfire tactical training and experience to offer direct fireline services. Engagement participants also noted their logistical needs limited the military's ability to pivot quickly in response to the rapidly changing situation. For the most part, they were primarily suited to mop-up activities, equipment moves, and other lower-hazard activities. Some IMT members observed that military helicopters deployed had lower skids that made use in the northern boreal more limited.

Recommendations

Seven recommendations have been identified in response to a review of the information available regarding the response to fire SS052-23. These include recommendations to address:

- Communications and situational awareness.
- Medium and longer-term weather and fire behaviour projections.
- Strengthening ICS capacity.
- Continuing, and where possible, expanding the use of resources from other jurisdictions.
- Strengthening the consistent and disciplined use of Incident Action Plans.
- Improving standard operating procedures related to fire size estimates.

Recommendations made here are specific to SS052-23. General recommendations related to ECC's overall response to the wildfire response are included in the Northwest Territories 2023 Wildfire Response Review.

Recommendations

1. Improve discipline regarding communications. It is critical for the IC to be fully aware of the wildfire situation, strategy, resourcing, and outlook.
2. Dedicate additional resources to medium and long-range fire weather and fire behaviour forecasting and analysis. The medium and long-range forecasts will help the organization better plan suppression strategy and better prepare for resourcing requirements. This will require an additional budget allocation for resources and data acquisition.
3. Utilize ICS principles to build up employees in appropriate positions. This means improving the design of training and qualification systems targeted to the various Incident Management Team positions. This will allow for improvements in utilizing qualified employees for key positions.
4. Continue the use of the Canadian Interagency Forest Fire Centre (CIFFC) to bring in resources appropriate for key IMT roles when able. In 2023, these qualified and experienced individuals were in high demand in Canada wide and it would not always be possible to fully meet demands; however, increased use of resources from other jurisdictions will help make improvements.
5. Develop a standard format or template for IAPs quality content. This will help with the issue of missing and inconsistent situational and planning data observed in this fire response.
6. Refine and finalize the Required Planning for Wildfire Events guidelines and ensure that the integration with software is clear and consistent (i.e., EMBER or SPARCS).
7. Develop standard size calculations and reporting processes to ensure "one source of truth" for communication of activities.

References

True North Weather Consulting. (2024). *2023 Fire Weather Report*.

Appendix C: Case Study: ZF015-23

Northwest Territories 2023 Wildfire Response Review

Case Study: ZF015-23

July 2024

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Contents

Table of Acronyms

Acronym	Meaning
AAR	After-Action Review
CIFFC	Canadian Interagency Forest Fire Centre
DO	Duty Officer
ECC	The Department of Environment and Climate Change (Government of Northwest Territories)
FBAN	Fire Behaviour Analyst
FMD	Forest Management Division (Government of Northwest Territories)
GNWT	Government of Northwest Territories
IAP	Incident Action Plan
IC	Incident Commander
ICS	Incident Command System
IMT	Incident Management Team
NRCan	Natural Resource Canada
NWT	Northwest Territories
RDO	Regional Duty Officer
RH	Relative Humidity
RPWE	Required Planning for Wildfire Events
UN	Unified Command
VAR	Values At Risk
ZF015-23	Behchokǫ̀/Yellowknife Wildfire

Introduction

Purpose and Structure of the Case Study

As part of the independent third-party review of the Northwest Territories (NWT) response to the 2023 wildfire season, individual reviews of two key wildfires were commissioned. This review relates to wildfire ZF015-23 (herein referred to as the Behchokǫ̀/Yellowknife wildfire).

The purpose of this individual wildfire review is to collect and review information available on the situational context, level of preparedness, initial response, sustained action, and other aspects relevant to the wildfire response. The review aims to identify areas of concern, where potential improvements to wildfire operations should be made, as well as areas of strength, where positive aspects of the program need to be sustained. This individual wildfire review includes the following four subject areas:

1. **Wildfire Overview:** An overview and description of the wildfire (ZF015-23).
2. **Timeline:** A graphic timeline and summary of events describing the wildfire event.
3. **Observations and Key Issues:** A synthesis of the information collected through interviews, workshops, and program files.
4. **Recommendations:** Suggestions for changes or improvements to enhance the wildfire capabilities.

Case Study Methodology

This case study of wildfire ZF015-23 is part of the larger *Northwest Territories 2023 Wildfire Response Review*, prepared by MNP, that looks at ZF015-23 and SS052-23 (Enterprise/Hay River wildfire) in the context of the broader Department of Environment and Climate Change (ECC) response. MNP used the following approach to understand the timeline of events for the Behchokǫ̀/Yellowknife wildfire.

February-April 2024	**Wildfire-Specific Data Review** MNP subject matter experts reviewed all data specific to each wildfire including information from the SPARCS and EMBER systems, True North Weather Consulting's *2023 Wildfire Weather Report*, Natural Resources Canada (NRCan) weather maps, and other weather data information provided by the ECC. Data was also derived from engagement workshops and interviews, Incident Action Plans (IAPs), and After-Action Reviews (AARs). The wildfire-specific data review findings were reviewed with representatives the from Forest Management Division (FMD) and incorporated into the report.
February 2024	**Site Visits** The MNP review team visited the two NWT communities where the 2023

wildfires caused structural loss – Behchokǫ̀ in the North Slave Region, and Enterprise and Hay River in the South Slave Region. These site visits allowed MNP to see the extent of the damage firsthand and to develop this report from a lens that grasped the significance and implications of the outcomes of the 2023 wildfires.

January 2024

Production of the Case Study

The ZF015-23 Case Study is the consolidation of the information gathered and analyzed. The case study contains an overview of the wildfire, a written timeline, a graphical timeline, observations, and recommendations for potential improvements to wildfire management operations.

Review Limitations

The review of the SS052-23 wildfire revealed significant gaps in data and information. Data regarding the Behchokǫ̀/Yellowknife wildfire came from a variety of sources including debrief or summary reports, IAPs, SPARCS, and engagement with ECC employees and other stakeholders involved in the wildfire response. The guideline document, *Required Planning for Wildfire Events* (RPWE), provides direction on IAPs and when other planning and assessment documents are required. Not all required reporting documents were completed and/or fully available at the time of this review. Absent or incomplete IAPs resulted in gaps in our understanding of the timeline, wildfire progression, and operations.

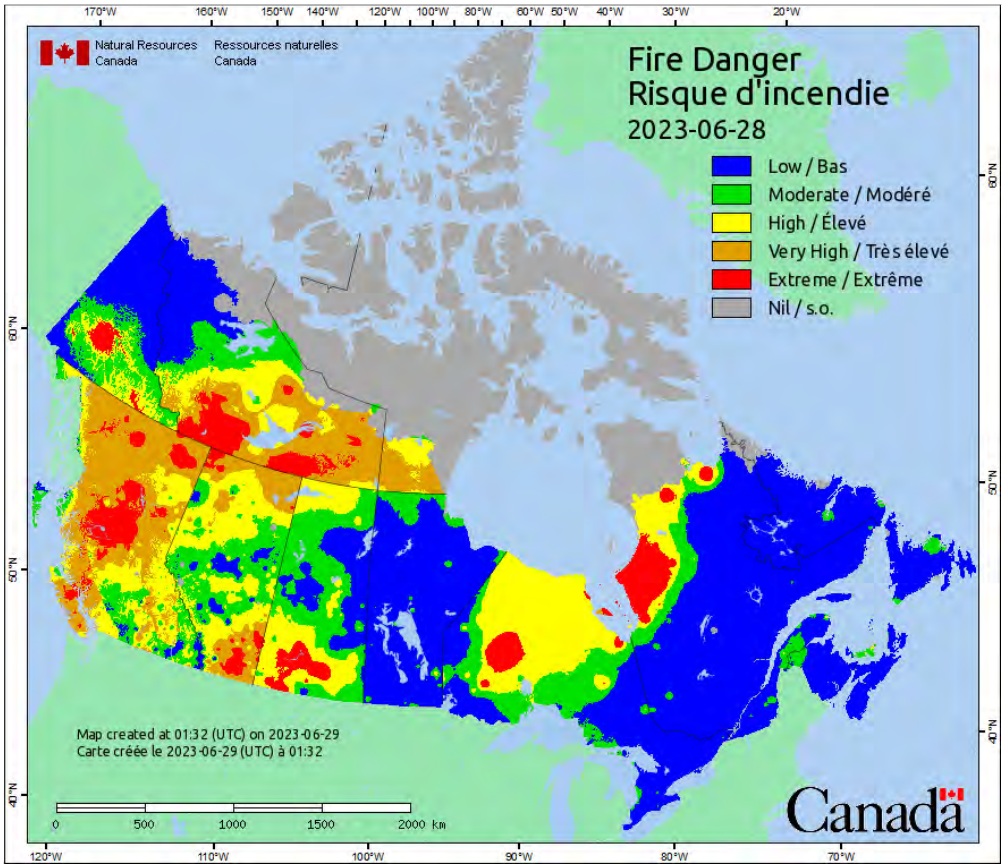
Stakeholder and ECC employee recollections also varied or lacked specificity in relation to details, times, and dates. Sometimes, the available information sources conflicted, for example, concerning the size of the wildfire or details related to the timing of the response. To ensure data consistency and reviewability, MNP prioritized the best data available including wildfire mapping data, IAPs, and personal notes. Where possible, maps that included wildfire size, date, and time of day information were also prioritized.

MNP notes that gaps in data and information likely relate to reporting requirements, delays in uploading documentation, and the unprecedented wildfire season rather than an unwillingness to provide the information. It is likely that extemporaneous IAPs and personal notes, as well as AARs, were not required and/or prioritized during critical wildfire response windows, as per the RPWE. Every effort was made by ECC to provide the data and information required for this review.

Wildfire Overview in the North Slave Region

In the days leading up to the identification of the ZF015-23 wildfire, western Canada generally, and the NWT specifically, experienced "high" to "extreme" wildfire danger. Wildfire danger is a relative index of how easy it is for a wildfire to ignite, how difficult a wildfire might be to control, and how much damage a wildfire may do. The Government of Northwest Territories (GNWT) uses a four-point danger rating scale (low, moderate, high, and extreme) and the ratings are derived from daily temperature, relative humidity, precipitation, and wind direction and speed observations. "High" wildfire danger signifies challenging surface wildfire requiring heavy equipment and/or air attack, while "extreme" denotes fast-spreading crown wildfire, hard to control directly. Figure 1 shows the wildfire danger rating provided by NRCan (using the five-scale danger rating scale) for the country on June 28, 2023. The danger rating demonstrates a significant hazard in the NWT, Yukon, and British Columbia.

Figure 1: Wildfire Danger for June 28, 2023.



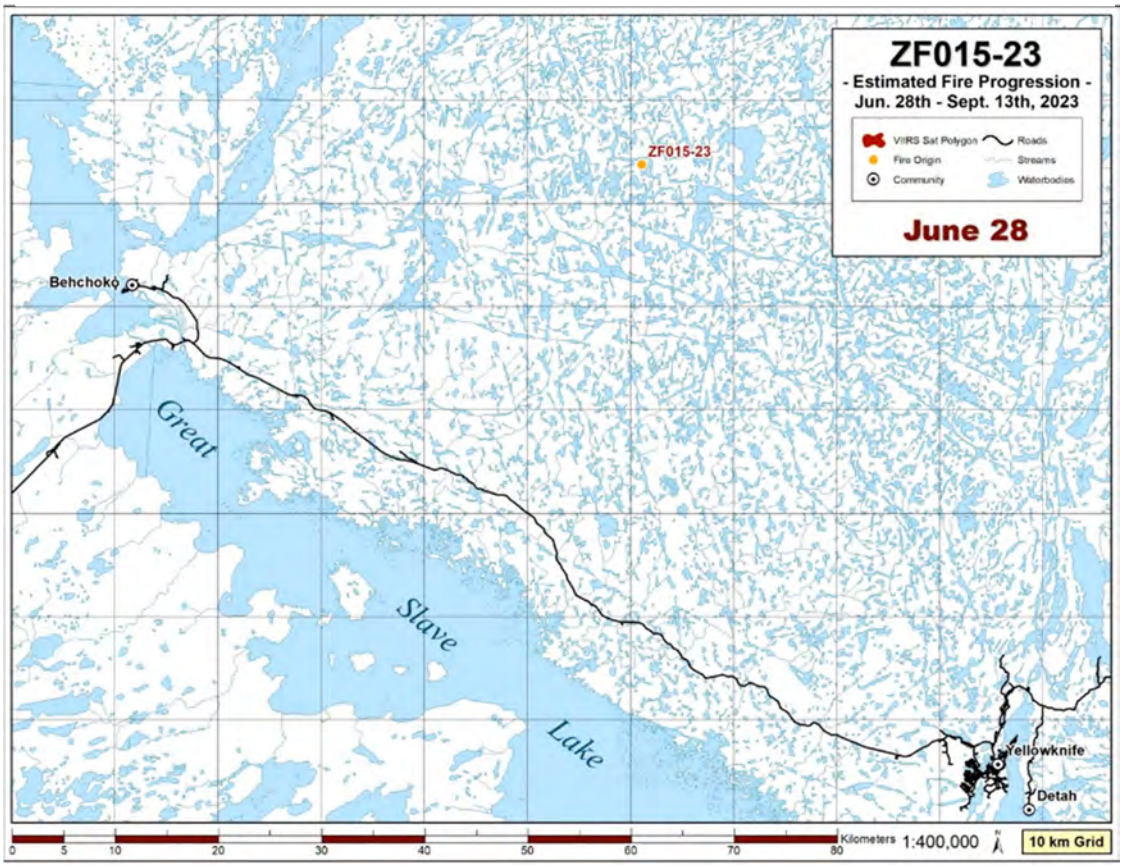
Further to the overall wildfire hazard situation in western Canada, local wildfire weather conditions were categorized as high to extreme, with wildfire behaviour-related indices linked to ground moisture, temperature, relative humidity, and winds conducive to aggressive wildfire spread.

According to the 2023 Wildfire Weather Report prepared for FMD, June had unusually warm temperatures interrupted by the passage of various weather disturbances that produced a high

frequency of lightning, active wildfire ignitions in the second half of June and below-normal precipitation compounding drought conditions (True North Weather Consulting, 2024). The drought conditions reflected weather conditions that persisted since the previous fall.

ZF015-23 Wildfire

Figure 2: Wildfire ZF015-23 at Discovery. June 28, 2023. Produced by ECC.



Wildfire ZF015-23 was first detected on June 28, 2023, approximately 60 kilometers northwest of Yellowknife (Figure 2). The wildfire was started by a lightning strike and was initially assessed at 56 hectares in size. The initial attack decision listed in the wildfire management database (SPARCS) was "limited action." An initial attack crew was not immediately deployed as the fire was relatively large at detection, and the very dry conditions, and high to extreme wildfire danger indices would require resources being diverted from other priority fires. The initial assessment highlighted the remote location of the fire, noting the presence of old burns and surrounding water bodies that provided natural containment. Additionally, numerous active wildfires throughout the North Slave at the time of ignition that required immediate action and were deemed priorities. This included the eight new wildfires that ignited in the North Slave in the two days leading up to the discovery of ZF015-23. Four of these fires required aggressive initial attack, including air tanker operations,

notably ZF009-23 burning near the community of Wekweètì.[1] The Wekweètì fire drew much of the available wildland firefighter and air tanker resources to protect. The community was evacuated on June 29, 2023.

