



**PS-SP-#3909686-v1-EM-9101-21996-CA**  
**SAR Incident Data Management**  
**SARNIF Project**

**Year 1 Report**

*March 2022*

## ***Acknowledgements***

CanOps would like to acknowledge the various organizations that have contributed to our 2021 E-Scan. Specifically, we would like to thank the members of our SAR Incident Data Management Advisory Group that has been instrumental in the project and assisted CanOps in gaining access to the SAR community.

The Organizations that have contributed to the discussion are as follows:

- Search and Rescue Volunteer Association of Canada (SARVAC)
  - SARSAV, BCSARA, SARMANVA, SARA, NBGSARA, NLSARA, NSGSARA, AQBRS, OSARVA, PEIGSAR, YKSAR, YSAR, Nunavut
- Parks Canada
- Royal Canadian Mounted Police (RCMP)
- Public Safety Canada (PSC)
- Ontario Provincial Police (OPP)
- Ground SAR Council of Canada (GSARCC)
- Department of National Defense/ Canadian Armed Forces (DND/ CAF)
- Aboriginal Firefighters Association of Canada (AFAC)
- Saskatchewan Public Safety Agency (SPSA)
- Sûreté du Québec
- Canadian Air Search and Rescue Association (CASARA)
- Canadian Public Safety Operation Organization (CanOps)
- Canadian Coast Guard (CCG)

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## EXECUTIVE SUMMARY

In Canada, there are many Search and Rescue (SAR) organizations currently in operation, serving and supporting the public in a variety of ways. This includes air, and maritime SAR, as well as ground SAR which continues to evolve to support humanitarian efforts around the country. These organizations function at various levels and with different focus areas in order to provide the best service possible based on what is available for them to work with regionally.

In June 2021 the Canadian Public Safety Operations Organization (CanOps) received a SARNIF grant to complete an Environmental Scan (E-Scan) and define the problem(s) in national data collection pertaining to Ground Search and Rescue (GSAR), as part of the first phase of this two-year project. In doing so, we would identify any linkages across the broader SAR community that would provide the best opportunity to give a panoramic view into Canadian SAR. The second phase of this project will conclude in March 2023 and will provide recommendations for a comprehensive solution to the problems mentioned in this report.

CanOps' approach to this E-Scan was holistic, inclusive, and collaborative as it was observed that to fully understand the challenges that surround national data collection, we would need to bring the key SAR stakeholders into the discussion. The Search and Rescue Incident Data Management Advisory Group was created to facilitate these discussions.

In the many discussions, surveys, and meetings that were conducted, many challenges were tabled from the SAR community that were consistent with those of the key stakeholders within the Advisory Group. After careful analysis, the following two main themes were identified:

1. *A lack of an overarching governance structure/model that provides a sustainable direction and oversight contributing to a holistic national search and rescue program.*
2. *A lack of a flexible technology platform that provides both levels of SAR awareness, Lost Person Behavioral statistics, and SAR program management.*

GSAR members have identified that they would welcome the opportunity to consolidate their data together to harvest the learnings that can be taken from a bigger picture. However, these organizations are struggling when it comes to finding opportunities for national SAR coordination and alignment. They are seeking greater national collaboration between SAR groups/agencies.

In Year 2 of this SARNIF project, CanOps will coordinate and facilitate meetings with the SAR incident Data Management Advisory Group, along with opening discussions to other committees, government organizations and non-government organizations to investigate potential solutions for a national data platform and the associated governance needs.

## 1.0 ACRONYMS

- AFAC - Aboriginal Firefighters Association of Canada
- AHJ - Authority Having Jurisdiction
- AQBRS - Association Québécoise des bénévoles en recherché et Sauvetage
- BCSARA – British Columbia Search and Rescue Association
- CAF - Canadian Armed Forces
- CASARA - Civil Air Search and Rescue Association
- CCG - Canadian Coast Guard
- COSPAS-SARSAT - International Satellite System for Search and Rescue
- DMS - Data Management System
- DND - Department of National Defense
- EMO - Emergency Management Office
- E-Scan - Environmental Scan (Group/Community Survey)
- GSAR - Ground Search and Rescue
- GSARCC - Ground Search and Rescue Council of Canada
- HUSAR - Heavy Urban Search and Rescue
- ICS – Incident Command System
- ISRID – International Search Rescue Incident Database
- LPB – Lost Person Behaviour
- SARA – Search and Rescue Alberta
- SARKMS – Search and Rescue Knowledge Management System
- SARMANVA – Search and Rescue Manitoba Volunteer Association
- SARSAV – Search and Rescue Saskatchewan Association of Volunteers
- NBGSARA – New Brunswick Ground Search and Rescue Association
- NLSARA - Newfoundland and Labrador Search and Rescue Association
- NSGSARA- Nova Scotia Ground Search and Rescue Association
- NSP - National Search and Rescue Program
- NSS - National Search and Rescue Secretariat
- OPP - Ontario Provincial Police
- OSARVA - Ontario Search and Rescue Volunteer Association
- PEIGSAR – Prince Edward Island Ground Search and Rescue
- PSC - Public Safety Canada
- P/T – Province/ Territory
- RCAF - Royal Canadian Air Force
- RCMP - Royal Canadian Mounted Police
- SAR - Search and Rescue
- SARNIF - SAR New Initiatives Fund
- SARscene – National Search and Rescue conference
- SARVAC - Search and Rescue Volunteer Association of Canada
- USAR - Urban Search and Rescue
- YKSAR – Yellow Knife Search and Rescue
- YSAR – Yukon Search and Rescue

## 2.0 INTRODUCTION

The SAR New Initiatives Fund (SARNIF) was established by the federal government in 1988 and is managed by Public Safety Canada (PSC), in partnership with other federal, provincial, and territorial SAR organizations. SARNIF provides annual funding for projects that will improve the National SAR Program.<sup>1</sup>

In June 2021, CanOps was awarded a two-year SARNIF Contribution Agreement to define the problems, impediments and requirements around a national incident data collection system for Ground SAR (GSAR) and to create a communication platform that will foster regional and national collaboration between GSAR groups (Year 1); as well as to recommend strategies for increasing national coordination and collaboration among GSAR groups, and to identify the requirements for a national incident data collection system for GSAR (Year 2).

