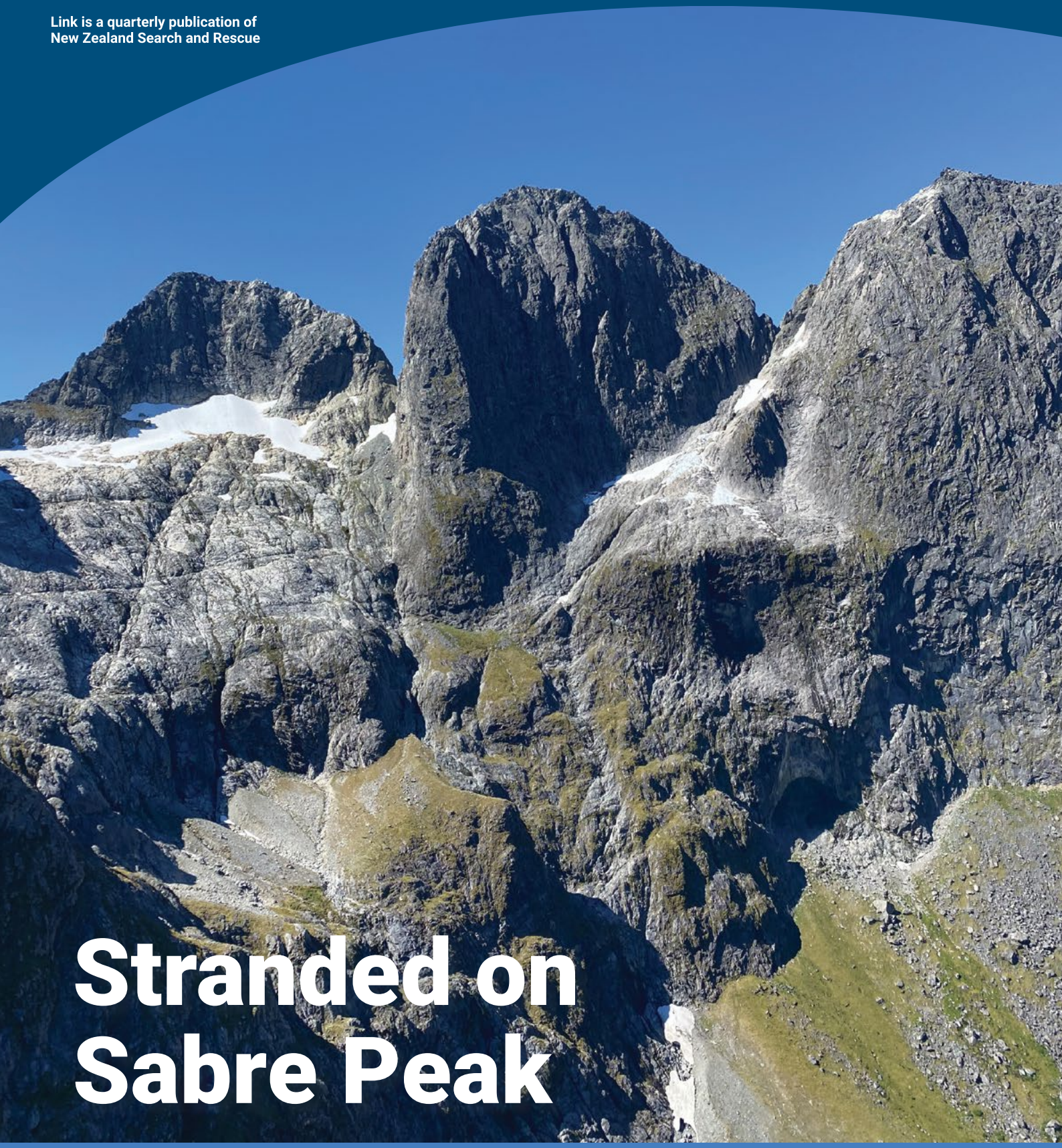
Issue 64: September 2023

Link

Connecting the search and rescue sector

Link is a quarterly publication of
New Zealand Search and Rescue



Stranded on Sabre Peak

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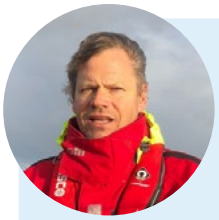


Andy's desk

Kia ora koutou

Duncan has headed overseas, so I'm pleased to be updating you on what we've been working on recently.