By June 30, wildfire ZF015-23 was an estimated 289 hectares. The fire, driven primarily by north winds, spread south towards Great Slave Lake. Over the subsequent weeks, wildfire ZF015-23 continued to grow, exhibiting aggressive wildfire behaviour, spreading southward and westward towards Great Slave Lake with homes/cabins to the south and the community of Behchokǫ̀ to the southwest. By July 6 the fire was 4,446 hectares. The strategy and priority established in the initial stages of the response were the protection of values (cabins along Highway 3), communities (Behchokǫ̀ to the southwest), and critical public infrastructure required for transportation and access. In support of these protection objectives, indirect attack operations were used on two separate occasions—once early in the fire timeline on July 6, when the fire was 4,446 hectares in size, to prevent wildfire growth to the south and to prevent potential impacts along Highway 3, and once later in the timeline on July 18 when the fire was 25,702 hectares to prevent wildfire growth to the west toward the community of Behchokǫ̀.

The initial indirect attack operation on July 6 held for approximately five days, after which the wildfire spread southward and then west towards Behchokǫ̀. By July 12 the fire was 9,208 hectares. On July 14 the wildfire aggressively grew to the south toward Highway 3 while fire suppression efforts by both air tankers and fire crews were hindered by reduced visibility due to smoke. From July 15 to July 24 the wildfire continued to grow south and west towards Highway 3 and Behchokǫ̀. On July 23, indirect attack strategies were implemented on the west side of the wildfire and continued into July 24.

In the days prior to the wildfire, much of the Behchokǫ̀ and Tłı̨chǫ Government leadership and many community members were reported to be in Alberta for the Lac Ste. Anne Pilgrimage. The wildfire's limited/slow growth in this period, coupled with the focus on other wildfires, challenges around wildfire modelling, and gaps in communications suggest the community and its leadership were not fully aware of the developing wildfire situation and all associated risks.

On the morning of July 24, interviewees noted ECC communicated that "the community was ok," but by mid afternoon Behchokǫ̀ was ordered to evacuate. By the next day the fire began to make a run into Behchokǫ̀ and the fire base at nearby Frank Channel was evacuated. It is unclear, based on conflicting information when fire protection sprinklers were set up on select structures within and outside of Behchokǫ̀. The available information suggests sprinklers were installed in and around July 24-26. By the end of the day on July 24, the wildfire had burned 15 structures along Highway 3.

Records indicate the ZF015-23 encroached upon the community on July 26, with three structures lost to the wildfire. In contrast, interviewees reported that while ECC indicated that ZF015-23 was

[1] Wekweètì is a remote, fly-in community approximately 200 KM north off Yellowknife.

not projected to arrive until the morning of July 26 – it arrived around 5:30 PM on July 25. They also reported that ECC was not on the ground in Behchokǫ̀ until 9:30 PM and four structures were lost to the wildfire. The wildfire was now mapped at 98,128 hectares.

Interviewees reported that Unified Command (UC) was discussed, but not established with ZF015-13. However, varying degrees and accounts of cooperation was reported between ECC, MACA, the City of Yellowknife, the Behchokǫ̀ Senior Administrative Officer (SAO), the local Indigenous Government and the Regional Indigenous Government. Within Behchokǫ̀, community patrols, managing barricades, hosting fire crews, maintaining generators and the community freezers were prioritized.[2] Interviewees reported challenges in jurisdictional authority between the territorial, local and the regional Indigenous Governments. However, they also reported that this improved as time progressed. Interviewees also observed that ICS trained GNWT employees were not always available and that broader ICS training within the GNWT would be beneficial as it would provide greater flexibility in deploying internal resources to positions of need.

From August 1 to 5 the fire growth began to moderate in part due to decreased wind strength and change in direction. On August 13, the wildfire growth remained slow, and the City of Yellowknife issued a statement indicating that the city was not at risk due to the ongoing wildfire. However, after the wildfire breached Boundary Creek on August 14 the fuel break-related efforts intensified around Yellowknife. After a two-day run towards Yellowknife, fire progression slowed on August 16 although heavy smoke and fire weather conditions persisted. The risk for Yellowknife remained high and risk to Highway 3 also remained high. As the only road in and out of Yellowknife to the south, any risk to Highway 3 had the potential to create a dangerous situation. On August 16, an evacuation order was issued for the City of Yellowknife with approximately 20,000 non-essential personnel evacuating from the City over the next two days.

From August 16 onward, ECC continued to monitor the fire situation and fire weather conditions. On August 18 the wildfire was mapped at 162,959 hectares and showed minimal growth to 164,329 by August 24. The wildfire continued to slowly grow northeast of Behchokǫ̀, but no VARs were reported threatened.

With minimal fire growth due to cooler temperatures and higher nighttime relative humidity, the evacuation order for Yellowknife and surrounding area was lifted on September 6 and residents began returning. ZF015-23 was considered contained on September 13, 2023.

A timeline of events is presented in the following section that more completely describes the wildfire in terms of its growth, impacts and efforts to contain it.

[2] Engagement participants recalled the importance of these freezers for continued access to traditional foods. They also acknowledge the support of the Łutsël K'é Dene First Nation in providing wildland fire crews and returning community members with traditional foods.

ZF015-23 Timeline Overview

In this timeline for ZF015-23, certain conditions and significant events are identified to help understand the role that environmental conditions, suppression activities, and certain events played in the progression of the wildfire.

June 26-27, 2023 - Lightning Strikes. Eight or more wildfire starts in the North Slave resulted in multiple active wildfires.

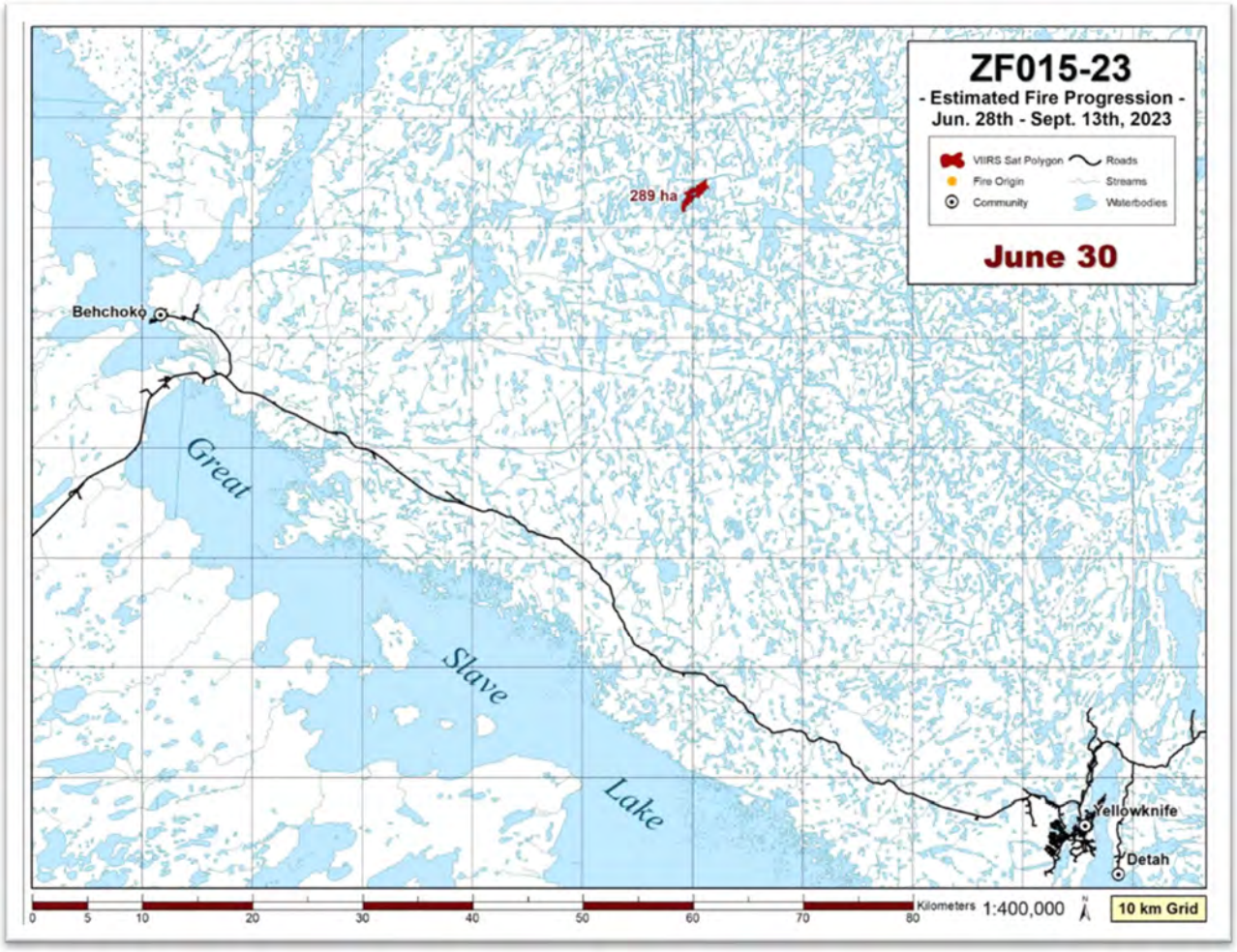
June 26, 2023: Fire Ban for North Slave: The GNWT imposes fire bans for the entire North Slave Region.

June 28, 2023 - Wildfire Ignition and Detection: The ZF015-23 wildfire was ignited by a lightning strike near Wekweètì. Detection occurred at 5:00 PM on June 28, with the wildfire size estimated at 56 hectares. This timing and relatively large size at detection is consistent with known lightning and high wildfire danger ratings for that day. A smoke report was filed at 5:00 PM. All aircraft and available resources were diverted to Wekweètì in the evening as ZF009-23 was a priority action fire. At the time, the Wekweètì fire was one kilometer away from the community.

June 30, 2023 – Rapid Initial Growth: Initial wildfire growth was high, growing from 56 hectares to 289 hectares over 48 hours (over 400% growth)[3]. This rapid initial growth reflected worsening wildfire danger ratings, including high winds.

[3] For this report full fire progression animation was used. A range is provided as differing accounts of the fire size were found, depending on the source.

Figure 3: ZF015-23 Wildfire Progress June 30, 2023. Produced by ECC.



July 1-3, 2023 – Wildfire Growth and Fire Assessment: Wildfire reported to have grown from 294 hectares to 848 hectares on July 3, 2023. The initial fire assessment, filed July 1 at 6:57 PM, classified the fire as "monitor" status. The assessment indicated ignition should be considered. During this same period, participants reported that a wildfire response plan was completed verbally.

July 4, 2023 – Air Tankers Deployed.

July 5-6, 2023 - Wildfire Response Changed: The wildfire situation analysis filed July 6 at 3:43 PM changed the wildfire from monitor to a limited action fire.

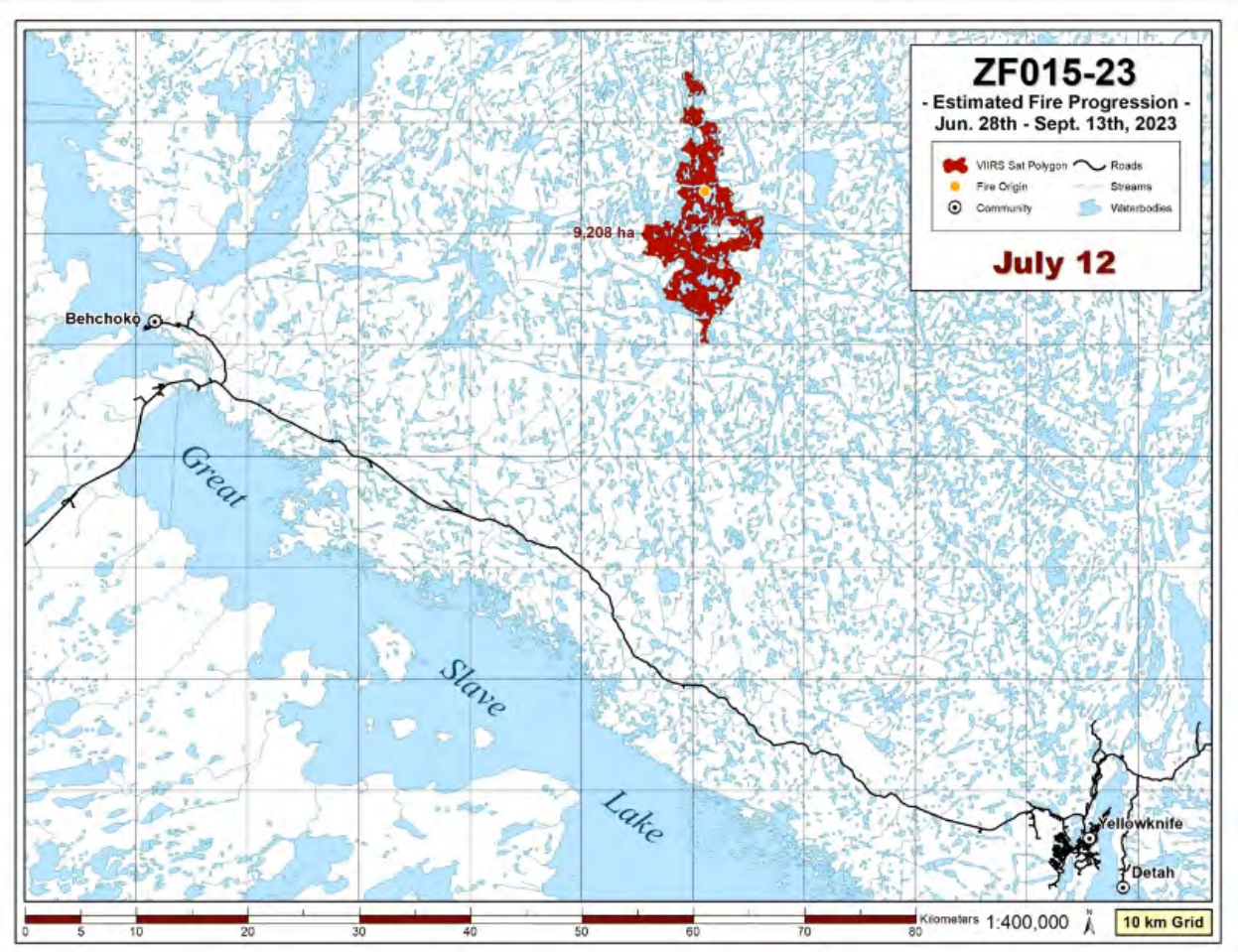
July 6, 2023 – Indirect Attack Operations and Wildfire Situation Analysis: An ignition plan was developed and implemented to prevent fire growth south toward Highway 3. The indirect attack tied into lakes and accounted for a 2014 burn area to the west, northeast and south. A wildfire situation analysis was completed on July 6, 2023, which indicated there was a Fire Behaviour Analyst (FBAN)/Ignition specialist, two crews, and rotary wing aircraft supported by tankers supporting ignition operations.

July 10, 2023 – Indirect Attack Assessment: An assessment of the actual fire perimeter and

projected perimeter for July 11 indicated that the plan and operation initially succeeded in containing fire growth in all directions, including to the south and southeast.