This report provides the findings from Year 1.

## 3.0 METHODOLOGY

This environmental scan (E-Scan) was conducted from August 2021 through to February 2022, allowing for six months of meetings, discussions, and surveys to obtain a holistic view of the challenges surrounding the integration of national GSAR data and statistics.

Opportunity for discussions, surveys, interviews, and workshops were delivered to all stakeholders associated with SAR, including GSAR associations, provincial and territorial government GSAR representatives, law enforcement agencies, and federal government partners.

In order to fully understand the current problems that impede the establishment and facilitation of a national GSAR data collection system, as well opportunities for coordination and collaboration between GSAR groups, CanOps conducted the following actions:

### 3.1 Historical Review

CanOps reviewed the history of SAR governance in Canada, and efforts to date to bring the GSAR and broader SAR community together at a national level. This included discussion and investigation around the SAR Knowledge Management System (SARKMS).

### 3.2 Regulatory Scan

CanOps gathered and reviewed legislation and governance around SAR in Canada.

### 3.3 Interviews

CanOps conducted interviews with SAR subject matter experts, SAR organizations, vendors, and others to obtain a keen understanding of lessons learned, historical knowledge on past systems, and comparable systems across the country.

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<sup>1</sup> PSC, SARNIF - <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndng-mrgnc-vnts/nss/nif-en.aspx>

### 3.4 Surveys

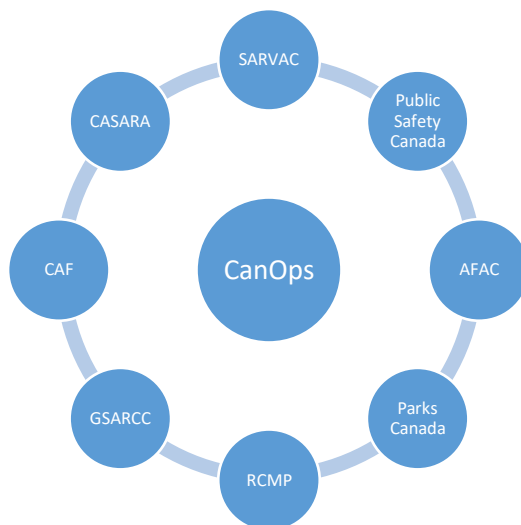
CanOps conducted surveys across the many stakeholders within the SAR community for the purpose of understanding the challenges that SAR organizations are currently facing when it comes to data collection and management on a municipal, provincial, and national level. This included surveying the following organizations:

- Provincial & Municipal Police Services
- RCMP
- Public Safety Canada
- GSAR Representatives from all Provinces and Territories
- Canadian Joint Operations Command
- Canadian Coast Guard
- Civil Air Search and Rescue Association
- Provincial SAR Associations
- Search and Rescue Volunteer Association of Canada (SARVAC)
- Parks Canada

### 3.5 Establishment of Advisory Group

As part of Year 1 of this project, CanOps established a SAR Advisory Group to provide a communication platform that will allow and foster collaboration between SAR groups nationally and regionally. Members of the Advisory Group functioned as liaisons between this project and their respective organizations, sharing project information back and forth and relaying any issues, concerns, and feedback. The specific representatives were selected with a view to maximize representation from a broad base of SAR organizations in Canada, and include the following:

- Search and Rescue Volunteer Association of Canada (SARVAC)
- Public Safety Canada (PSC)
- Department of National Defense/ Canadian Armed Force (DND/ CAF)
- RCMP
- Ontario Provincial Police
- Ground SAR Council of Canada (OPP/ GSARCC)
- Canadian Air Search and Rescue Association (CASARA)
- Parks Canada
- Aboriginal Firefighters Association of Canada (AFAC)
- Canadian Public Safety Operations Organization (CanOps)



### 3.6 Advisory Group Meetings

Two quarterly meetings were conducted via online video conference in September and November of 2021, with the purpose of providing project updates, conducting brainstorming sessions, and providing an overview of the challenges and summaries of the information that had been collected.

A face-to-face data management system champion meeting was held with select provinces and organizations that currently use a Data Management System (DMS) within their own jurisdiction. This was done to discuss successes and ongoing challenges that occurred when developing, implementing, and running an operational DMS locally, provincially, and nationally. This also provided an opportunity to bring to light the challenges that occurred when reporting SAR incident data to the Authorities Having Jurisdiction.

Another face-to-face meeting of the Advisory Group is planned for March 2022 to walk them through the methodology used to research and develop the problem statements, to present each of the two problem statements and start to focus on next steps that will help guide activities in Year 2 of this project.

## 4.0 RESULTS

Based on the approach we took to analyze the current environment surrounding collaboration, data information sharing and the impediments to effectively achieve these in the future, we have identified two primary themes that require further discussion and work in order to achieve the goals of the SAR community. These themes are:

1. A lack of an overarching governance structure/ model that provides a sustainable direction and oversight contributing to a holistic national search and rescue program.



2. A lack of a flexible technology platform that provides both levels of SAR awareness, Lost Person Behavioural statistics, and SAR program management.

