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Strengthening Search and Rescue in Nunavut: Approaches and Options

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The Challenge

In the Canadian Arctic, community-based Ground Search and Rescue (GSAR) teams, Canadian Coast Guard Auxiliary (CCGA) units, Marine SAR Societies, Civil Air Search and Rescue Association (CASARA) members, and the Canadian Rangers play essential roles in search and rescue (SAR). These groups constitute the foundation of Canada's Arctic SAR system, given the distances involved; the paucity of federal and territorial resources in the region; and their intimate knowledge of local geography, sea and ice conditions, potential challenges and risks, and their fellow community members. They face a daunting task: providing 24/7 response capabilities, 365 days a year in an austere and changing operating environment.

The results of the [Kitikmeot SAR Project](#) – a community-collaborative effort that seeks to identify and assess existing community-based SAR and emergency management capabilities in the communities of Kugluktuk, Cambridge Bay, Gjoa Haven, Taloyoak, and Kugaaruk – suggest that this task is getting more difficult.¹ The impacts of climate change and the loss of traditional skills (particularly amongst younger community members), coupled with the failure of some travelers to take the necessary fuel and equipment when on the land, and increased visitors to the region, has led to an increase in SAR cases in the Kitikmeot over the last two decades – similar to trends reported in other parts of Nunavut.²

Figure 1. Public SAR cases in the Kitikmeot by community. Nunavut Emergency Management, *Annual Reports 2015-2019*

| | 2015 | 2016 | 2017 | 2018 | 2019 |
|---------------|------|------|------|------|------|
| Cambridge Bay | 4 | 1 | 2 | 2 | 7 |
| Kugluktuk | 2 | 0 | 0 | 1 | 6 |
| Kugaaruk | 4 | 6 | 11 | 5 | 7 |
| Taloyoak | 17 | 11 | 14 | 11 | 27 |
| Gjoa Haven | 22 | 33 | 22 | 20 | 24 |
| Nunavut | 251 | 282 | 233 | 216 | 245 |

The number of public SAR cases (that involve Nunavut Emergency Management (NEM) or the federal Joint Rescue Coordination Centre based in Trenton, Ontario) in the region has remained consistently high over the last five years, particularly in Gjoa Haven and Taloyoak. Kitikmeot SAR Project participants point out, however, that these numbers do not account for community SAR members responding to private searches, breakdowns, and when people run out of fuel – which would make the numbers far higher.

Community responders involved in Arctic SAR draw upon a wide array of strengths to provide their life-saving service: dedication, intimate knowledge of the land and local environmental conditions, traditional and technical search skills, and effective leadership. The Kitikmeot SAR Project and previous studies on Northern SAR also highlight challenges facing these groups: an increasing case load, new and unpredictable outside activity, training gaps, equipment shortages, volunteer burnout, administrative troubles, difficulty coordinating, cooperating, and communicating across the community, territorial, federal levels, and slow response times from southern-based SAR assets.³

Enhancing Community SAR: Key Justifications

These long-standing challenges require further investment and fresh approaches, many of which must be tailored to Nunavut’s unique context. Kitikmeot SAR Project participants note that this kind of systemic reform requires Southern Canadian policymakers to understand unique regional challenges, accept the foundational role that SAR plays in northern society, and fund community-based capabilities accordingly. The justifications for greater investment in community-based SAR capabilities in Nunavut include:

- By supporting and facilitating on-the-land activities, SAR constitutes an essential building block of the physical, mental, social, and cultural health and well-being of Nunavummiut, of the territory's economy, and of the overall resilience of their communities;
- Federal and territorial assistance is often limited and distant compared to other jurisdictions, which makes local capabilities essential to improving response times and saving lives;
- Improving community-based SAR capabilities is in line with the public safety priorities outlined by the territorial government, Inuit organizations, and the federal government in its Arctic and Northern Policy Framework, which promises to “increase whole-of-society emergency management capabilities in Arctic and Northern communities”⁴;
- A strong SAR safety net is a prerequisite for many of the other priorities highlighted in the ANPF: harvesting activities, community-led food production projects, tourism, commercial fisheries, marine protected areas, and land-based cultural industries;
- By drawing in a wide array of community members, community organizations involved in SAR facilitate the intergenerational transfer of Inuit Qaujimagatuqangit and in skill development more generally (e.g. first aid and wilderness first aid);
- Community-based SAR organizations contribute to Canada's broader strategic objectives around enhancing SAR capabilities along the Northwest Passage;
- By empowering communities and ensuring a local response to outside activity that may require SAR services, community-based SAR organizations exercise Canada's Arctic sovereignty;
- If enhanced local capabilities can reduce the need for the deployment of federal assets from the South, they will save money.