July 12, 2023 – Indirect Attack Ignition Line No Longer Holding: On July 12, the indirect attack operations began to fail as burning conditions worsened. The lakes to the south and the ignition area to the southeast were no longer holding the fire growth southward. The fire was now 9,208 hectares.

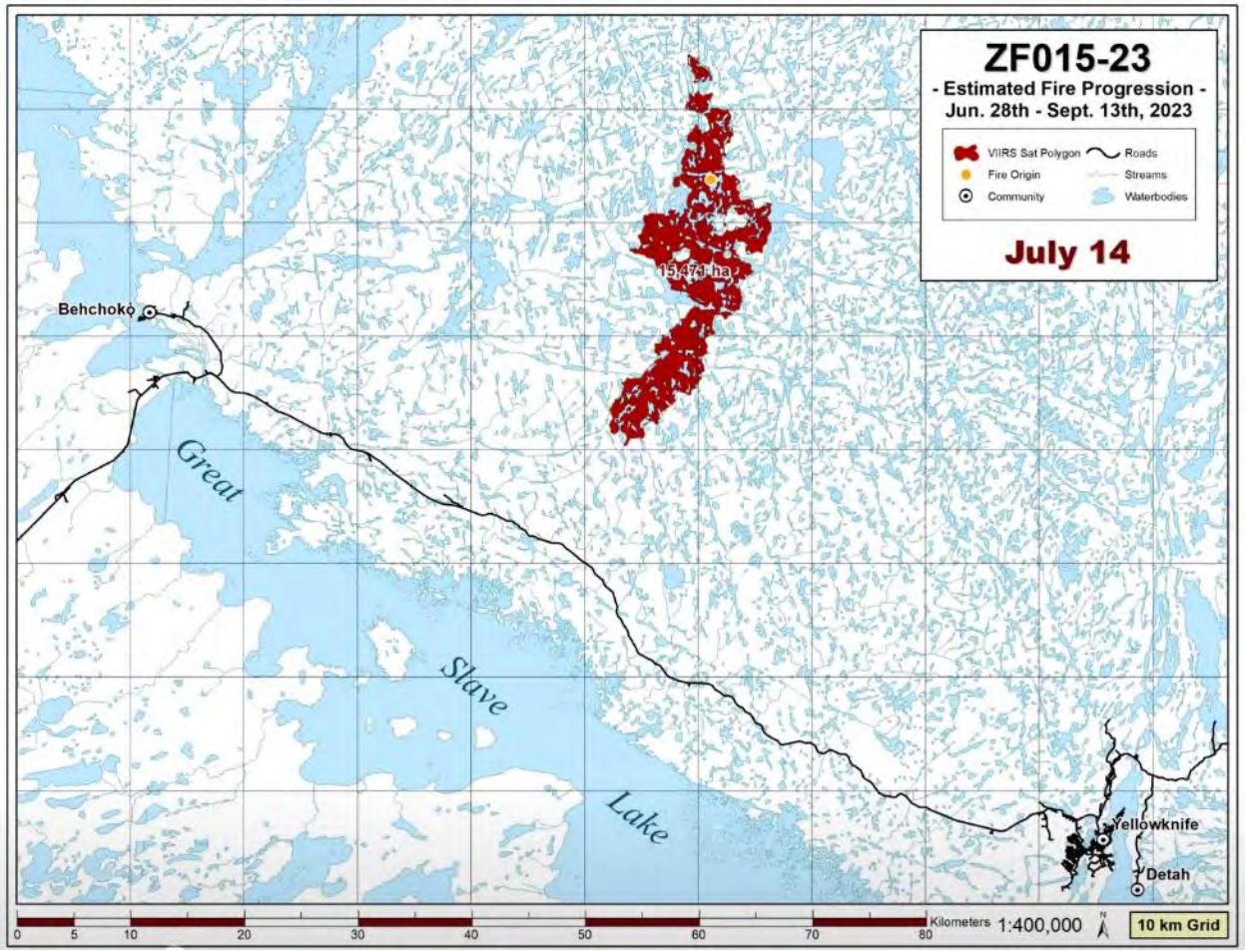
Figure 4: ZF015-23 Wildfire Progress. July 12, 2023. Produced by ECC.



July 13, 2023 – Air Tankers Deployed.

July 14, 2023 – Aggressive Fire Growth to the South: Growth of the wildfire south toward Highway 3 was aggressive as the lakes and indirect attack operations were no longer holding the fire. By July 14 the fire was 15,471 hectares. Despite efforts by wildland fire crews and air tankers, many days were marked by reduced visibility due to smoke. This hindered air tanker operations and restricted the movement of wildland fire crews.

Figure 5: ZF015-23 Wildfire Progress. July 14, 2023. Produced by ECC.



July 15, 2023 – Military Deployment: An initial deployment from the Canadian Armed Forces arrived in Yellowknife and was deployed to the fire. This includes 124 personnel, with 100 assigned to the fireline and 24 to support fire services.

July 17, 2023 – Intensive Growth: After failing to contain the wildfire over a two-week timespan, the weather conditions deteriorated and the wildfire danger indices, shown in Figure 3 and Figure 4, worsened into extreme conditions, indicating fast spreading, high-intensity crown wildfire behaviour that could not be managed using direct attack strategies. On July 17 the wildfire expanded to 23,359 hectares and was assessed as a threat to value assets, including homes and cabins along Highway 3. Figure 7 shows the increasingly extreme conditions in the NWT from July 10 to July 17.

Figure 7: Wildfire Danger for July 10, 2023

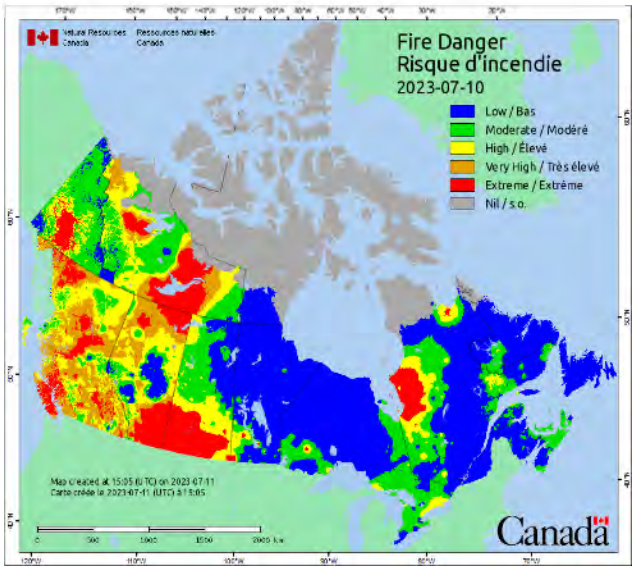
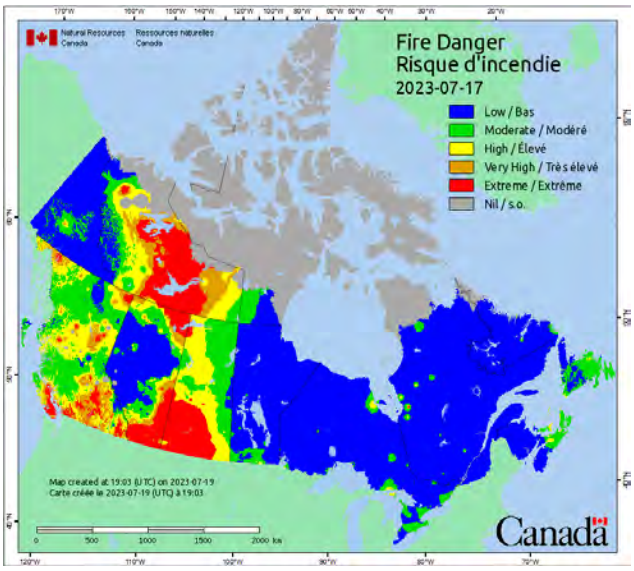


Figure 7: Wildfire Danger for July 17, 2023



July 18, 2023 – Updated Strategy Prepared: An IAP was prepared indicating that the Incident Management Team (IMT) established a strategy focusing on the protection of values at risk (VAR) using both direct and indirect attack methods. The IAP at this stage included the possibility of initiating new ignition operations on the west flank of the wildfire to reduce the risk of it directly impacting the community of Behchokǫ̀. The fire is mapped at 250,702 hectares.

July 20, 2023 – Air Tankers Deployed: Air tanker deployment continued, weather permitting with 21 missions conducted until July 20, 2023.

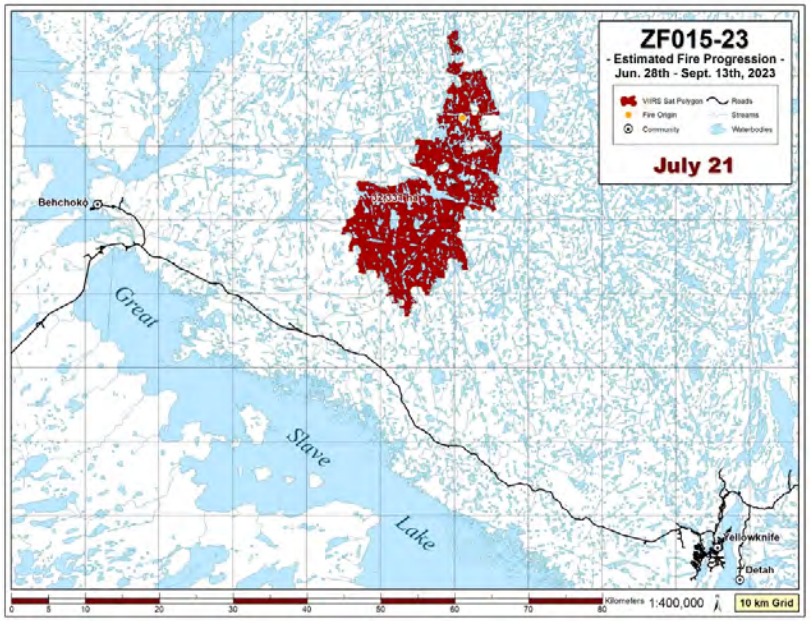
July 21, 2023 – Continued Growth and Evacuation Alert: The wildfire was mapped at 27,154 hectares at 8:00 AM but reached 32,331 hectares by the end of the day. A reconnaissance flight provided estimates indicating that the fire would likely reach Highway 3 by midnight. An alert was issued for those living between kilometer 276 and kilometer 290 on Highway 3, advising people to evacuate to either Yellowknife or Behchokǫ̀

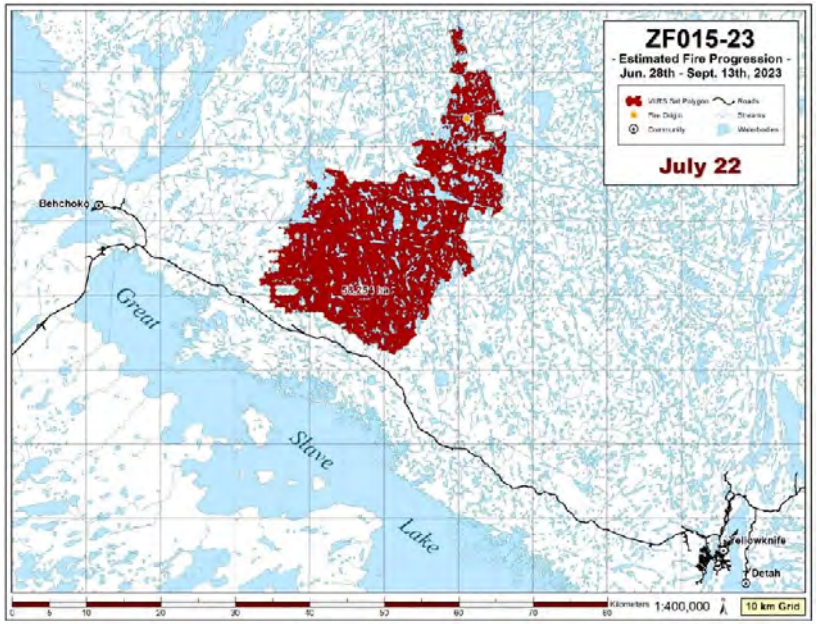
July 22, 2023 – Continued Growth Threatening Private Property: By July 22, the wildfire size was estimated at 58,254 hectares and was threatening value assets (homes and cabins) south of the wildfire perimeter between Highway 3 and Great Slave Lake. The wildfire threatened access on Highway 3, the sole transportation corridor servicing Yellowknife and critical public infrastructure. Over 24 hours, the fire expanded from 32,331 hectares to 58,254 hectares, marking one of the highest one-day growth rates during this period.

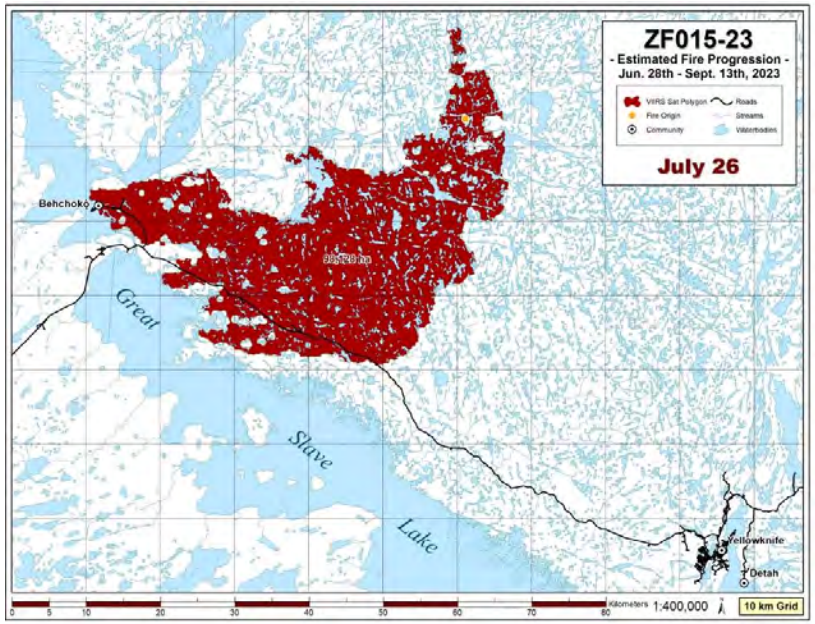
July 23-24 2023 – Indirect Attack Strategy Employed: On July 23, indirect attack strategies were implemented on the west side of the wildfire and continued into July 24. An ignition line near Stagg River aimed to limit the wildfire's growth westwards towards Behchokǫ̀ and its surrounding homes. Extreme conditions with strong winds predicted to change speed and/or direction resulted in the partial completion of indirect attack operations. The fire was mapped at 59,203 hectares.