## 4.1 Governance

### 4.1.1 GSAR Community Concerns on Governance

E-Scan participants identified the following primary concerns:

1. *Centralized Governance* - Under the decentralized GSAR governance model, while regional GSAR volunteer groups come together through SARVAC, SARVAC does not hold authority over GSAR and cannot mandate coherency of volunteer GSAR efforts across Canada. As well, the provincial/territorial governments (GSAR AHJ's) have jurisdiction only within their province/territory and cannot mandate coherency of provincial/ territorial/ police/ volunteer GSAR efforts across the country.

Based on the discussions conducted as part of this E-Scan, many members of the Canadian GSAR community would prefer a centralized governance model. They feel that the current decentralized model leaves the GSAR community fragmented and unable to harness the full potential of collaboration between GSAR groups and partner agencies. Members find themselves feeling confused when navigating the system to achieve tangible outcomes and progress. A significant level of frustration was heard about the difficulty of collaboration and data sharing.

2. *Government Support* - 87.5% of surveyed GSAR groups say they feel unsupported by the provinces/ territories and by the federal government.

SAR activities in Canada are a shared responsibility, managed through a horizontal system across federal, provincial/ territorial, and other agencies.

At the national level, there is a National Search and Rescue Program<sup>2</sup> (NSP). The responsibility for the NSP resides with the National Search and Rescue Secretariat (NSS). Formed in response to the 1982 Ocean Ranger disaster, the NSS was established in 1986 and reported to the Lead Minister for Search and Rescue/Minister of National Defence until 2015. In 2015, the NSS responsibility moved to Public Safety Canada, and report to the Minister of Emergency Preparedness.<sup>3</sup>

As per Public Safety Canada (PSC), 'the NSS provides policy advice and recommendations to support Canada's search and rescue efforts. The Secretariat also plays an important role in

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<sup>2</sup> National SAR Program - <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndng-mrgnc-vnts/nss/prgrm-en.aspx>

<sup>3</sup> [https://en.wikipedia.org/wiki/National\\_Search\\_and\\_Rescue\\_Secretariat](https://en.wikipedia.org/wiki/National_Search_and_Rescue_Secretariat)

prevention through outreach initiatives that foster communication, interoperability and coordination within the search and rescue (SAR) community.’<sup>4</sup>

The priorities of the NSS are listed as follows<sup>5</sup>:

- Enable the coordinated priorities of other government departments and stakeholders through governance support, programming, and overarching policy direction
- Assume leadership roles in various aspects of SAR [....]
- Advance Canada’s Heavy Urban Search and Rescue Program
- Enhance coordination of Canada’s SAR prevention programs
- Renew Canada’s national SAR policy framework
- Improve Canada’s SAR governance
- Continue to coordinate the Government of Canada participation and leadership in the International COSPAS-SARSAT Programme, providing oversight and advancing international treaty negotiations

Overarchingly, PSC’s SAR portfolio includes the following<sup>6</sup>:

- a. National Search and Rescue Secretariat (NSS)
- b. Contribution Programs (SARNIF, SARscene, national SAR conference)
- c. Prevention (AdventureSmart, Dementia)
- d. International Search and Rescue Satellite System
- e. Urban Search and Rescue
- f. Search and Rescue Volunteers
- g. Search and Rescue Committees

Within the NSP, jurisdiction over air and maritime SAR is clearly defined. CASARA being the volunteer body for Air SAR reports operationally back to the Royal Canadian Airforce similarly the Canadian Coast Guard Auxiliary back to the CCG. The responsibility for GSAR, however, is fragmented and less clearly defined. In addition, while air and maritime SAR have the Department of National Defence as a central coordinating agency, GSAR does not.

Discussions with E-Scan participants brought to light concerns that GSAR seems to have now become less of priority within the NSS.

#### **4.1.1 Legislation**

There is no federal legislation specific to GSAR in Canada.

At the provincial/territorial level, while there is no single federal Missing Persons Act, there are individual provincial/territorial Missing Persons Acts that give various levels of power and

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<sup>4</sup> National SAR Secretariat - <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndng-mrgnc-vnts/nss/nsrs-snrs-en.aspx>

<sup>5</sup> National SAR Secretariat - <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndng-mrgnc-vnts/nss/nsrs-snrs-en.aspx>

<sup>6</sup> PSC, SAR Programs and Policies - <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndng-mrgnc-vnts/nss/index-en.aspx>

resources to law enforcement agencies, enabling them to request and access information and records related to the missing person, even when there is no reason to suspect a criminal context.

Further, the Public Inquiry Respecting Ground Search and Rescue for Lost and Missing Persons<sup>7</sup>, conducted by Commissioner James Igloliorte for the Province of Newfoundland and Labrador in 2021, includes Exhibit P-198<sup>8</sup> - Goodland Buckingham's legal opinion on the respective jurisdictions of the provincial and federal governments with respect to search and rescue operations near the Newfoundland and Labrador coastline. As per page 6 of the exhibit, the legal opinion concludes that there is an overlap in federal and provincial jurisdiction. As well, the opinion points out that the Canadian Constitution provides governments with power rather than responsibilities, and that SAR administration is a question of politics and administration rather than a question of law:

*'Canada's constitution gives the provincial and federal governments overlapping jurisdiction over coastal search and rescue in Newfoundland and Labrador. Both levels of government can spend money on search and rescue equipment personnel or equipment. Both levels of government can legislate about search and rescue operations within the Province, and some provincial laws may even have incidental effects outside provincial boundaries. As a result, the legal framework that governs search and rescue operations changes as the search moves imperceptibly from provincially administered Crown land to federally administered Crown land, from provincial waters above the low-tide mark or between the jaws of the land to the federal waters beyond.*

*The Constitution describes the federal and provincial governments' powers, not their responsibilities. How the provincial and federal governments use their constitutional powers to allow effective searches in coastal areas is a question of politics and administration rather than law. By providing a wide area of overlapping jurisdiction, the Constitution provides each government with room to act, experiment, and cooperate.'*

As per the last sentence of the above quote, having SAR be a matter of administration rather than law 'provides each government with room to act, experiment and cooperate'. This provides a level of freedom for governments to respond in an agile manner to the continuously changing political landscapes, increasingly unpredictable weather patterns, SAR response resources available at the time of an incident, and the unique nature of each SAR incident.