In short, investing in solutions to myriad resource and capacity challenges facing community-based SAR organizations will not only improve response capabilities, but also support the broader objectives of the federal and territorial governments and Inuit associations.

SAR Solutions: Options for Consideration

What investments will best address the longstanding challenges facing Nunavut's community-based SAR organizations? Rather than focusing on the costly basing of military aircraft in a central Canadian Arctic location (which military analysts suggest will not inherently improve response times across this vast area and will bring limited economic benefits to Nunavummiut),⁵ we propose cost-effective, community-based SAR options that directly contribute to community health and well-being. They are reflective of a community resilience-building approach that emphasizes strengths and how these can be mobilized to reduce vulnerability and risk. One set of recommendations involves building off success and strengthening current programming. The second focuses on practical, pragmatic, and holistic solutions that have been proposed by or co-devised with community partners and are rooted in the unique context of Nunavut's communities.

Expanded inReach Program: In early 2020, Nunavut Emergency Management launched a new SAR program that “Nunavutized” the territory’s basic and coordinator search and rescue courses, focusing on the specific environmental and geographical characteristics of the territory and its communities. The new SAR courses include training on how to use Garmin inReach devices, which act as GPS, emergency beacon, and as a two-way communicator, allowing the user to send and receive text messages and emails – a pivotal function during a search. At the end of basic GSAR training, NEM provides each community team with one inReach device. We suggest that each team be provided four InReach devices, to supply four two-responder teams (to maximize their impact, units should be provided to community responders who serve in GSAR and the Coast Guard Auxiliary). The Garmin inReach Explorer+ is an expensive tool with the base unit priced at \$589.99 and a monthly subscription cost of \$79.95 (which provides unlimited texts, tracking points, and basic weather reports). The purchase of three new units (to combine with the one issued by NEM) for each of Nunavut’s 25 communities would cost \$44,249.25, with the monthly subscription for all devices coming in at \$7,995. While this represents a significant cost, such an investment would fit well with the Arctic and Northern Policy Framework promise to improve whole-of-society emergency response and SAR.



Over the past year, the KSAR project has run an inReach pilot program involving three devices provided to individuals active in ground and marine search and rescue in Gjoa Haven and Kugluktuk – and as one participant said the devices are real “SAR game changer.” This inReach data shows the tracks of a search party involved in the search for a missing hunting party outside Gjoa Haven between 9 and 11 June 2020. The flags mark the tracking points transmitted by the inReach device. During this period, this device sent and received over 100 coordinating and information sharing text messages.

Expansion and Improvement of the Canadian Coast Guard Auxiliary in the Arctic: Since 2016, the expansion of the Coast Guard Auxiliary (CCGA) has brought new equipment, training, and experience into many Arctic communities. Auxiliary units tap into in-depth local knowledge of the marine environment, develop new skills, and improve response times and effectiveness. Auxiliary members also play an important role as “SAR detectives.” In the North, the Joint Rescue Coordination Centre (JRCC) will not have the local knowledge or resources required to investigate a SAR case thoroughly. Through their familiarity with local conditions, marine spaces, and the marine activities of their fellow community members, members of the Auxiliary can play an important role gathering information – everything from the condition of a missing vessel, to the skill of its crew, to where they may have gone – and relaying it to the JRCC. Conversations with Kitikmeot stakeholders reinforce

that the Canadian Coast Guard should proceed with its plans to expand the Auxiliary, even if funding pressures related to COVID-19 reduce the budget envelope, and continue the heightened training tempo it has provided the last few years.

Whole of Society Preventative SAR: To reduce the strain on community-based SAR organizations, greater investment in preventative measures needs to focus on whole-of-society SAR education and technological solutions. All community members must learn and be reminded how to operate safely on the land, the dangers of going out unprepared, and how to respond appropriately when they get into trouble. While Community-based SAR organizations can deliver these messages using social media, at community events, at fundraising bingos, and during community training days, Kitikmeot SAR Project participants highlighted the benefits of providing youth and young adults with survival training and involving young people more directly in SAR operations and suggested doing so directly through the school curriculum. The territorial and federal governments should also invest in innovative technological solutions that reduce travel risks, such as [SMARTICE](#) or additional repeater towers.