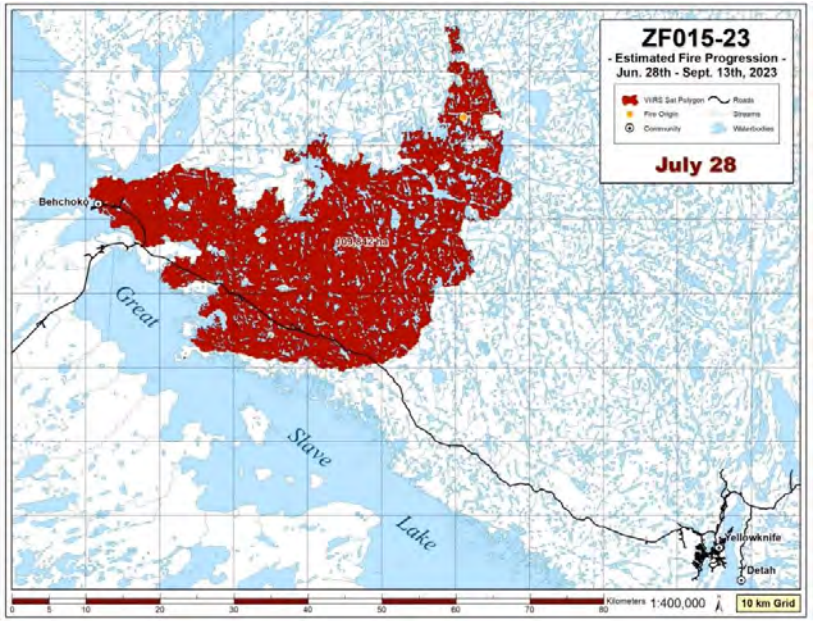
July 23, 2023 – Fire Classification Upgraded: The fire status was updated from Type 4 to Type 2 IMT.

Figure 8: ZF015-23 Wildfire Progress July 21-28, 2023. Produced by ECC.









July 24, 2023 – Worsening Wildfire Weather and Wildfire Behaviour – Behchokǫ̀ Evacuation Ordered: By July 24 the temperature readings were in the upper twenties and Relative Humidity (RH) values neared 30%, approaching "crossover conditions" (conditions with high temperatures and low RH values driving extreme wildfire behaviour). The extreme conditions led to an evacuation notice for Behchokǫ̀, followed by a full evacuation a few hours later. Sprinklers were reportedly set up near the cabins and homes on Highway 3 and in Behchokǫ̀ for their protection, although some accounts indicate this did not happen until after the fire reached Behchokǫ̀. By the end of the day on July 24, the wildfire had burned 15 structures along Highway 3.

July 25, 2023 – Wind Shift and Wildfire Growth to the West: Winds shifted from northeasterly to southeasterly on July 25 pushing the wildfire and the partial ignition line west towards Behchokǫ̀. The burn-out operation (Stagg River ignition) and the previously burned area did not contain the main wildfire body due to high winds and burning conditions. Kilometers 246 to 334 of Highway 3 were closed at 4:30 PM on July 25 due to the growing threat. Conflicting reports have the wildfire reaching Behchokǫ̀ on the evening of July 25 or the morning of July 26. The wildfire was mapped at 63,411 hectares at 6:00 PM.

July 26, 2023- High Winds Push Wildfire West: Gusting winds continued to flow, pushing the wildfire until flames hit the Behchokǫ̀ Access Road at Frank Channel. According to the FMD data, the wildfire was mapped at 68,729 hectares at 5:00 PM. The fire also burned over Highway 3.

July 26, 2023- Fire Ban: GNWT issues a fire ban for the North Slave region.

July 28, 2023- Continued Fire Growth: The fire extended southward along the shore of Great Slave Lake, encompassing an estimated 109,842 hectares. Figure 8 shows fire growth over the week from July 21 to July 28.

July 30-31, 2023 - No Fire Growth: Over July 30-31, no new fire growth was mapped.

August 1-3, 2023 – Threat to Behchokǫ̀ Passed: Around August 1, evacuees from Behchokǫ̀ were permitted to return home after the wildland fire crews were able to contain the western flank of the wildfire, preventing it from crossing the Frank Channel. The evacuation order was downgraded to an alert. The wildfire size was estimated at 110,332 hectares.

August 4, 2023 – Emergency Health Services Stood Down: A public notice was issued at 5:00 PM to communicate the closure of the Evacuation Reception Centre at the Yellowknife Multiplex. This closure included emergency health services provided at the Yellowknife Evacuation Centre and Yellowknife Primary Care clinics.

August 5, 2023 – Limited Fire Growth: From August 1 to August 5 ZF015-23 exhibited minimal fire growth with a subsequent shift in winds from the northwest. However, officials announced that the fire was expected to reach kilometers 283 and 288 of Highway 3 from the north side, prompting a precautionary closure of the road. The fire size was estimated at 115,068 hectares.

August 8, 2023 – Behchokǫ̀ Services Reinstated: Full health and other local services are reinstated in Behchokǫ̀ by August 8.

August 10, 2023 – Slowing Wildfire Growth: The wildfire was mapped at 134,468 hectares at 2:30

PM. August 5 to August 10 was a period of slow fire growth, with moderate winds continuing to push the fire to the southeast towards Highway 3.

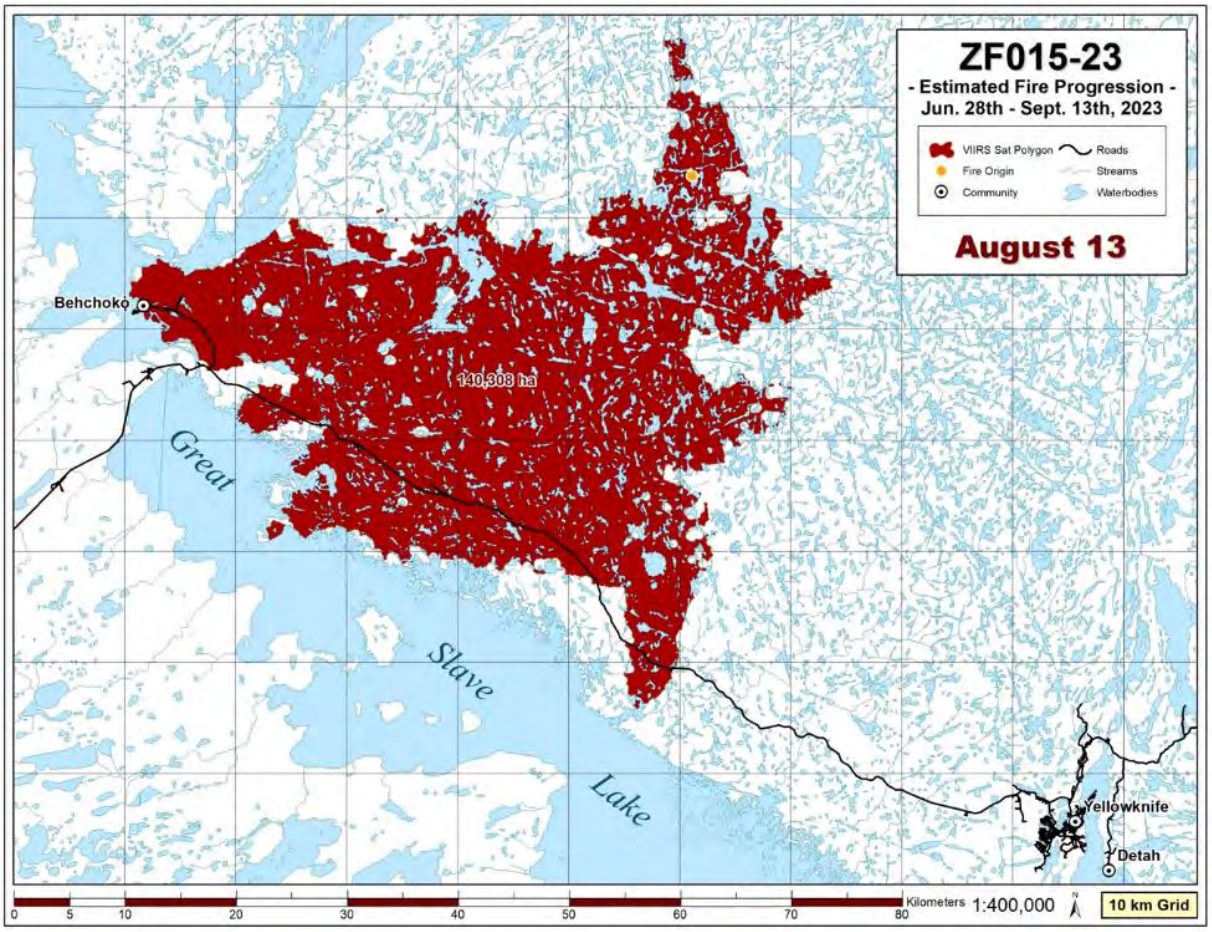
August 13, 2023 – Limited Wildfire Growth: Wildfire ZF015-23 was mapped at slightly over 140,000 hectares, with growth remaining minimal. The City of Yellowknife confirmed that it was not under threat.

August 14, 2023 – Wildfire Breaches Control Line: The wildfire reached within 3-3.5 km of Boundary Creek due to extreme winds. The City of Yellowknife declared a local state of emergency.

August 15, 2023 – Fire Protection Measures Established Outside Yellowknife: A network of fuel breaks, hoses, pipes, sprinklers, and water cannons are installed on the west side of Yellowknife. A 10-kilometer control line was built, and fire retardant was spread deeper into the brush. The City of Yellowknife issued an evacuation alert for areas of the city. The wildfire size was estimated at 158,614 hectares.

August 15, 2023- Territorial State of Emergency: MACA declared a Territorial State of Emergency for the entire NWT, enabling the GNWT to procure and deploy essential resources.

Figure 9: ZF015-23 Wildfire Progress. August 13, 2023.

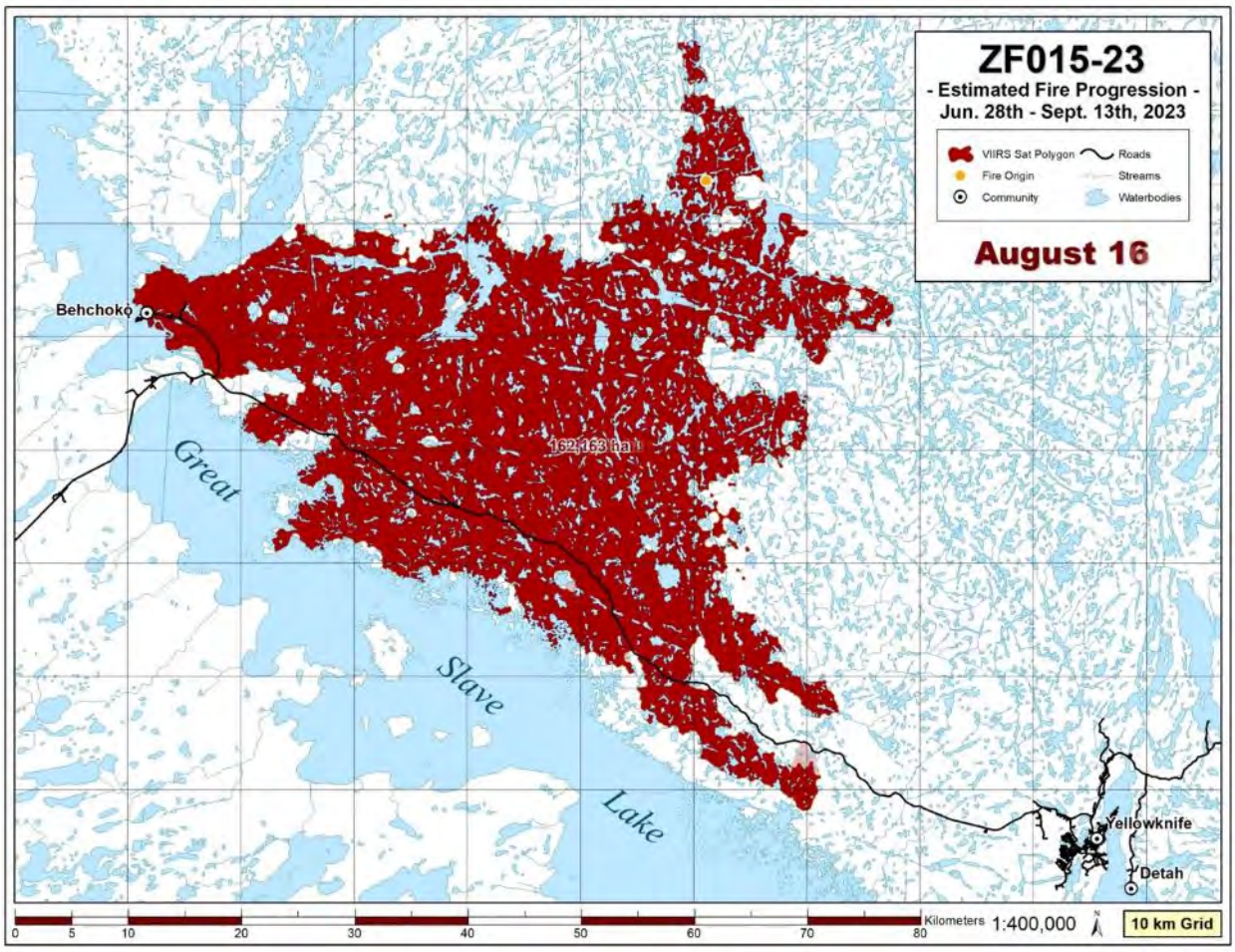


August 16, 2023 – Fire Growth: By August 16, the fire was 162,163 hectares and approximately 15-20 kilometers from Yellowknife resulting from a run to the southeast alongside Highway 3.

August 16, 2023- Yellowknife, N'dilo, Dettah, and the Ingraham Trail Evacuated: From August 10 to August 16, ongoing moderate fire growth towards the southeast, compounded by heavy smoke and poor visibility, prompted the precautionary evacuation Yellowknife, N'dilo, Dettah and the Ingraham Trail. Under the Territorial State of Emergency order, the GNWT took over emergency measures in Yellowknife. The Canadian Armed Forces supported evacuation efforts. The wildfire size was estimated at 162,163 hectares.

August 18, 2023- Evacuation Updates: By August 18, approximately 20,000 people have evacuated from Yellowknife.

Figure 10: ZF015-23 Wildfire Progress. August 16, 2023.