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<sup>7</sup> Public Inquiry Respecting Ground Search and Rescue for Lost and Missing Persons Report - <https://www.nlgsarinquiry.ca/files/11-30-2021-Final-Report-GSAR-Inquiry.pdf>

<sup>8</sup> Report Exhibit P-198 Goodland Buckingham legal opinion - <https://www.nlgsarinquiry.ca/files/Exhibit-P-198-1.pdf>

#### 4.1.2 Authorities Having Jurisdiction (AHJ's)

Jurisdiction over SAR in Canada is distributed across different authorities. The AHJ's in Canada fall under the umbrella of the NSP and include:

- The Royal Canadian Airforce for aeronautical incidents<sup>9</sup>
- The Canadian Coast Guard for maritime incidents<sup>10</sup>
- Parks Canada for incidents within national parks<sup>11</sup>
- Provincial/Territorial governments for incidents on land or inland waters

Some provincial/territorial governments exercise the authority over their jurisdiction directly (e.g., through an internal ministry or internal Emergency Management Organization (EMO) program such as in BC, NB, NWT, and NV), while other provincial/territorial governments delegate that primary authority to their law enforcement agency(ies) (national/provincial/territorial/regional/municipal police services such as in AB, SK, MB, ON, QC, NS, PEI, NFLD/LAB, and YT).

Although in all cases of being tasked there is clarity of the AHJ, there is gap when it comes to program support and where the responsibility lies when it comes to liability, operational expenses, training oversight, and standard acceptance.

#### 4.1.3 Canadian SAR Committees

In addition, there is a variety of committees, councils, and roundtables that work to progress SAR efforts and coordination across the country<sup>12</sup>. These different bodies continue to evolve over time through changes in co-chairs, membership, focus and mandate.

A clear scope for all and clear links between the groups could not be fully established, with gaps as well as overlap in both mandate and membership appearing to occur.

#### 4.1.4 SAR Volunteers

In addition to the resources tending to SAR activities as part of an AHJ (e.g., Royal Canadian Airforce (RCAF), Canadian Coast Guard (CCG), Parks Canada, provincial/territorial ministries or EMO's, law enforcement), Canada has many dedicated SAR volunteers.

PSC recognizes three domains of SAR and the associated volunteer groups.<sup>13</sup> The RCAF is supported by the Civil Air SAR Association (CASARA). The CCG is supported by the Canadian Coast Guard Auxiliary. Parks Canada relies on a collaboration with the public through their

<sup>9</sup> DND SAR - <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/types/search-rescue.html>

<sup>10</sup> CCG SAR - <https://www.ccg-gcc.gc.ca/publications/search-rescue-recherche-sauvetage/sar-canada-res-eng.html>

<sup>11</sup> Parks Canada, Visitor Safety - <https://www.pc.gc.ca/en/voyage-travel/securite-safety>

<sup>12</sup> SAR Committees - <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndng-mrgnc-vnts/nss/src-crs-en.aspx>

<sup>13</sup> SAR Volunteers - <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndng-mrgnc-vnts/nss/srv-brs-en.aspx>

Visitor Safety Program to maximize visitor safety, as well as support from law enforcement and GSAR groups.

Provincial/territorial GSAR activities are supported by approximately 300 volunteer GSAR teams across Canada, including approximately 9,000 volunteers.<sup>14</sup> These volunteers are part of their provincial/ territorial SAR associations, and come together at a national level through the Search and Rescue Volunteer Association of Canada (SARVAC).

All AHJ's and volunteer organizations lean on each other in different ways and dependent on the situation, if/when needed, come together to support each other when there is a time of need. However, sharing resources cross jurisdictions can prove difficult when there is a lack co-ordination oversight nationally.

#### **4.1.5 Liability**

Currently, it is difficult for SAR teams to determine with certainty where liability for GSAR members rests. During the E-Scan, some participants indicated that liability for GSAR volunteers rests with the provincial/territorial AHJ, even if the province/territory has delegated their GSAR mandate to their law enforcement agency; this would need to be confirmed more formally. It may be that liability exists to varying degrees at varying levels. It may also be that there are gaps in liability. As well, liability may differ between provinces/territories since each jurisdiction has its own unique GSAR framework in place.

This uncertainty surrounding liability affects recruitment of GSAR volunteers and members. Without a clear understanding of liability, civilians may not feel safe or certain about joining a GSAR teams, and teams may not know how to best protect their members.

#### **4.1.6 Law Enforcement SAR**

Where a province/territory delegates the authority over its provincial/territorial GSAR jurisdiction to its local law enforcement agency (e.g., RCMP, OPP, etc.), the law enforcement agency must work within its own defined operational parameters to administer and execute the delegated SAR mandate.

##### The Police/SAR Volunteer Interface -

As mentioned, law enforcement bodies must operate within specific parameters. Full information sharing, collaboration, and coordination with external parties such as volunteer GSAR groups is often difficult, due to confidentiality protocols, process protocols, etc. that the law enforcement agency must adhere to. The extent of collaboration possible for an individual SAR incident is in part dependent on the nature of the individual incident (e.g., if a higher degree of criminal investigation is required, then a higher degree of protocols and confidentiality must be applied by police). At the same time, in the interest of best serving the public with all available resources, police agencies and SAR volunteers have no choice but to work together in whatever way possible.