SAR Equipment Usage Rate: Community responders rank concerns about equipment usage and lack of volunteers as amongst the highest challenges that they face. While some propose that the territorial or federal government should provide essential equipment and financial incentives to entice more recruits, others disagree, saying they would never trust an untested, random snowmachine or ATV selected and maintained by the territorial or federal government to mount a search. They trust their own equipment. Furthermore, responders worried that using financial incentives to recruit more volunteers could undermine the basis of the entire SAR system and other volunteer-based organizations in the North. [The Canadian Rangers model](#) could be used to address both equipment challenges and the incentivization of volunteers. During training and official taskings, the military compensates Rangers when they use their own small-engine equipment and vehicles according to a fixed Equipment Usage Rate (EUR). This arrangement encourages Rangers to invest in their own equipment and tools appropriate to their local environment. In the case of SAR teams, people using their personal equipment during authorized SAR training, exercises, and operations could receive SAR EUR funded by the federal government through Public Safety Canada. Such a program would recognize how people use their equipment for the public good – with all the wear and tear that this involves - and ensure that volunteers are not “out of pocket” for participation in SAR activities. Like the Rangers, community responders could use these funds to ensure that their equipment is ready to be used at a moment’s notice – a better solution than having government-owned machinery sitting in a sea container waiting for the next search. Although a SAR EUR for volunteers represents a significant departure from how SAR operations are conducted in Southern Canada, it represents a distinct and equitable solution suited to the unique context of Nunavut communities.

Community Public Safety Officers: While a SAR EUR model may facilitate investments in personally-owned, dependable equipment and more SAR volunteers, it will not address coordination and cooperation issues, administrative burdens, and leadership burnout facing community SAR groups. Reflecting on how to improve capabilities, community responders recommended a paid SAR coordinator position. Having a full-time SAR coordinator position in each community might be difficult sell to government agencies, however, when some communities only conduct a handful of searches each year. Accordingly, we propose developing a Community Public Safety Officer (CPSO) position that can function as SAR coordinator while carrying out other public safety and emergency management duties. A CPSO program would provide a platform through which to mobilize the existing strengths in a community, while providing the space for the development of new capabilities. Such a program could be modelled after the original Alaska Village Public Safety Officer (VPSO) program launched in 1979, which trained its community-based officers in SAR, boating and water safety, fire protection, and emergency medical services.⁶ In Nunavut, the duties of Community Public Safety Officers might focus primarily on marine safety, emergency preparedness, fire prevention, and, of course SAR, where they could be involved every aspect of the process: prevention, preparedness, response, and after-action activities, and, in particular, take on some of the administrative and leadership functions that demand so much from volunteers.

Developed in partnership with SAR experts in the Kitikmeot and guided by suggestions made by Nunavummiut during community-based consultations, these policy and programming ideas provide a potential roadmap for the further development of Nunavut’s whole-of-society SAR capabilities. While proposed with Nunavut in mind, we anticipate that these options and considerations will also apply to other regions in Inuit Nunangat. Although the implementation of some proposed initiatives (such as a SAR EUR model and a CPSO program) require additional funding and governance models, they fit with federal, territorial, and Indigenous government priorities that encompass not only public safety but economic development, community well-being, and local capacity building more broadly.

Notes

¹ Launched in early 2019, the community-collaborative Kitikmeot SAR or KSAR project seeks to identify and assess existing community-based SAR and emergency management capabilities in the communities of Kugluktuk, Cambridge Bay, Gjoa Haven, Taloyoak, and Kugaaruk. Between April 2019 and January 2020, our KSAR project used horizontal capacity-mapping and capability-based planning workshops at the community and regional level to identify existing local assets and resources and determine whether a community has the assets it requires to respond to the wide array of emergencies it might face. The Kitikmeot Roundtable on Search and Rescue (KRSAR), co-organized with Angulalik Pedersen, second in command of the Cambridge Bay Coast Guard Auxiliary, was held at the High Arctic Research Station

in January 2020. It brought together 55 members of community-based organizations from the five Kitikmeot communities, academics, and representatives of federal and territorial departments and agencies to discuss lessons learned and future requirements for search and rescue in the Kitikmeot region. For more information, please see <https://kitikmeotsar.ca/>.

² See Peter Kikkert, P. Whitney Lackenbauer, and Angulalik Pedersen, [*Kitikmeot Roundtable on Search and Rescue: Summary Report / Qitiqmiuni Katimatjutauyug Qinihiyinit Annaktinillu – Naunaitkutut*](#), Report from a workshop hosted at the Canadian High Arctic Research Station (CHARS) in Cambridge Bay, Nunavut, 31 January – 1 February 2020; Peter Kikkert, P. Whitney Lackenbauer, and Angulalik Pedersen, [*Kitikmeot Roundtable on SAR: General Report and Findings*](#), Report from a workshop hosted at the Canadian High Arctic Research Station (CHARS) in Cambridge Bay, Nunavut, 31 January – 1 February 2020; J.D. Ford and D.G. Clark, “Preparing for the impacts of climate change along Canada’s Arctic coast: The importance of search and rescue,” *Marine Policy* 108 (2019): 1-4; D.G. Clark and J.D. Ford, “Emergency response in a rapidly changing Arctic.,” *CMAJ* 189 (2017): 135-136; D.G. Clark, J.D. Ford, T. Tabish, “What role can unmanned aerial vehicles play in emergency response in the Arctic: a case study from Canada,” *PLoS One* 13 (12) (2018); D.G. Clark, J.D. Ford, L. Berrang-Ford, T. Pearce, W.A. Gough, S. Kowal, “The role of environmental factors in search and rescue incidents in Nunavut, Canada,” *Public Health* 137 (2016): 44–49.