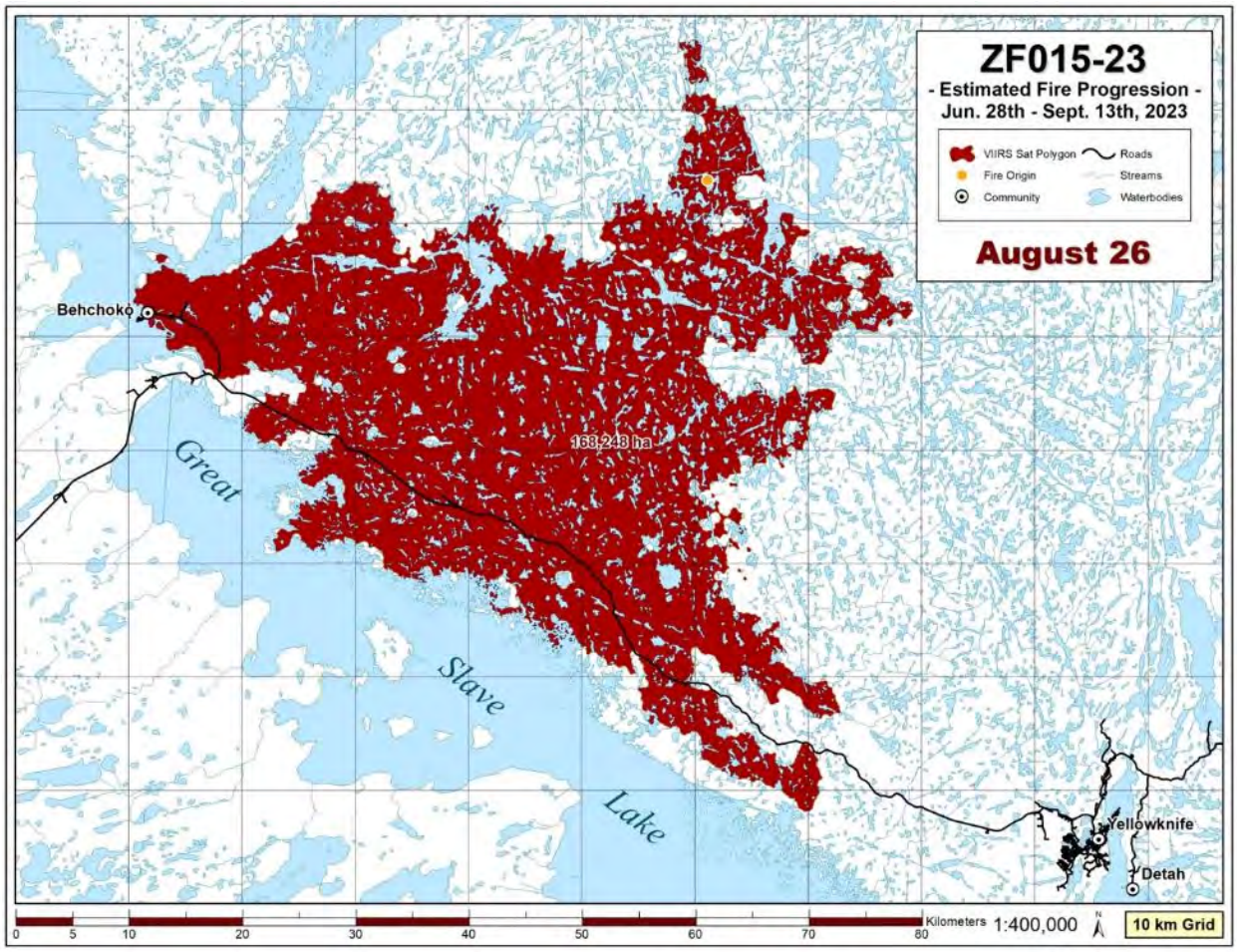
August 18, 2023 – Minimal Fire Growth: On August 18 the wildfire was mapped at 162,959 hectares.

August 20, 2023 – Fire Classification Upgraded: Fire classification changed from Type 2 to Type 1 Full IMT & EMO activated.

August 24, 2023 – Minimal Fire Growth: On August 24, the fire continued to show minimal growth. It was mapped at 164,329 hectares.

August 26, 2023 - Minor Growth to the North: While wildfire ZF015-23 continued to grow northeast of Behchokǫ̀, no VARs were reported threatened. Minimal wildfire growth was mapped

in the southeast portion of the wildfire. The wildfire had burned 168,248 hectares.



September 5, 2023 – Last IAP Issued for Wildfire.

September 6, 2023 – Residents Start Returning to Yellowknife: Cooler temperatures and higher nighttime relative humidity, largely halted fire progression and improved smoke conditions. The threat to Yellowknife passed, the evacuation order was lifted, and residents began returning home. The wildfire size was estimated at 169,841 hectares.

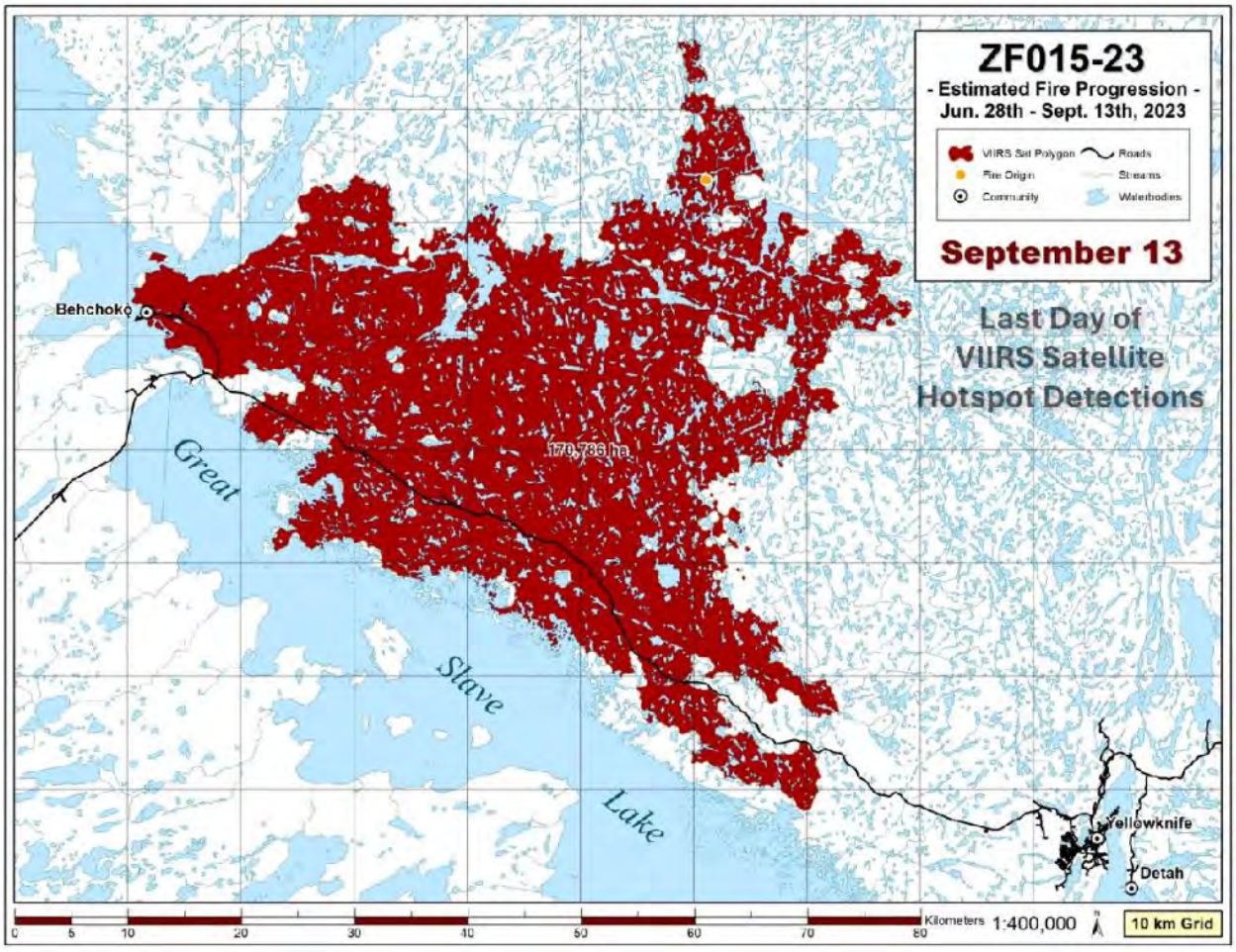
September 13, 2023 – Fire Containment: From August 16 onward, fire growth was minimal. On September 13, the wildfire was assessed at 170,786 hectares On September 13, the wildfire was considered contained and the incident was handed back to the region.

September 28, 2023 – Fire Status Changed to Limited Action: The wildfire was limited action and being monitored daily.

October 1, 2023 – Fire Considered Held: The wildfire was downgraded to being held.

October 2, 2023- Territorial State of Emergency Lifted: MACA lifted the Territorial State of Emergency. Fire bans were also lifted. The wildfire size was estimated at 170,786 hectares. Figure 11 shows full extent of fire.

Figure 11: ZF015-23 Wildfire Full Extent. September 13, 2023.



Associated Notable Events

The following notable events associated with the timeline provide insights into the effectiveness of the wildfire response.

1. Detection:

At the time of detection of ZF015-23, there were other recently detected wildfires in the process of being actioned. The last several days of June were marked by dry conditions, and lightning activity associated with an unstable upper ridge. 26 wildfires were detected from June 27 to June 30 in the NWT with 20 of those located in the North Slave region. Some of those new wildfires immediately threatened communities and VAR and as such were prioritized for initial attack resources, including type 1 crews and airtankers. Wildfire ZF009-23 near the community of Wekweètì was one such priority wildfire. There is limited documentation on the initial assessment and initial attack decision for ZF015-23 as the wildfire was initially a monitor status fire and participants indicated that the wildfire response plan was done verbally. From the records and interviews, it appears clear that resources were limited as wildfire managers dealt with other priorities. ZF015-23 was not considered an immediate threat.

2. Early Assessments, Strategy and Priorities

Early assessments of the wildfire were made by ECC in the context of other fires that started at about the same time and that threatened communities in the North Slave region. MNP notes there are no IAPs available for fire ZF015-23 to review prior to July 18. A July 6 ignition plan for ZF015-23 included an assessment that the wildfire was remote and not an immediate threat to the communities of Yellowknife, Behchokǫ̀ and to homes/cabins along Highway 3. Given the presence of old burns to the west, east, and south, as well as lakes to the south and southwest, the indirect attack to the southeast was considered an effective containment tactic. The remote nature of the fire location in conjunction with containment plans meant the threat to Behchokǫ̀ and Yellowknife was considered low to moderate. Conversely, the threat to Wekweètì from fire ZF0009 was considered high. Priority was given to Wekweètì.

3. Protection of Values Risk in Behchokǫ̀ and Along Highway 3:

Homes and cabins along Highway 3 were identified as VARs as the wildfire grew and gained momentum. By July 24, 2023, the protection of these values was the priority. ECC responded by setting up sprinkler systems on cabins and homes and focusing suppression efforts on the southern flank. The setting up and monitoring of sprinkler systems was an intensive process that required the additional time and attention of a dedicated crew. Behchokǫ̀ was evacuated on July 24. On July 25/26 ZF015-23 approached the outskirts of the community and four homes were lost.

4. Stagg River Ignition Strategy:

The Stagg Creek indirect attack operation was implemented to address the growth projections for wildfire ZF015-23 which indicated the wildfire would likely push west and northwest towards the community of Behchokǫ̀. Wildfire growth projections based on wildfire weather indices, winds, and

topography predicted the wildfire posed a significant threat to the community. The wildfire weather spot forecast on July 23 for ZF015-23 included a three-day outlook and indicated strong upper ridge conditions for July 23 that included temperatures ~20°C, relative humidities in the mid-thirties and a light wind regime with a general southwest flow. The forecast for the next day, July 24, was for similar conditions, though with winds lighter and variable during the day and shifting to light winds from the east in the evening. The forecast for subsequent days, July 25 to July 27, 2023, was for increasingly hot, dry weather, developing extreme wildfire weather and winds shifting from the east. On July 23, ECC's decision to employ an indirect attack strategy was based on favorable southerly/southwesterly winds, aiming to act before anticipated worsening wildfire weather became and a shift towards easterly winds.

Interviews with decision-makers indicated that wildfire growth models strongly suggested the wildfire would impact Behchokǫ̀. Consequently, intervention was deemed necessary, with an indirect attack identified as the only viable option. However, smoke conditions posed challenges for air support, resulting in the incomplete implementation of the indirect attack operation.

5. Evacuation of Yellowknife

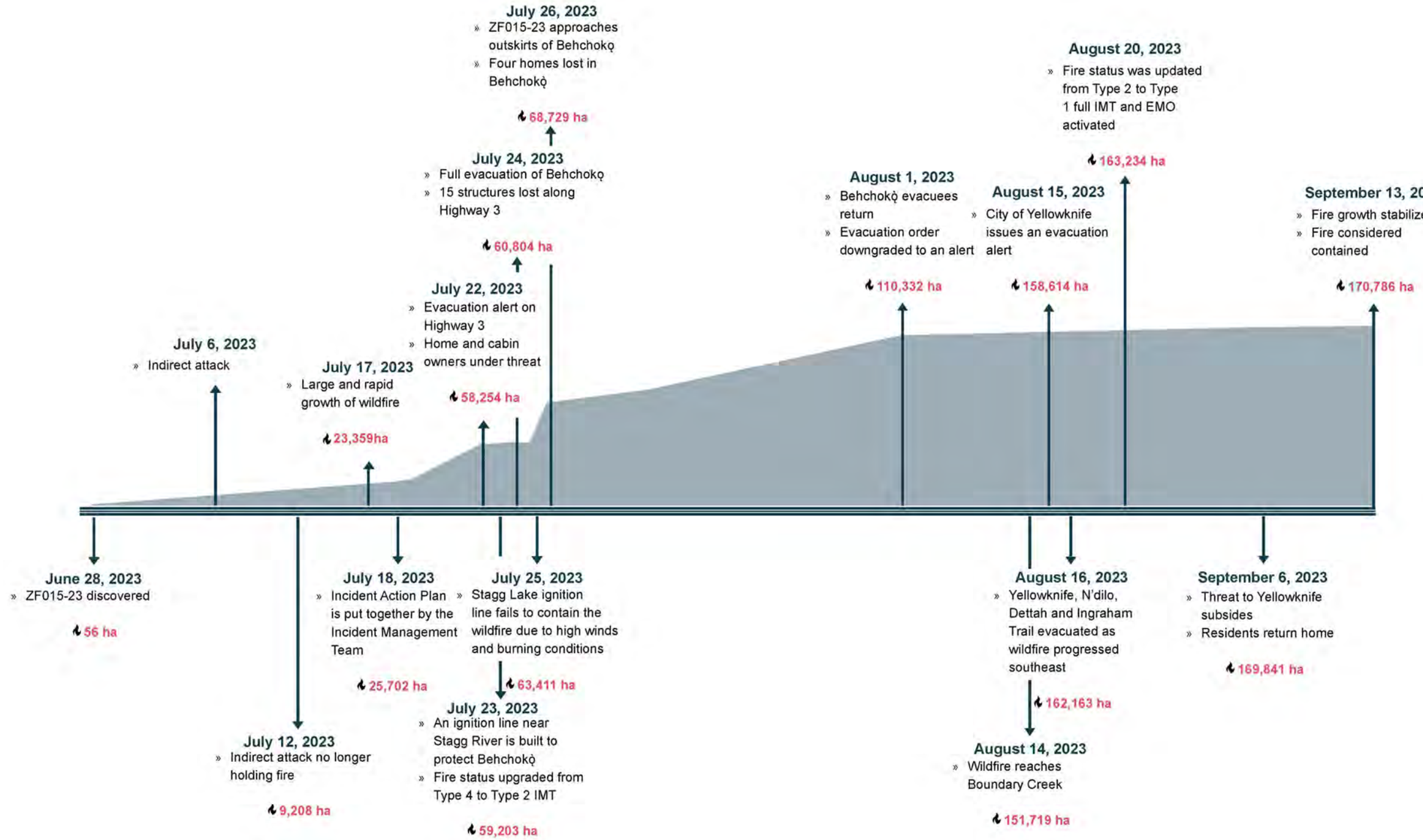
The City of Yellowknife issued a statement on August 13 that the city was not currently under threat. However, within 24 hours, on August 14, the city declared and local state of emergency and on August 15 issued an evacuation alert for Yellowknife. By August 18 approximately 20,000 people were evacuated from Yellowknife, with the evacuation efforts being supported by the Canadian Armed Forces. The rapid shift from announcing the city is not under threat to ordering a full evacuation within just five days indicates a significant underestimation regarding the situation and potential wildfire behaviour.