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<sup>14</sup> SARVAC - <https://sarvac.ca/>

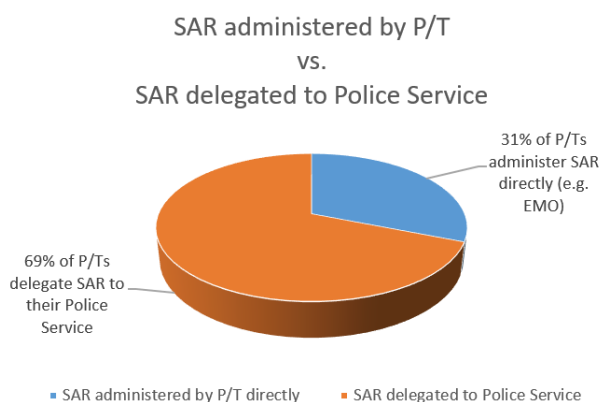
This necessary cooperation, and the associated challenges, is illustrated in the report prepared for the Public Inquiry Respecting Ground Search and Rescue for Lost and Missing Persons, Newfoundland/ Labrador.<sup>15</sup> As per page 11 of the report:

*‘The primary responsibility for searching for lost and missing persons lies with the police service having jurisdiction over that region of the Province. [...] These police agencies generally lack the human resources, the specialized knowledge, and often the specialized equipment to actually conduct intensive ground searches for missing persons. Thus, while they always maintain overall authority over an operation, they generally task much of the actual searching to volunteers.’*

Also, on page 11 of the report:

*‘NLSARA teams do not self-deploy; rather, they are tasked by a policing agency and asked to “stand down” by that agency when their services are no longer required. Teams often combine resources for especially time-sensitive, lengthy or demanding searches, or to provide particular expertise or equipment to a team lacking these resources.’*

As per the chart below, nine out of thirteen P/T’s delegate the responsibility for SAR to their police service(s).



## 4.2 SAR Data

Having an active national SAR dataset and data platform would provide significant benefits to the SAR community, related agencies, and the public. It would support evidence-based decision making about policy, program, and best practice development; it would allow for more effective and efficient response and response planning; it would provide data to affect changes to education and awareness campaigns; it would affect change to training and standards; and would support increased collaboration at a national level. A national data continuum would include local data collection, data submission to a centralized data platform, national data aggregation, production of statistics and reporting, and data product distribution.

<sup>15</sup> Public Inquiry Respecting Ground Search and Rescue for Lost and Missing Persons Report - <https://www.nlgsarinquiry.ca/files/11-30-2021-Final-Report-GSAR-Inquiry.pdf>

Currently, such a dataset and data platform does not exist. Rather, data is being generated and collected by all GSAR teams/chapters locally to various extents but is not being shared to a national level. There is no formalized national data collection standard, and SAR chapters have different levels of resourcing available to dedicate to data collection and data administration.

#### **4.2.1 GSAR Data: Current-State Poll**

The following concerns/statements were heard from E-Scan participants:

1. Local data is being collected by many teams/ chapters, albeit to different extents and in different formats.
2. 100% of surveyed GSAR groups indicated that they would like a national SAR data standard established.
3. 62.5% of surveyed GSAR groups indicated that they do not follow a data collection standard. The remainder said that in the absence of a national standard, they have created their own standard.
4. 37.5% of surveyed GSAR groups indicated that they have a written mandate to collect data, the remaining indicated that they do not have a written mandate.
5. 62.5% of surveyed GSAR groups indicated that they do not have a designated data entry person.
6. 75% of surveyed GSAR groups indicated that they do not have a data committee to oversee usage within their jurisdiction.
7. 87.5% of GSAR Associations feel that the GSAR is insufficiently supported by governments across Canada
8. In some provincial/ territorial systems, where all chapters contribute data to the provincial/ territorial system, a local chapter can only see its own data, and cannot benefit from the other chapters' data since the data is not aggregated and disseminated back to the full community.
9. Indigenous tie-in to the Incident Command System (ICS) is different than for non-indigenous chapters.
10. A glossary of GSAR terms for common reference by the GSAR community would be welcome.
11. Data collection needs to encompass the entire event including call out, response, and conclusion.

12. Lost Person Behaviour (LPB) is an important part of GSAR data.
13. Linking Canadian GSAR data to StatsCan data would provide value-added insights and patterns.
14. There is no clear way of tying air, maritime, and GSAR data together, even when all three are responding to a single incident.
15. GSAR chapters frequently do not know which SAR resources are available, across all levels/ jurisdictions.
16. Data needs to be aggregated and analyzed to be useful.
17. There is a need for national situational awareness.
18. Define the meaning of Search and Rescue and how it ties into the rest of the SAR community
19. Concerns about the effectiveness of GSARCC and its ability to influence GSAR across Canada.
20. Without standards and data insight, they are not able to conduct evidence-based decision-making.
21. Lack of national governance by which to create, implement, and maintain a national data standard.
22. Not all GSAR associations are able to monitor their data quality, because data is being collected inconsistently within their own jurisdiction.
23. Varying degrees of resourcing and knowledge available at regional levels for how to collect data effectively at the regional level. Data is being collected and tracked inconsistently between chapters.
24. Inconsistent and fluctuating funding levels for the GSAR programs across Canada.
25. Unclear roles and responsibilities within the entire spectrum of GSAR in Canada.

#### **4.2.2 SAR Knowledge Management System**

The SAR Knowledge Management System (SARKMS) was a project under NSS that was started in 2012 and completed in 2015.

The SARKMS provided a system of bringing SAR information from individual Canadian GSAR chapters into a single sharing network. The SARKMS included two components



– CISARIS (data collection component) and SARVUE (information management component, mapping interface).