³ See, for instance, Liane Benoit, [*Perspectives on Emergency Response in the Canadian Arctic: Sinking of the MS Arctic Sun in Cumberland Sound, Nunavut. Parts A, B, C*](#) (Toronto: Munk-Gordon Arctic Security Program, 2014); Munk-Gordon Arctic Security Program, [*National Roundtable on Arctic Emergency Preparedness: Report of Proceedings*](#) (Toronto: Munk-Gordon Arctic Security Program, 2014); Bernard Funston, “Emergency preparedness in Canada’s North: An examination of community capacity,” *Northern Public Affairs* (2014): 48-51; A. Østhagen, [*Utilising Local Capacities Maritime Emergency Response across the Arctic*](#) (University of Copenhagen: Centre for Military Studies, 2017); Senate Standing Committee on Fisheries and Oceans, [*When Every Minute Counts: Maritime Search and Rescue*](#) (2018); House of Commons Standing Committee on Foreign Affairs and International Development, [*Canada’s Sovereignty in the Arctic*](#), (2019). The Arctic Corridors Research project has also highlighted Kitikmeot community requirements around marine SAR. See N. Carter, J. Dawson, J. Knopp, J. Joyce, M. Weber, Z. Kochanowicz and O. Mussells, *Arctic Corridors and Northern Voices: Governing marine transportation in the Canadian Arctic (Cambridge Bay, Nunavut community report)* (Ottawa: University of Ottawa, 2018) and N. Carter, J. Dawson, J. Joyce, A. Ogilvie, *Arctic Corridors and Northern Voices: Governing marine transportation in the Canadian Arctic (Gjoa Haven, Nunavut community report)* (Ottawa: University of Ottawa, 2017) at <http://www.arcticcorridors.ca/reports/>.

⁴ See, for instance, Mary Simon, [*A New Shared Arctic Leadership Model*](#) (Ottawa: Crown-Indigenous Relations and Northern Affairs Canada, 2017); Inuit Circumpolar Council Canada (ICC), [*Submission to the Special Senate Committee on the Arctic Regarding the Arctic Policy Framework and International Priorities*](#) (2019); Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), [*Arctic and Northern Policy Framework*](#) (2019); and (CIRNAC), [*Arctic and Northern Policy Framework: Safety, Security, and Defence Chapter*](#) (2019).

⁵ Northerners and researchers frequently underscore slow response times from southern-based SAR air assets as a source of major concern. Some participants in the Kitikmeot Roundtable on SAR echoed this critique. While the solution may seem obvious – basing or pre-positioning more air assets in the Canadian Arctic – the comparative advantages of this option are not as clear as some pundits suggest. In response to calls that SAR aircraft be permanently stationed in the Arctic or forward deployed to the region during busy periods, Major-General William Seymour, Chief of Staff, Operations for Canadian Joint Operations Command, explained in 2018 how the tyranny of distance means that stationing a capability in the central Arctic ultimately leaves SAR responders “no better off” than the current setup with airframes based in Winnipeg or Trenton that deploy north depending on the location of the incident. “Statistics bear out that the optimal way to deal with search and rescue in the Arctic is to continue what we are doing,” he noted, given the inability to know in advance when and where a SAR incident will occur. Basing aircraft in the Arctic on a permanent or seasonal basis is costly, entailing new infrastructure as well as accommodations for crews, maintenance personnel, and their families. Given

that the CAF during Operation NANOOK and the Coast Guard during their annual deployments preposition assets in the Arctic every summer and that searches in the region represent a small overall percentage of Canada's overall requirements (e.g. in 2017, the 46 CAF search and rescue missions in the Arctic represented less than 1% of the total number of CAF SAR operations), the federal government argues that the country's limited aerial SAR assets remain optimally stationed at southern bases. See Major General William Seymour, "[Testimony to The Standing Senate Committee on Fisheries and Oceans, 10 May 2018](#)," and H. Mathisen, "[The Crisis Team: How Search and Rescue Works in Canada's Most Inhospitable Clime](#)," *Up Here* (2017).

⁶ The Alaskan VPSO model slowly changed over time as the program focused on law enforcement functions, which may not be applicable across the Territorial North. The VPSO program has also attracted the attention of Canadian First Nations, and the Kwanlin Dün First Nation and Selkirk First Nation have recently launched a VPSO-type program in Yukon. Unarmed Community Safety Officers patrol their communities, mediate disputes between citizens, and act as intermediaries between the RCMP and citizens.