6. Arrival of Military Crews

The first deployment of military crews occurred on August 14 and 15 with the arrival of 124 personnel. One hundred were assigned to fireline duties functioning as type 3 crews while 24 were assigned to support functions for both fireline activities as well as evacuation support. At the peak of the military deployment, an estimated 350 personnel were deployed to the North Slave and South Slave fires along with two CH-146 Griffon helicopters, one CC-138 Twin Otter and two CC-130J Hercules aircraft.

ZF015-23 Timeline

The figure below details the timeline of key events for ZF015-23:



Observations and Analysis

Several observations arose from the review of the ZF015-23 wildfire in relation to the wildfire response, decisions, and actions associated. These observations are intended to inform the overall wildfire management review and for improvement recommendations of the program. Observations are as follows:

Changes in Incident Management Teams Makeup and Size and ICS Breakdown:

The IMT changed several times throughout the wildfire, both in terms of the individuals taking on key roles and the number of individuals filling roles. This was a consequence of the constantly changing set of demands on the ECC as the season continued and as multiple wildfires threatened communities and other values throughout the NWT. Other IMTs in other regions described similar experiences as the territorial situation was highly demanding and resources were limited. Frequent changes to the IMT require time for the new leadership to develop situational understanding and context, develop new strategies or confirm the existing strategies, and establish communication and relationships.

Engagement participants described situations where ICS protocols were circumvented, decisions related to response strategy were made simultaneously by different individuals, and the IC was not involved in key communications. Additionally, there were reports of individuals refusing to cooperate at the IC setup location, which created challenges in decision-making, communications, and team morale. It was also noted that ICS protocols were not consistently adhered to, as individuals lacking proper authority or experience were making decisions on fire suppression operations, undermining the effectiveness of the ICS structure and team coordination.

Frequent changes to the makeup of IMTs occasionally resulted in inexperienced or unqualified individuals tasked with key IMT positions. In some instances, certain individuals filled multiple roles on the IMT, some of which did not possess the requisite qualifications as per the *GNWT Wildfire Management Certification and Qualification Manual*. This reduced the effectiveness of the IMT as some key roles were not adequately resourced.

Importance of Assessing Values at Risk:

Understanding and assessing VARs is a core aspect of *The Northwest Territories Wildfire Management Strategy*. While some engagement participants observed a noticeable deficiency in the inventory of VARs specific to Indigenous cultural and biophysical resources, a review of the NWT situation in comparison to other jurisdictions indicates that the NWT is a leader in this regard.

Identifying and tracking VARs allowed wildfire managers responsible for ZF015-23 to make decisions protecting homes and properties along Highway 3, including setting up sprinkler systems and prioritizing action on the southern flank of the wildfire. This information was important to ensuring adequate resource allocation and risk mitigation strategies.

Delay in Incident Planning:

A review of available data suggests the IMT went a week without an IAP during the initial stages of the wildfire. Records indicate that an ignition plan and IAP were developed for ZF015-23 within one week of the fire being actioned and participants shared that a verbal wildfire response plan was completed in the initial days of the fire. The preparation of IAPs for type 1 and type 2 (and in some circumstances type 3) wildfires is part of the organization's standard operating procedure, as outlined in the RPWE (Environment & Natural Resources Forest Management Division). IAPs, in addition to the required smoke reports and fire assessments, provide documentation of conditions, the situation, and the rationale for strategies. Delays in formulating or updating IAPs for ZF015-23 may have resulted in uncoordinated efforts and inefficient resource utilization.

Inconsistency in Incident Action Plans:

The IAPs for ZF015-23 were inconsistent in both the content and format of the presented information. This inconsistency led to confusion among wildfire employees and resources. Interviews and workshops have highlighted personnel often spent additional time seeking clarification of information within the IAPs, disrupting the workflow and timing during critical operational phases.

Content, format, file naming conventions, and the location in which reports are to be saved (e.g., EMBER or SPARCS) are crucial for clarity, should be standardized, and communicated consistently. Frequent changes and inconsistencies in mapping scales and legends in the daily IAPs impeded the ability to monitor change over time.

The RPWE guidelines are intended to provide direction to fire managers for the planning required for all fires and indicate the specific documentation required to support response decisions (e.g., smoke report, fire assessment, IAP, etc.) A review of the RPWE revealed that in some areas there is a lack of clarity on planning documentation requirements and decision-making could be left open to interpretation. This lack of clarity may have contributed to an absence of some key reports during various stages of the wildfire (e.g., a lack of written wildfire response plans).

Limited Medium and Long-Term Wildfire Projections and Reporting:

There is a critical need for more comprehensive medium to long-range wildfire behaviour forecasts. These forecasts are indispensable for establishing effective three to five-day and longer-term objectives, strategies, and tactics as well as for facilitating communication with other agencies in their planning efforts.

Indirect Attack at Stagg River:

The indirect attack operation at Stagg River on July 25, was carried out in response to the rapidly growing wildfire, expected worsening wildfire weather conditions, and threats to VARs, including the community of Behchokǫ̀ and Highway 3. Several issues were identified with the implementation of this tactic, including:

- *Planning*— Poor documentation of the planning process makes it difficult to assess whether all factors were considered in the decision-making process for carrying out ignition

operations. Conditions that need to be considered in planning include the current and forecasted fire weather, fuels and topography, natural tie points such as lakes, rock outcrops and ridges, as well as resources available for indirect attack containment. While the IAPs and ignition plans from this period were available for review, they failed to provide the information needed to demonstrate that all factors were considered in the planning and go/no-go decision. Specifically, the Stagg River ignition plan did not adhere to the *NWT Ignition Operations Manual*. It deviated in the forms utilized and the levels of authority required for regional or territorial approval. The ignition plan was not signed off by the regional fire manager and therefore did not have the required oversight and control that the SOP is designed to provide. In addition, the ignition operation was not implemented by certified ignition specialists. This is not meant to suggest that the individuals who implemented the ignition plan were not competent, but rather that their competency was not validated and subsequently certified.

- *Forecast weather conditions*—Forecast weather conditions were favourable the day of the planned ignition; however, conditions forecasted for two days out were predicted to worsen, with a shift in winds indicated. This added an element of risk for the indirect attack operation. Winds on the day of the ignition were from the south and southwest and the spot forecast for two days out indicated a shift in winds to an easterly flow as well as higher wind speed. While this does not preclude indirect attack operations, especially when the main wildfire is expected to threaten a community, added risk should be carefully assessed and mitigated. There is no indication this was assessed with appropriate mitigations proposed.
- *Failure to contain the fire and impact on* Behchokǫ̀. —The indirect attack operation plan at Stagg River was not fully implemented due to shifting winds and poor visibility. The shift in winds pushed both the ignition line and the main wildfire to the west. Poor visibility due to smoke grounded the air tanker support needed to control the ignition and to retard the growth of the main wildfire. The size and intensity of the wildfire caused ZF015-23 to run westward towards Behchokǫ̀ while the indirect attack ignition moved westward towards Behchokǫ̀ ahead of the main wildfire.

To assess whether the indirect attack ignition contributed to the threat and loss experienced in Behchokǫ̀, ECC reviewed extant data from the main wildfire and the indirect ignition operation to simulate the progression toward the community. The results of that analysis suggested that the indirect attack operation was overrun by the main wildfire, and that had it not been overrun by the main wildfire, the ignition would have burned to the north of the community. Although an independent review of this analysis was conducted, no new or different data was available to perform a separate analysis to validate the findings. Using the best data available and the universally accepted wildfire growth model it is clear that the main wildfire was on course to impact Behchokǫ̀. It remains uncertain whether the indirect attack ignition would have impacted Behchokǫ̀. Should it have done so, it would have reached the community approximately four hours before the main fire.

Delayed or Inaccurate Wind Forecasts:

There were delays and inaccuracies in wind direction forecasts. For example, the July 25 IAP used out-of-date wind conditions from July 24. Similarly, information about the risks associated with changing winds was relayed to the IMT on July 23-24 with the expectation the information be used in indirect attack planning. A review of the ignition plan provides no indication the July 24 data was used. Accurate and timely wind forecasts are crucial for predicting wildfire behaviour and planning appropriate responses.

Discrepancy in Operations Location (Frank Channel):

According to the IAPs, Frank Channel was the location of operations for North Slave. However, local sources reported no personnel presence in the lead-up to ZF015-23's run on Behchokǫ̀. Other interviewees reported the evacuation of Frank Channel on July 25 and noted its role in supporting other regional fires including ZF009-23. Confusion in relation to the role and staffing of Frank Channel is indicative of a communication gap.

Communications with Communities

While communication between ECC-and MACA was reported by some engagement participants as effective, there were significant communication challenges relating to the quality of communication with Behchokǫ̀, Yellowknife, and the broader North Slave community.

The roles and responsibilities for informing community members about the situation with ZF015-23 was unclear. Residents of Behchokǫ̀ report they did not receive adequate information about the risks and potential threat of the fire to their east prior to July 24-25. Many of the Behchokǫ̀ leadership and community members were in Alberta during the critical lead-up to the fire. Residents of the City of Yellowknife were told everything was "ok" less than 24 hours before the evacuation notice on August 15. Interviewees reported that some GNWT employees were unprepared to work remotely having accidentally left their laptops in the office prior to evacuating from Yellowknife. While the dynamic situation appears to have contributed to this lack of situational awareness, inconsistent and sometimes conflicting messaging by ECC, MACA, the City of Yellowknife, and political leaders resulted in a significant communication gap.

Internal Communications:

Internal communications within ECC regarding wildfire management were inadequate and had impacts on performance. This issue was compounded by the separation of the regional fire organization from FMD. One of the primary responsibilities of FMD is resource management, specifically sourcing fire suppression resources from outside the NWT for the regions and coordinating their deployment. Feedback from engagement participants indicates that external resources assigned to specific roles within the regions were often reassigned to different roles or regions without FMD's awareness. This lack of transparency complicated subsequent decisions on resource allocation, reducing effectiveness. Furthermore, instances were identified where resources, including aircraft and personnel, arrived at regions for assignments without the knowledge of regional authorities.

Use of Military Crews:

Feedback regarding the use of the military for wildfire duty highlighted concerns that military crews lack training in wildfire suppression tactics thereby limiting their operational effectiveness. This contrasts with the amount of logistical support and planning needed to deploy military crews. Safe and feasible assignments typically involve type 3 activities such as mop-up, hotspot patrol and extinguishment, equipment relocation, and brushing along firelines. Another noted limitation is that military helicopters, equipped with low skids, may be less versatile in navigating the challenging terrain of the northern boreal forest.

Engagement participants acknowledged that military support was instrumental during the peak of the fire season and contributing significantly to successes on the fireline and facilitating evacuation efforts. Moving forward there is potential to enhance resources during extreme wildfire events by providing military crews with basic training in wildfire management.

Recommendations

Six recommendations have been identified in response to a review of the information available regarding the response to wildfire ZF015-23. These include recommendations to address:

- Medium and longer-term weather and fire behaviour projections.
- Strengthening ICS capacity.
- Communications and situational awareness.
- Adopting a more thorough and disciplined approach to planning indirect attack operations.
- Ensuring qualified and experienced individuals in key roles on IMTs.

Recommendations made here are specific to ZF015-23. General recommendations related to ECC's overall response to the wildfire response are included in the Northwest Territories 2023 Wildfire Response Review.

Recommendations

1. Renew the organization's commitment to rigorous planning and authorization for indirect attack, including detailed analysis of wildfire weather and wildfire behaviour data and indices. Including requiring all wildfire management employees to take a short virtual course on the criteria and requirements for indirect attack and reiterating that documentation must include an indication that proper levels of authority have reviewed and approved the plans before implementation.
2. Dedicate additional resources to medium and long-range wildfire weather and wildfire behaviour forecasting and analysis is needed. The medium and long-range forecasts will help the organization better plan suppression strategy and better prepare for resourcing requirements. This will require an additional budget allocation for resources and data acquisition.
3. Renew the commitment to ICS principles to build up IMTs on escalating wildfire events, to ensure that effective communication and decision authority are properly used.
4. Put greater attention on filling key IMT positions and roles with individuals with proper qualifications and experience.
5. Refine and finalize the *Required Planning for Wildfire Events* guidelines and ensure that the integration with software is clear and consistent (i.e., EMBER or SPARCS).
6. Enhance critical communications and coordination of resources by combining the regional and territorial fire organizations under single leadership and management.

References

Environment & Natural Resources Forest Management Division. (n.d.). *Required Planning for Wildfire Events*.

Government of Northwest Territories. (2009). *NWT Ignition Operations*.

True North Weather Consulting. (2024). *2023 Wildfire Weather Report*.

Appendix D: GNWT Response to Recommendations and Opportunities for Improvement

Table 1: GNWT Response to Recommendations and Opportunities for Improvement

Finding Theme	Recommendations	Opportunities for Improvement	Department Responsible	GNWT Response
1 - Fire Behaviour Modelling	1.1 Invest in wildfire behaviour modelling software that is current, nationally accepted, and well- supported.		ECC	The Department of Environment and Climate Change (ECC) uses two nationally accepted fire modelling programs: FireStarr and WISE (Wildfire Intelligence and Simulation Engine). FireStarr provides one-day and three-day growth projections based on the Canadian Forest Fire Danger Rating System, while WISE offers a standardized model for projecting best and worst-case unrestricted fire growth scenarios over 24 hours based on current indexes and forecasted weather using a predetermined template. These tools are the same tools used by fire managers across Canada, and equip wildfire management teams in the NWT with the best information available to make informed decisions. ECC will continue to monitor advances in wildfire modelling technology, and as new or updated nationally accepted technology becomes available, it will make the necessary adjustments to the tools used in the NWT.
	1.2 Invest in systems and research to update fuel, weather, and topography data to the minimum acceptable scale.		ECC	ECC is actively working to increase and enhance the data available for its modelling programs and other decision-making tools. The GNWT weather network has been expanded with additional weather stations set up across the NWT, ensuring continuous data collection throughout the year. ECC also collaborates with universities, federal agencies, and other forestry and wildfire management experts to enhance available data on fuels in the NWT.
	1.3 Invest in training ECC's five wildfire behaviour modelling employees in the selected modelling software and continue with plans to expand the number of trained employees able to support wildfire		ECC	ECC is committed to continue providing ongoing training and development opportunities for its wildfire behaviour modelling team. This includes training sessions for existing employees involved in wildfire modelling, as well as opportunities for additional employees to expand the number of staff with this specialized training that meet national certification standards.