The SARKMS is currently located within the National Emergency Management System (NEMS).<sup>16</sup> The intent of NEMS is to support a common approach to emergency management activities in Canada by creating an interactive and collaborative environment to facilitate, harmonize and improve coherence of emergency management activities. NEMS promotes the sharing of best practices, lessons learned, and information, among federal and provincial/territorial governments and with emergency management stakeholders. Its broader end goal is to increase disaster resilience across the country.

While the SARKMS currently resides within NEMS at this time, the project/system has not moved forward since its completion in 2015 and was not made available to the GSAR community for use. As part of the SARKMS, data sharing MOUs were signed with many of the provincial/ territorial SAR agencies, but not all these agreements were finalized. At this time, the CISARIS component of the SARKMS is no longer technologically compatible with NEMS and will be discontinued.

E-Scan participants identified the following issues and perceptions around the SARKMS:

1. Due to the priority changes within the federal government, the consistency, value, training, purpose, and information transfer of the project was lost.
2. The P/Ts did not come to fully understand and accept the SARKMS project. The federal government did not clearly communicate how the project was intended to function in detail. The Return on Investment for the P/T's was not made clear either.
3. The SARKMS became less of a prioritized discussion point at the national table.
4. Some P/Ts were ready to add data, while some were actively providing their data, but as the project became less of a focus the prospect of receiving and analyzing all SAR data became further away.
5. The SARKMS was not integrated into a national governance model. This meant that there was no one to analyze the incoming data and create reports and statistics.
6. The SARKMS was difficult to integrate into the SAR programs of local chapters. Local chapters felt they were being asked to do additional work without any benefit to them.

#### **4.2.3 SAR Data Linkages**

Some of the provincial/territorial AHJ's are tracking SAR data through either stand alone systems, or purchased data management systems, but most provinces and territories rely on the SAR associations to track the SAR data within their jurisdictions.

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<sup>16</sup> NEMS - <https://nems-sngu.hre-ehr.gc.ca/>

All the provincial or territorial SAR associations are tracking their data and are using a mix of D4H, EMwerx, Volunteer Rescue, and generic MS Access systems to collect data at regional levels.

SARVAC currently tracks data by receiving reports from Provincial SAR associations, the numbers of GSAR teams, searchers, search hours, and prevention hours. This information is then updated on their website at [www.sarvac.ca](http://www.sarvac.ca).

Parks Canada is currently using an Incident and Event Management System that has been developed within. It is used by the Visitor Safety and Compliance section to track events occurring across Canadian federal park jurisdictions. Data being tracked is both reactive and proactive, and has a direct impact on prevention, program justification, and evidence-based decision-making.

RCAF currently uses Search and Rescue Mission Management System (SMMS) while CASARA uses a newly implemented program called Training and Mission Management System (TMMS).

CCG has used SMMS for many years and is currently undergoing a large update to their system with a projected completion of the end of the fiscal year 2022.

RCMP is using their own system PROS and PRIME that is generally used for police work and captures some information that overlaps into the SAR community. This data can be pulled centrally, but there are no specific requirements or policy in place to do so.

OPP is currently using RMS Niche software for day-to-day police work and has developed additional reporting within that software to track SAR data similar to the International Search and Rescue Incident Database (ISRID) standard.

#### **4.2.4 Data Ownership**

One hundred percent of SAR groups indicated that they own their own data.

12.5% of these groups indicated that they would need their AHJ's permission before being able to/willing to share the data. The remaining groups assume the ownership of their data.

#### **4.2.5 Privacy**

Privacy considerations are pivotal when establishing a data collection system. Decisions on privacy can have legal implications, as well as ramifications for the level of trust that users are willing to put into the system. At this time, E-Scan participants indicated that they are not always certain what data privacy items need to be taken into consideration and how.

#### **4.2.6 Data Usage - Trust and Awareness**

As is typical, data sharing by an organization will to some degree offer a view into the organization's operations. That organization may at times have some level of concern about how its data will be used and how the organization may be viewed, compared, and scrutinized by others at a national level.

#### **4.2.7 IT Security Requirements**

A centralized data system intended to accept data from various groups and external IT networks requires an IT policy that supports some form of access by these external groups. Such a system also requires agile IT governance and protocols that allow for rapid and efficient response to changing IT infrastructure, hardware, and software needs. It has been indicated that such a system would need to remain in Canada for the data to be secure.

#### **4.2.8 International Search and Rescue Incident Database (ISRID)**

At the international level, dbS Productions maintains the International Search and Rescue Incident Database (ISRID).<sup>17</sup> The database and associated resources are popular and commonly referenced in the Canadian GSAR community, as they are the closest thing to an overarching available standard that currently exists. ISRID also acts as a depository for information to be gathered and analyzed to support search efforts when someone is lost based on previous or similar events.

While ISRID provides a glimpse of what a standard database platform can look like, it operates under a broader and international mandate, funded initially by a United States Department of Agriculture grant.<sup>18</sup> It therefore cannot meet the needs of the Canadian GSAR community for an active and agile centralized Canadian data collection. However, the popularity of ISRID speaks to the desire and willingness of the Canadian GSAR community to have an established standard. It also highlights the abilities of an independent agency, at arms-length from government, to establish such a crowd-sourced, voluntary system.

#### **4.2.9 Funding/ Sustainability**

At this time, GSAR does not have sustainable funding over the long-term, including for data collection efforts, and GSAR groups rely in part on ongoing local fundraising to maintain operations. It is difficult for chapters to implement a long-term and sustainable data collection strategy without a clear funding solution in place.

#### **4.2.10 Training**

E-Scan participants indicated that initial and ongoing training of chapter members in a centralized system (as well as training in their regional system) would be of utmost importance, to ensure full, accurate and sustainable data collection.