Finding Theme	Recommendations	Opportunities for Improvement	Department Responsible	GNWT Response
	behaviour			
		1A Explore and determine the appropriate balance between increasing internal expertise and leveraging external contract resources for weather forecasting, as well as for weather forecasting, as well as for long-term climate prediction.	ECC	ECC currently utilizes a number of sources of information and advice to support weather monitoring and forecasting. This includes a network of 50 ECC weather stations across the NWT, access to external weather data from other agencies, and contracted services from an experienced wildfire meteorologist who provides weather forecasting and assessment leading up to and throughout the wildfire season. The department will consider this recommendation and will continue to review and assess its weather forecasting and climate prediction needs, and options to meet these needs.
2 - Human Resources - Capacity	2.1 Expand culturally appropriate mental health services, tailor them for a firefighter audience, and promote them to wildfire management team members. Provide management and team leader-level training on trauma-informed practice and critical incident stress.		ECC, GNWT (FIN)	The GNWT recognizes the importance of mental health support for all emergency response staff across the GNWT. It is important that all personnel, regardless of their department, have access to mental health resources that recognize the unique needs and challenges faced by emergency responders. The GNWT staff can access the Employee and Family Assistance Program (EFAP) telephone support line at any time, and additional targeted supports are provided as appropriate to meet the need and support the well-being of individuals involved in wildfire management and response.
	2.2 Implement formal team appreciation initiatives that foster a culture of commitment and accountability. This will complement the informal appreciation and gratitude from senior ECC employees and team leaders.		ECC	ECC recognizes the importance of fostering and maintaining a culture of commitment and accountability at all levels of the organization and has used a number of formal and informal approaches to recognize members of our team. The department will look at opportunities to build on current formal appreciation initiatives, including the annual Firefighter of the Year Award, which will complement the informal expressions of gratitude from senior employees and team leaders.
	2.3 Increase the organization's emphasis on recruitment and retention of firefighters and		ECC	Recruitment and retention of firefighters remains a high priority for the GNWT, with annual recruitment and training conducted for full-time fire

Finding Theme	Recommendations	Opportunities for Improvement	Department Responsible	GNWT Response
	add a minimum of two firefighter crews, with associated overheard support, to better cope with the frequency of extreme weather events.			crews and Extra Fire Fighters (EFFs). Given pre-season forecasts for the 2023 and 2024 wildfire seasons that predicted continuing drought conditions, ECC brought on additional fire crews and started them earlier than normal. The department is committed to continue to review staffing levels to support wildfire management operations.
		2A - Conduct scenario planning for resourcing, with extreme seasons like that of 2023 in mind, to test if the current structure of resource allocation and resource sharing agreements is sufficient, and better prepare for a range of possible outcomes.	ECC	ECC regularly reviews resourcing needs both within and between wildfire seasons to ensure we have the personnel, aircraft and equipment needed to effectively respond to wildfires in the NWT. This includes an assessment of resources available within the GNWT, through mutual aid agreements coordinated by the Canadian Interagency Forest Fire Centre, and from the private sector. ECC is committed to continue exploring resource needs going forward, including options to respond to a changing wildfire environment and surge capacity needs in extreme wildfire years.
3- Human Resource – Training and Skills Management	3.1 Compare and analyze the costs/benefits of starting crews earlier with one cycle of centralized training, against staggering crew start dates and doing multiple cycles of training. Consider expanding fire crew member responsibilities in the event of late wildfire seasons to avoid costly idle time. Weight the pros and cons, including budget implications, to inform decisions.		ECC	Given pre-season forecasts for the 2024 wildfire season, ECC initiated early crew training to ensure readiness before the wildfire season began. Going forward, the department plans to host two centralized training sessions each year, one for the northern and another for the southern NWT, to support consistent and efficient training.
	3.2 Further support and formalize the MACA cross-training initiative and secondment opportunities with other parts of ECC and GNWT departments to expand local capacity for IMTs, wildfire management roles, and support functions.		ECC, GNWT (FIN)	The Department of Municipal and Community Affairs (MACA), in collaboration with the Department of Finance (FIN), has established a redeployment process within the GNWT to enhance departments' capacity during emergency events. This process, initiated in February 2024, resulted in 105 employees available to support Incident Management Teams (IMTs) and related support functions. MACA aims to train at least 10% of GNWT staff in the Incident Command System (ICS) through a comprehensive four-year training plan starting in fall 2024. This initiative ensures that all surge staff receive adequate training, enhancing the GNWT's preparedness and

Finding Theme	Recommendations	Opportunities for Improvement	Department Responsible	GNWT Response
				response capabilities. FIN has outlined the policies regarding the secondment of GNWT employees. While secondments to external agencies, such as Indigenous governments or the Federal Government, are permitted, they are not suitable within the GNWT itself. Instead, FIN supports using transfer assignments to facilitate cross-training initiatives across departments, expanding capacity in various areas. Additionally, in partnership with the Forest Management Division (ECC), the NWT Centre for Geomatics, coordinated a fire mapping training session in April 2024. This session, which included approximately 30 participants from multiple departments, including ECE, ITI, FIN, and ECC, aimed to enhance the fire mapping capabilities across communities. The training focused on ensuring that Fire Mapping Services could be maintained during mass evacuations and interruptions to telecommunication services, similar to the challenges faced in 2023. This collaborative effort underscores the GNWT's commitment to building a robust and resilient emergency response framework.
	3.3 - Develop a robust qualification, certification, and skills tracking system for ECC and other GNWT employees, as part of the GNWT Wildfire Management Certification and Qualification Manual. Ensure the system is easily accessible, consistently updated, and diligently maintained.		ECC	ECC currently maintains records of training and qualification of staff involved in the wildfire management program and is working to enhance the system for tracking qualifications, certifications, and skills by the end of the 2024-25 fiscal year.
	3.4 - Develop an alternate fitness standard that can be applied to crew members that are designated as territorial resources only		ECC	Fitness testing has always been an important part of training and certification of firefighters to ensure they can safely and effectively conduct

Finding Theme	Recommendations	Opportunities for Improvement	Department Responsible	GNWT Response
	(i.e., not for export duty) to support coaching and mentoring local personnel.			the challenging work involved in wildfire management activities. ECC implemented alternate fitness standards in 2024 for territorial resources, which will augment national fitness testing used for NWT crews that are available for export as part of our commitments under mutual aid agreements with other jurisdictions. New fitness standards put in place this year include an arduous pack test for firefighters and a light pack test for Incident Management Team members. ECC is waiting for the review of the national fitness standard testing to determine what changes, if any, can be applied in the north that ensure the GNWT can continue to provide nationally exportable firefighters.
	3.5 - Establish specialized wildfire operations teams to evaluate and oversee complex operations such as indirect attacks (a tactic of working away from the wildfire's perimeter to get rid of forest fuel in the wildfire's path).		ECC	ECC utilizes a wide range of techniques and approach as part of its overall wildfire management program, including the use of individuals trained in specialized areas such as indirect attack, ignition and value protection. As part of this approach, the department is reviewing and enhancing our use of Ignition and Value-Protection teams to oversee complex operations such as indirect attacks. These specialized teams are key tools in helping us effectively manage wildfire operations.
		3A - Implement a formal mentoring program allowing the transfer of skills and experience from veteran firefighters to recruits. Access mutual aid partners (other provinces and territories under a mutual aid agreement that promotes and facilitates emergency management assistance between provinces and territories before, during and after a major event) to import mentors if needed.	ECC	ECC supports mentorship opportunities for NWT fire crews and other members of its wildfire management team by providing opportunities new staff to learn from experienced staff both within and outside the NWT, as well as opportunities to learn from experienced wildfire management experts who provide training to NWT personnel. The GNWT exports NWT fire crews and other wildfire management staff to other jurisdictions as part of our commitment under mutual aid agreements. These opportunities provide NWT fire personnel to gain new skills and experience from working with veteran firefighters and fire management experts from other agencies.
		3B - Continue the use of retired resources to supplement operational support when needed and ensure those individuals are	ECC	ECC utilizes a number of approaches to staff various positions on a permanent, seasonal and casual basis to meet specific needs, including the hiring of retired former ECC staff with knowledge, experience and training in

Finding Theme	Recommendations	Opportunities for Improvement	Department Responsible	GNWT Response
		placed in roles that they are qualified for and where their experience is current.		wildfire management. Retired former staff have been and will continue to be used to fill a variety of roles and functions including mentorship, duty officer support, and aerial fire detection. This practice ensures that experienced personnel contribute to operational support when needed.
		3C - Promote export opportunities for employees to learn from experts in other jurisdictions, in turn increasing expertise within the NWT upon their return.	ECC	As a member of the Canadian Interagency Forest Fire Centre (CIFCC), the GNWT Department of Environment & Climate Change (ECC) works with other federal, provincial and territorial wildland fire management agencies to coordinate resource sharing, mutual aid, and information sharing related to wildlife fires. The GNWT is also a party to a number of mutual aid agreements, which also include sharing of resources with a number of other countries. These resource sharing agreements provide an opportunity for NWT fire personnel to work with and learn from experienced wildfire experts from other jurisdictions, both when staff are exported and when representatives of other jurisdictions are brought in to work in the NWT.
4 - Aviation Resources	4.1 - Participate, where possible, in the development of *Forest Act* regulations to help ensure clarity with respect to authority to access aircraft otherwise engaged in contractual obligations to provide services to another party. It is recommended the topic of pilots be included in these discussions.		ECC	A new collaboratively developed *Forest Act* was completed in October 2023, and will come into force once regulations are developed. ECC will work with the Intergovernmental Council Secretariat, Indigenous governments, Indigenous organizations, boards, stakeholders and the public on the development of regulations in the 20th Legislative Assembly. This collaborative process will consider many factors and needs and will also be informed by lessons learned during the 2023 wildfire season. This will include consideration of resourcing needs and processes during both normal and extreme wildfire seasons.
	4.2 - Once *Forest Act* regulations have been developed and enacted, create an SOP to guide employees on the process to access		ECC	ECC maintains and periodically updates a wide range of Standard Operating Procedures (SOPs) to guide wildfire management programs and activities. New SOP's can be added as needed, and the department

Finding Theme	Recommendations	Opportunities for Improvement	Department Responsible	GNWT Response
	aircraft and pilots otherwise engaged in contractual obligations to provide services to another party.			commits to consider how to address this issue within existing or new SOPs in a way that provides clear guidelines and protocols and supports effective departmental operations during times of urgent need for aircraft and pilots and associated personnel
	4.3 - Develop an aircraft selection SOP or add aircraft selection guidance to the *Aircraft Briefing Manual*.		ECC	ECC's Forest Management Division has an Aviation Services section that is responsible for the procurement and management of aircraft to support wildfire management activities. Aviation specialists within this unit are guided by a number of process and protocols, including an Aircraft Briefing Manual. The department will review existing processes and ensure that appropriate aircraft selection guidance is included in either the existing Aircraft Briefing Manual or in a new aircraft selection SOP. This will ensure that aircraft selection is done in a standardized, consistent manner, and will provide clarity in resource utilization.
		4A - Review procedures, training, and awareness regarding incident reporting.	ECC	Awareness, training and reporting of incidents is an important part of ECC wildfire management programs and processes. The department will review, and update processes and procedures as needed to make sure they are current, effective and fully implemented.
5- Equipment Management and Infrastructure		5A - Create an online module completion tracking system to ensure the appropriate people are keeping up to date on required training for effective *ToolHound* use.	ECC	ECC is developing an online module completion tracking system to ensure that personnel keep up to date with required training for ToolHound. This system will facilitate better use of the tool's features across the department.
		5B - Assess ToolHound use across regions and warehouses to document practices and identify inconsistencies and opportunities for full feature implementation. Subsequently, create a strategy and implementation plan	ECC	ToolHound is a proven and effective equipment inventory, tracking and management system. ECC is committed to review its current use within the department and identify additional actions or supports that may be required to ensure this important tool is used effectively across our wildfire management program.

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		with clear timelines and accountabilities.		
		5C - Continue efforts to establish and complete backup communications networks that are resilient to wildfire disruptions, along with related protocols and training. Implement remote network maintenance and backup systems.	ECC, GNWT (FIN)	ECC has made strides in enhancing the resilience of its communication networks across the Northwest Territories. Starlink systems have been installed in most fire bases, providing reliable satellite internet connectivity. To support this infrastructure, ECC is developing localized training programs to ensure that personnel can operate and maintain these systems as needed, thereby safeguarding critical communication channels during emergencies. MACA has complemented these efforts by equipping Regional Emergency Management Organizations (REMOs) with Starlink systems, satellite phones, and Emergency Communication Protocols. These measures are designed to mitigate the impact of disruptions to telecommunications networks, ensuring that REMOs remain connected and operational even in adverse conditions. FIN is actively involved in several initiatives to bolster backup communication networks further. The GNWT has established partnerships, including one with the Yukon Government, to link the Mackenzie Valley Fibre Link with the Dempster Fibre Line. This project, which involves installing fibre along the Dempster Highway from Dawson City, YT, to Inuvik, NT, is expected to be completed in fall 2024. The resulting fibre loop will provide a redundant communication pathway, ensuring more reliable internet and cellphone services across the region. Additionally, construction is underway on the Inuvik to Tuktoyaktuk Fibre Line, bringing high-speed internet to residents and businesses along this corridor. The Office of the Chief Information Officer (OCIO) within the FIN continues to advocate for improvements in telecommunications capacity in the far north. By participating in CRTC proceedings, the GNWT seeks to enhance

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				the quality, reliability, affordability, and competitiveness of telecommunications services available in the NWT. While some network maintenance and backups can be conducted remotely, certain tasks require on-site intervention. In this context, the GNWT is testing satellite internet technologies, such as Starlink, at regional data centers. These tests aim to determine the viability of using satellite internet to provide redundancy for essential services like Emergency Management Operations (EMO) and health services. The results of these tests are expected in November, providing valuable insights into the future of communication infrastructure in the region.
6 - Incident Command System Discipline	6.1 Ensure a broader range of ECC employees have appropriate ICS training.		MACA (ECC)	MACA, in collaboration with FIN, has implemented a strategic redeployment process within the GNWT. This initiative aims to bolster departmental capabilities during emergencies by providing additional support for Incident Management Teams (IMTs) and related functions. In February 2024, an initial call-out to GNWT employees created a pool of 105 staff members available for redeployment. MACA has developed a comprehensive four-year GNWT Incident Command System (ICS) training plan to further enhance emergency preparedness. This plan is designed to ensure that all surge staff receive essential ICS training, with the overarching goal of training at least 10% of GNWT employees. The implementation of this training plan is set to commence in the fall of 2024, demonstrating the government's commitment to maintaining a well-prepared and capable workforce in response to emergencies.
	6.2 Advocate for more ICS training in GNWT departments in addition to MACA and ECC, as well as within NWT communities.		ECC, MACA, GNWT (FIN)	ECC and MACA have proactively sought to broaden the pool of GNWT staff trained in the Incident Command System (ICS). This initiative allows personnel from various departments to gain both formal training and valuable practical experience on GNWT incident command teams, enhancing their preparedness for emergency situations. MACA has made ICS-100 training accessible to Community Government staff through the Community Government Learning and Development platform, BrightSpace. GNWT staff can similarly access ICS training through