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<sup>17</sup> ISRID - [https://www.dbs-sar.com/SAR\\_Research/ISRID.htm](https://www.dbs-sar.com/SAR_Research/ISRID.htm)

<sup>18</sup> ISRID - [https://www.dbs-sar.com/SAR\\_Research/ISRID.htm](https://www.dbs-sar.com/SAR_Research/ISRID.htm)

#### 4.2.11 Additional National GSAR Context

1. PSC published a SARNIF evaluation report in October of 2020: Evaluation of the Search and Rescue New Initiatives Fund.<sup>19</sup> The report speaks to the place of GSAR in the national context -

- a. ‘What We Found’, point 1:

*‘However, while the SARNIF supports the priorities and response and prevention objectives associated with national SAR, there is no formally defined framework coordinating national SAR policy.’*

- b. ‘What We Found’, point 3:

*‘There is inconsistency in the collection and reporting of SAR related data across the country and there is no centralized or standardized accounting of search and rescue activities across Canada. [...] The unavailability of data limits a full picture of the existing capabilities and needs of search and rescue in Canada.’*

- c. ‘Recommendations’, point 2:

*‘The Assistant Deputy Minister of the Emergency Management and Programs Branch should: [...] 2. Explore ways to improve collection and sharing of project data to support national SAR policy and enhance knowledge management at the national level.’*

- d. ‘Background’ –

*‘The NSS, NSP and the SARNIF were located at the Department of National Defence until 2015 when they were transferred to Public Safety Canada. While the NSP continues to be associated with national SAR coordination, Public Safety is currently exploring options to develop a modernized and formalized framework for SAR in Canada.’*

- e. Section 2.2 ‘Limitations’ –

*‘There was a lack of data pertaining to SAR activities undertaken across Canada, creating challenges when assessing relevance and continued need.’*

- f. Section 3.1 ‘Relevance’ –

*‘Finding: The Search and Rescue New Initiatives Fund provides positive and necessary support for search and rescue capabilities across Canada,*

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<sup>19</sup> PSC, Evaluation of the Search and Rescue New Initiatives Fund - <https://www.publicsafety.gc.ca/cnt/rsracs/pblctns/2020-vltn-sarnif-fnirs/index-en.aspx>

*particularly in the area of ground SAR. However, data availability related to volunteer search and rescue activities across Canada is limited.'*

*'Assessment of continuing need was hindered by a lack of consistency in the collection and reporting of SAR-related data across the country which limits a full picture of the existing capabilities and needs of SAR in Canada. The 2013 Quadrennial Search and Rescue Review prepared by the NSS (DND) found that information on the rates and nature of SAR incidents varied considerably across jurisdictions and that there was "no centralized or standardized accounting of SAR across Canada." These concerns were echoed in the 2013 Spring Report of the Office of the Auditor General and the 2015 Final Report of the Evaluation of the SARNIF, conducted by DND which cited limitations in the SARNIF's data collection and knowledge management processes with respect to funded projects. There have been no noticeable improvements identified over the evaluation period.'*

g. 'Management Action Plan', Recommendation 2 –

*'Explore ways to improve collection and sharing of project data to support national SAR policy and enhance knowledge management at the national level.'*

2. DND produced a Departmental Performance Report (DPR) 2012-13 re: NSS.<sup>20</sup>  
This report also speaks to the place of GSAR in the national context -

a. Activities undertaken during fiscal year 2012-13 -

*'1. Enhancing National Ground Search and Rescue (SAR) Coordination and Results:*

*Formalize links between the Ground SAR Council of Canada (GSARCC) and the Federal/Provincial/Territorial emergency management framework, to leverage opportunities to collaborate and to advance key issues.*

*Performance Indicators*

- *An effectively and efficiently organized and administered GSAR Council;*
- *Formalize links between the Ground SAR Council of Canada and the federal/provincial/territorial emergency management framework, to leverage opportunities to collaborate and to advance key issues;*
- *Measurable progress on the implementation of GSAR Council annual and 5-Year plan; and,*
- *Smooth coordination between Federal/Provincial/Territorial (F/P/T) partners, including Public Safety, provincial/territorial*

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<sup>20</sup> <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/departmental-performance/2012-13/section-iv-national-search-and-rescue-secretariat.html>

*Emergency Management Organizations (EMO), Royal Canadian Mounted Police (RCMP), Parks Canada, and Search and Rescue Volunteer Association of Canada (SARVAC).*

### **Performance Analysis/Progress**

*During the fiscal year of 2012-13, the NSS continued to co-chair the GSARCC in conjunction with its co-chair, the Sûreté du Québec. GSARCC met twice (Fall 2012, Spring 2013) to continue to develop and strengthen the coordination of the Council, and to collaborate on key issues such as:*

- *Updating and revising Memorandum of Understanding among F/P/T partners;*
- *GSAR standardization across Canada, including Incident Command Systems;*
- *Protecting and supporting SAR volunteers;*
- *Establishing federal ownership for the coordination of ground SAR activities with provinces and territories;*
- *Seeking permanent funding for Search and Rescue Volunteer Association of Canada (SARVAC);*
- *Addressing occupational health and safety issues for volunteers; and,*
- *Contributing to decision-making tools at the tactical and strategic level through Canadian Inland Search and Rescue Information System (CISARIS), Search and Rescue Knowledge Management System (SARKMS) and other case management tools.*

*GSARCC continues to work with representatives from Senior Officials Responsible for Emergency Management (SOREM), however due to scheduling conflicts GSARCC, was unable to provide an update to SOREM in regards to Council activities and ground SAR volunteers. During FY 2012-13, GSARCC requested that SOREM clarify which federal department has responsibility for ground search and rescue in Canada. To date, GSARCC has not received a response. The NSS continues to work with SOREM and DND to provide this clarification to GSARCC.'*