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				ICS Canada. Following the 2023 Wildfires, MACA offered several ICS training opportunities in the spring of 2024. These included ICS 402 courses in Yellowknife, specifically for Senior Managers, Members of the Legislative Assembly (MLAs), Deputy Ministers, Assistant Deputy Ministers, Directors, and Communications staff. ICS 200/300 courses were also conducted in Inuvik, Fort Simpson, Fort Smith, and Yellowknife, targeting a diverse group, including RCMP members and Regional Emergency Management Organization (EMO) members. The training plan encompasses courses up to the 300 level, followed by specialized training for specific roles such as Command and General Staff positions. The GNWT remains committed to promoting ICS training across all GNWT employees, ensuring that the workforce is well-equipped with the necessary skills and knowledge to respond effectively to emergencies. This comprehensive approach to ICS training reflects the GNWT's dedication to fostering a robust and capable emergency management infrastructure.
		6A - Enhance training and education of the benefits to reporting ICS protocol non-compliances to enable reviews and learnings. Perform regular reviews/investigations of reported incidents and published findings summaries, along with lessons learned and opportunities for improvements.	ECC	ICS has been adopted as the response model for the purpose of the NWT Emergency Plan, which was updated in April 2024 and communicated to all GNWT departments, agencies, local authorities, and the public. After each event where either the Local, Regional, or Territorial Emergency Management Organizations are activated, an After-Action Review is conducted and published to learn what worked well and where improvements could be made, including the level of ICS compliance and where it is applied. ICS has also been adopted as the response model for the purpose of the NWT Emergency Plan, which was updated in April 2024 and communicated to all GNWT departments, agencies, local authorities, and the public.
7 - Policy, Strategy, and	7.1 - Review and modernize a comprehensive approach to SOP training and make physical SOP binders available at		ECC	ECC maintains and periodically updates a wide range of Standard Operating Procedures (SOPs) to guide wildfire management programs and activities. New SOP's can be added as needed, and the department is

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Procedures	the start of each season. Track binder locations and use spot audits and other tactics to keep the binders updated. Circulate and clarify the online pathways for accessing SOPs and the Wildfire Strategy.			committed to reviewing its current SOP's to identify any changes or additions that are needed based on experiences and lessons learned from the 2023 wildfire season. The department will make complete physical binders available in each regional office and other locations as needed, in addition to the electronic versions available to ECC staff. This will ensure that all staff have options to access to up-to-date procedures at the start of each wildfire season.
	7.2 - Review and modernize the AAR system, and implement processes to track, monitor and incentivize adherence. Use AARs to help create a Lessons Learned system.		ECC	The use of After-Action Reviews (AAR) for individual fires is a part of ECC's normal operating process. The Department is reviewing its existing AAR processes and processes to identify areas for improvement, ensure completion for each fire, and support use of AAR's to support a process and culture of Lessons Learned and continuous improvement.
		7A - Conduct periodic audits related to policy and SOP compliance and engage employees from all levels to determine barriers and opportunities to awareness, education, and compliance.	ECC	Policies, strategies and SOPs are an important part of ECC's wildfire management program and approach. ECC is committed to conduct periodic reviews our policies and SOP's, and an audit of compliance. The department will engage employees from all levels to identify barriers and opportunities for improvement.
		7B - Refine and finalize the Required Planning for Wildfire Events document and ensure that the integration with software is clear and consistent (i.e., EMBER or SPARCS).	ECC	ECC is committed to review its Required Planning for Wildlife Events document, and update as appropriate to ensure wildfire managers have the information required to support wildfire planning and response decisions.
8 - Wildfire and Wildfire Response Information Sharing	8.1 Reaffirm with the relevant government departments which department is responsible for responding to each of the various types of misinformation. Consider the different partners and employee counterparts that should be included in this conversation (political leaders, ECC, MACA, Health, etc.).		ECC, MACA, GNWT (EIA)	A Joint Information Committee to enhance the coordination of public information dissemination. This committee aims to ensure consistent and accurate communication during emergencies, fostering public trust and understanding. MACA updated the NWT Emergency Plan in April 2024. This comprehensive plan provides a robust framework for coordination and planning during emergencies that may impact all or part of the Northwest Territories. It outlines the collaborative efforts of emergency management partners to address widespread, large-scale, and complex emergencies, with a

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				particular emphasis on communication. Section 5 of the updated plan details the emergency communication activities across three critical phases: preparedness, response, and recovery. The accompanying Emergency Communications Protocol specifies the roles, responsibilities, tools, and tactics to be employed when Regional or Territorial Emergency Management Organizations are activated. This protocol is grounded in seven key principles, including a commitment by the GNWT to continuously monitor and correct public messaging to mitigate misinformation and reassure the public. Additionally, communications at the local level are guided by Community Emergency Plans, ensuring that messaging is coherent and contextually appropriate. This coordinated approach aims to provide clear and accurate information, maintaining public confidence and facilitating effective emergency response efforts. Following the 2023 wildfire season, the GNWT also implemented a new communications protocol to share information with Indigenous governments during emergency events where the Regional or Territorial Emergency Management Organization (EMO) is activated, including those involving wildfires. This protocol was used during the 2024 wildfire season, and provided an effective and efficient process to share information on wildfires near communities. EIA supports working with departments to confirm which department is responsible for responding to and sharing relevant information. EIA has an information sharing protocol in place with the Council of Leaders to share information and material and is available to convene Leadership meetings to ensure that Indigenous government Leaders have timely information and opportunity to connect directly with relevant Ministers.
		8A - Continue investment in off-season community engagement and education	ECC	ECC is committed to continue to engage and support local communities on wildfire prevention, mitigation and response planning. Each winter, ECC

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		events to provide the public with information on the responsibilities of various government agencies related to wildfire response, highlight proper communication channels, and improve understanding of how resources are deployed and prioritized.		engages with all of the forested communities across the NWT to look back at the last wildfire season, and discuss local planning for the upcoming season. The Department is also available to provide advice on Community Wildfire Protection Plans, Fire Smart initiatives, and other local initiatives targeted at wildfire prevention and mitigation. These initiatives are also intended to provide information on the roles and responsibilities of various government agencies and organizations related to wildfire response, proper communication channels, and resource deployment.
9 - Coordination with Municipal Governments and Indigenous Governments	9.1 - ECC/FMD wildfire employees and community structural firefighters should engage with one another during the offseason in simulated wildfire scenarios for areas where jurisdiction is unclear. This will help all involved understand roles and responsibilities and support continuous improvement.		ECC, MACA	ECC has enhanced collaboration with local fire departments including information sharing, communications and increased cross-training initiatives. This effort aims to improve the coordination and effectiveness of emergency response efforts, with an emphasis on the Wildland Urban Interface (WUI). ECC is committed to further expanding this collaboration, recognizing the value of shared expertise and joint training in enhancing community safety and preparedness. MACA is dedicated to supporting these efforts through active participation in Territorial and Regional FireSmart Committees, which are led by ECC. These committees play a crucial role in planning and preparedness at the community level, fostering engagement with community leaders and local fire departments. MACA collaborates closely with ECC to provide specialized training for local fire departments, particularly in structural fire protection measures. This training is essential for ensuring that communities are well-prepared and protected when facing the threat of an approaching wildfire. By strengthening these partnerships and enhancing training programs, both departments aim to bolster the resilience and safety of communities across the Northwest Territories.

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	9.2 - Develop MOUs between ECC and municipalities and Indigenous Governments to document future areas of cooperation and commitments.		ECC, MACA, EIA	MACA has taken proactive steps to enhance cooperation and coordination during joint responses involving community governments and Indigenous governments. MACA has introduced a new annex in the Community Emergency Plan template to facilitate this. This annex is designed to formalize commitments and outline the roles and responsibilities of all parties involved, ensuring a clear and cohesive approach during emergency situations. Additionally, MACA has developed a comprehensive protocol in collaboration with ECC for Wildfire Event Notifications. This protocol is a standardized process for timely and effective communication between departments, ensuring that all relevant stakeholders are informed and prepared to respond to wildfire events. The development of formal Memorandums of Understanding (MOUs) between MACA, ECC, and other involved parties may also be guided by insights gained from the after-action review conducted by the Executive and Indigenous Affairs (EIA) following the 2023 wildfires. This collaborative approach aims to strengthen partnerships and improve the overall effectiveness of emergency management in the Northwest Territories. EIA supports the development of MOUs with Indigenous governments and municipalities to clarify roles and responsibilities, as well as communication processes and future areas of cooperation. EIA is available to provide support as needed.
	9.3 - Conduct Intergovernmental tabletop exercises to help ECC, Municipal Governments, and Indigenous Governments understand each other's concerns for their employees in the event of an evacuation order and predict the challenges that would cause confusion around the go/stay decisions for different groups (EMO, health,		ECC, MACA, GNWT (HSS, EIA, FIN)	The GNWT recognizes the importance of discussions amongst departments on their respective roles, responsibilities and processes, and a coordinated overall approach to planning, communications and response during an emergency. Following the 2023 wildfire season, a series of meetings were held between senior officials and program staff from GNWT departments to clarify roles, identify challenges and areas for improvement, and processes for working together effectively and efficiently. These discussions have helped inform processes, strategies and alignment during the 2024

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	food service, and policing).			wildfire season, and will support a unified approach to emergency management in the Northwest Territories. MACA regularly conducts tabletop exercises with local authorities as part of its Emergency Management division's efforts. These exercises are crucial for testing and improving emergency response strategies. However, MACA recognizes the importance of involving a broader range of stakeholders in these exercises. The department encourages local authorities to include all relevant partners and agencies, ensuring comprehensive participation and coordination across different sectors. EIA agrees tabletop exercises and the development of MOUs (as suggested above) will benefit the GNWT, Indigenous governments, and municipal governments in better understanding each other's concerns and provide clarity in the event of an evacuation order. EIA supports stronger channels of communication and engagement with Indigenous governments and municipal governments.
		9A - Continue discussion around "essential workers" to attain further clarity and formalize a definition.	ECC, MACA, FIN	While ECC is the lead agency involved in wildfire management and response, a number of staff and programs from other departments play a key role in supporting the GNWT's response to a wildfire emergency. The interdepartmental planning described above included discussions on a coordinated approach to identify essential worker functions in different departments, operational needs to support these roles, and a process to ensure individual staff are aware of their role in an emergency response. MACA includes the Essential Services Continuity Plan in Appendix E of its Community Emergency Planning template, which is publicly accessible. This plan serves as a vital resource for Local Authorities, helping them identify essential services, personnel, and resources needed during emergency situations. By providing a structured approach, MACA supports

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				communities in maintaining critical functions and ensuring public safety. FIN underscores the role of workers who perform critical functions during an emergency response. These individuals are essential for effectively addressing the crisis and ensuring that key operations continue to function. This acknowledgment of critical roles within the GNWT and in the private sector underscores the need for comprehensive planning and coordination to manage emergencies effectively. HSS emphasizes the importance of considering the private sector in emergency response planning, particularly workers in critical areas such as the hospitality industry. Given that GNWT staff alone cannot meet all the demands during emergencies, HSS suggests identifying and designating private sector roles as "essential." This designation would facilitate smoother access to and evacuation from affected zones. HSS also highlights the need for a clearly defined process to create a real-time list of approved individuals at entry points, ensuring efficient and orderly movement during emergencies.
		9B - Continue the regular practice of assigning an ECC Agency Representative (AREP) to the local government's Emergency Operation Centre (EOC) when activated to increase info flow, improve relationships, and build trust.	ECC, MACA	The GNWT recognizes the crucial role that representation from various partners and agencies plays in Emergency Operations Centers (EOCs). This representation facilitates valuable information sharing, which is essential for effective decision-making and coordination during emergencies. The GNWT is committed to continuing this practice, as it enhances the overall response effort by ensuring that diverse perspectives and expertise are integrated into the planning and execution of emergency measures. The ongoing assignment of an ECC Agency Representative (AREP) to local EOCs will continue. This practice helps streamline response efforts, ensuring that critical information is promptly relayed and that the needs of the community are met efficiently.

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10 - Prevention and Community Protection	10.1 - Define and communicate roles and responsibilities for community protection projects and ensure that maintenance is planned into the future. Confirm who will initiate them, who will plan and resource them, who will conduct them, who will maintain them, and how the public can support them.		ECC, MACA	The GNWT acknowledges the critical importance of establishing a shared understanding of collaboration processes and the associated financial responsibilities. This clarity is essential for ensuring that all parties involved in emergency management and community protection are aligned and can work together effectively. ECC is the lead for Territorial and Regional FireSmart Committees, which will also include participation of MACA, communities, Indigenous governments and others. Through these committees, MACA supports comprehensive planning and preparedness efforts at the community level. This includes engaging with community leadership and local fire departments to develop and implement strategies for wildfire prevention and mitigation. In addition to providing strategic guidance, MACA assists community governments in identifying and accessing financial resources necessary to undertake FireSmart community protection projects.
	10.2 - Consult with Municipal Governments, Indigenous Governments, and the public to bring the VAR registry up-to-date, inclusive of natural and cultural values, and ensure check-ups are conducted as expected.		ECC, MACA, EIA	EIA agrees that working with Indigenous governments, municipal governments and the public to update the VAR registry in advance of wildfire season should be done.
		10A - Enhance promotional efforts of the FireSmart program for various audiences, including the use of fuel breaks.	ECC, MACA	ECC has been dedicating substantial effort and resources to enhancing its prevention and mitigation programs. A key component of these initiatives is the FireSmart program, including the Advanced Home Assessment Program, which has seen significant progress throughout 2024. ECC is committed to expanding and promoting these programs across the territory, ensuring that communities are better equipped to prevent and mitigate the impacts of wildfires. MACA plays a complementary role by actively promoting the FireSmart program during community emergency planning workshops and tabletop exercises with Local Authorities. MACA's involvement ensures that the

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				principles and practices of FireSmart are integrated into broader emergency preparedness efforts. Additionally, MACA plans to invite ECC representatives to participate in Community Emergency Planning (CEP) workshops where possible, fostering a collaborative approach to community safety. To further amplify the reach of FireSmart initiatives, MACA intends to incorporate FireSmart messaging into its annual "Be Ready" Campaign. This integration will help reinforce ECC's messaging and materials, providing a unified and comprehensive communication strategy that encourages communities to adopt fire prevention and mitigation measures. Through these coordinated efforts, both departments aim to enhance the resilience and safety of communities across the Northwest Territories.
		10B - Continue to explore the use of preventative forest management procedures, including prescribed burns with partners.	ECC	ECC acknowledges that while prescribed burning has been conducted in collaboration with a number of partners in recent years, there remains a need to expand these efforts. ECC recognizes the value and importance of prescribed burns as a strategic tool in wildfire mitigation, helping to reduce fuel loads and manage fire risk. As a result, advancing the use of prescribed burning is a key objective for the department. ECC is committed to enhancing these initiatives across the territory, working closely with various partners to implement effective and controlled burns that contribute to the safety and resilience of communities.
11 - Budgeting and Reporting Structure	11.1 - Consolidate the regional and territorial aspects of the Wildfire Management Program into a single program with a single consolidated budget and financial reporting structure. The program human resourcing, budgeting, and reporting should be consolidated under Wildlife and Forest Management, with regionally located resources reporting to Forest Management Division. Budget allocations should be		ECC	As part of its consideration of the 2023 Wildfire Response Review and recommendations, ECC will take time to further examine and consider this option. The department will review this recommendation in light of its current wildfire management operations and anticipated future needs to determine this approach's feasibility and potential benefits. This review will include an assessment of current program structure and function, approaches used in other jurisdictions, an analysis of best practices, and an assessment of the potential impact on the department's operations, goals and objectives, and overarching Forest Fire Management Policy.

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	determined on an annual basis through a work planning and prioritization exercise			

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