3. In 2021, Commissioner James Igloliorte presented the report on the Public Inquiry Respecting Ground Search and Rescue for Lost and Missing Persons to the Government of Newfoundland and Labrador.<sup>21</sup> The inquiry included a review of how GSAR is integrated with broader SAR activities in the province –

- a. Jurisdiction, p. 5 –

*'While the subject of this Inquiry, ground search and rescue, is a matter within the jurisdiction of the Government of Newfoundland and Labrador, a number of the organizations involved with it, including but not limited to*

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<sup>21</sup> Public Inquiry Respecting Ground Search and Rescue for Lost and Missing Persons (NFLD & LAB) - <https://www.nlgsarinquiry.ca/>

*the RCMP and the Canadian Armed Forces (“CAF”), are agencies of the Government of Canada. Further, some search and rescue operations that take place within the Province of Newfoundland and Labrador, such as those within the federal parks and searches for downed or missing aircraft, engage issues of federal jurisdiction; and certain coastal waters are areas of overlapping provincial and federal jurisdiction (Exhibit P – 198).*

*It is settled law that a provincial inquiry cannot compel most agencies of the Government of Canada to produce documents; to appear before it; or to cooperate with it at all. It is difficult to imagine how this Inquiry could have accomplished much without the voluntary participation and cooperation of agencies of the Federal Government. Fortunately, such participation and cooperation were forthcoming.’*

b. Interoperability, p. 9 –

*‘While everyone understood the mandate of this Inquiry is limited to directing the Province and not the federal government, this field of search and rescue is occupied by both governments. There is a wish to see the Province continue its efforts to seek high level cooperation with their federal counterparts so that people do not feel interjurisdictional misunderstanding or excessive protocols hamper searches.’*

c. Federal Engagement, p. 132 –

*‘The Commissioner therefore recommends that the Government of Newfoundland and Labrador seek to arrive at an MOU with the Government of Canada so that NLSARA resources are made available to support such federal search and rescue operations on equal priority to their support of ground search and rescue operations.’*

d. Coastal Searches, p. 133 –

*‘The Commission heard evidence that there was uncertainty and confusion within those persons and agencies tasked with operating and conducting Ground Search and Rescue operations in coastal areas as to which resources are available for such searches and who would be responsible for conducting these searches. The Commission has also obtained a legal opinion, which concluded that “Canada’s constitution gives the Provincial and Federal Governments overlapping jurisdictions over coastal search and rescue in Newfoundland and Labrador.”*

*The Commissioner therefore recommends that the Government of Newfoundland and Labrador, in consultation with policing agencies and GSAR and MSAR agencies, seek to arrive at a MOU with the Government of Canada so that search and rescue operations in coastal regions are organized in an integrated and transparent manner.’*

## 5.0 CONCLUSION

While air and maritime SAR have a defined national and centralized governance structure, Canadian GSAR follows a decentralized governance model. While this decentralized model reflects the legal landscape of multiple GSAR players at various levels, it leaves gaps in the operations of GSAR teams.

In this decentralized model, the following needs of the GSAR community are not currently being met:

1. Availability of a sustainable national SAR data standard, data platform (database, access portal, training), and coordinating/ hosting body.
2. National coordination of data collection, with implementation of data aggregation, analysis, and dissemination into statistics, dashboards, and reporting.
3. Clear identification of who is overall responsible for SAR within jurisdictions across Canada.
4. Sustainable and predictable long-term funding for GSAR programs across Canada.
5. Clarity of privacy needs.
6. Clear understanding of liability.
7. Clear level of situational awareness on available SAR resources across the SAR community.
8. Clear understanding of how aeronautical, maritime, GSAR, First Nations, and police SAR can/ should interact and share information.

The above needs of the GSAR community fall into two primary themes that will be focused on in Year 2 of this project:

1. A lack of an overarching governance structure/ model that provides a sustainable direction and oversight contributing to a holistic national search and rescue program.
2. A lack of a flexible technology platform that provides three levels of support to GSAR which include SAR situational awareness, Lost Person Behavioural statistics, and SAR program management.

The desire and willingness to work towards the implementation of both a national centralized governance structure and a national DMS technology platform is present in both within the GSAR community and government responsible for SAR. The need to prepare, share, and use volunteer resources across jurisdictions continues to be a focus across governments and SAR Associations. This was identified due to the continued increase of efforts not just around SAR, but also in humanitarian aid.



As we focus on the developing a solution to these two themes, it is believed that the associated gaps will lesson as they will become more of a priority for the structure that is missing. We will have better situational awareness with regards to volunteers, and equipment; as well, enable the ability for evidence-based decision making giving the assurance of proper uses of resources and funding across Canada.

## 6.0 NEXT STEPS

Year 2 of this SARNIF project will be focused on developing sustainable strategies for increasing national collaboration and coordination among GSAR groups, as well as identifying the requirements for a national incident data collection system for GSAR.

CanOps will continue to bring the SAR community together at a national level and will maintain the momentum and desire of Advisory Group and other contributors to develop a solution for the gaps and challenges that have been identified in this E-Scan: (1) for a national SAR Incident Data Management System; and (2) national SAR governance model.

CanOps will continue to coordinate quarterly meetings with the Advisory Group where we will facilitate discussions to determine the best possible solutions to the suggested problems. We will bring new organizations into the discussions such as StatsCan, academia, and other contributors to explore new partnerships regarding data.

CanOps will provide outreach to national and international governments looking at the different ways SAR data is being tracked, aggregated, and analyzed to ensure that we come to a solution that is parallel or supersedes the current state of SAR in North America. We will also look at other organizations, committees, and agencies that have a similar need in the structure of and over-arching governance.

CanOps will ensure that the work that has been completed in the past regarding research, reports, surveys, and priorities development will be brought to the table for discussion to ensure that our solutions are in line with the current needs within Canada.

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