Over the last few months, I've been accompanying Inspector Craig Rendel from Police Headquarters on visits to the Police districts, discussing search and rescue issues. Together with Carl McOnie, CEO of Land Search and Rescue, and Dave Grace, Team Leader of the Police District Assistant SAR Coordinators, the meetings have been a great chance to catch up face-to-face and hear directly from those who look after the searches and rescues in the districts.

We recently had the first activity of Exercise Whakarauora Tangata on 26 July in the Bay of Plenty. Consulting, planning and preparing for this exercise series has been a huge amount of work, and it is exciting to see that work come to fruition. Over the next year, these activities will be taking place in various locations, and in many forms, helping the sector improve our readiness to respond to a nationally significant SAR incident.

The recent claims around satellite connected mobile phone technologies have led to a wide array of attitudes within the public. Although these technologies will enable many improvements to operational effectiveness, we are keeping close tabs on the potential for adverse consequences due to public misconceptions. We have been liaising with some of the telecommunications providers to try to ensure the information they give their customers is clear about the capabilities as well as the limitations of this technology.

We have been working with our partners to develop a telecommunications strategy for search and rescue in New Zealand. The purpose of the strategy is to provide direction for our telecommunications network to support the operational capability of the search and rescue sector. The draft strategy will shortly be presented to the SAR Telecommunications Working Group (STWG), which includes delegates from agencies across the sector. The STWG will give input into the strategy, which will then be presented to the NZSAR Council for its endorsement.

An ongoing body of work has been understanding the sometimes-overlapping health and safety duties of the SAR coordinating authorities and the non-governmental organisations who provide the bulk of the people during SAR operations. There's much more to do, but we're pleased to be making progress in this area.

As you're probably aware, the P-8A Poseidon is now available for search and rescue operations. While it was sad to say goodbye to the mighty P-3K2 Orion, it is exciting to see new aircraft operating within New Zealand and our search and rescue region.

Keep well and active.

Ngā mihi
Andy Greig
Principal Advisor
NZSAR Secretariat

COVER IMAGE
Sabre Peak, the scene of the SAR Insights article for this issue. Courtesy Jono Gillan

Tāmaki Makaurau Police Maritime Unit

Located alongside several key SAR partners at the Marine Rescue Centre at Mechanics Bay, the Tāmaki Makaurau Police Maritime Unit coordinates and contributes to water-based SAR operations in the region.

"We're fortunate to have a relatively unique situation," says Senior Sergeant Garry Larsen, officer in charge of the unit. "Being co-located with partner SAR agencies such as Coastguard and Surf Life Saving means we have very strong relationships, which enable us to collaborate effectively.

"The police team of 20 officers is structured into four sections, who provide on-water SAR capability as well as being the Incident Controllers for water-based Cat I SAR operations. "When there's a boat missing or in distress, an officer will usually go up to the Coastguard radio and operations room and make that the incident control point," says Garry. "From there, we assess the conditions and situations, plan the operation and deploy the right assets for the task. That could be a Coastguard Rescue Vessel, Surf Life Saving NZ rigid hull inflatable boat (RHIB), the Police Eagle helicopter or one of our maritime unit vessels. At other times, we are involved in Cat II SAR operations, which are coordinated by the Rescue Coordination Centre New Zealand."

In severe conditions, such as Cyclone Gabrielle, they can deploy the maritime unit's Deodar III. During the cyclone, the 18.5-metre launch travelled as far as Little Barrier Island. In eight-metre swells and 80 knot winds, her crew searched for a drifting and damaged catamaran. Deodar III also has a long-range capability. "Our normal operational area is the greater Hauraki Gulf and Firth of Thames, but we've been asked to respond to incidents as far north as the Three Kings Islands. To the south, we deployed to Whakaari / White Island to provide site security after the tragic events of the 2019 eruption. There, we also helped recover the deceased alongside the New Zealand Defence Force, the Police National Dive Squad and Police National Disaster Victim Identification team."

"Ensuring agencies from outside the district are aware of our capabilities is important. We're very open to have them visit, to see what we can do, so they can request our help if the situation warrants it. The same goes for our staff. They are experts in maritime SAR operations, who can assist out of the district if needed."

The unit has two 12-metre RHIBs, one on a trailer ready for deployment anywhere in the country. The other is berthed at the Maritime Rescue Centre, ready for rapid response tasks when the sea-state is moderate.

A 4.5-metre RHIB is used to support the Police National Dive Squad during search tasks, as well as SAR work in locations that can't be accessed in the larger vessels. "Our smaller RHIB was used extensively during the Auckland Anniversary weekend weather event, searching flooded neighbourhoods and rescuing many people from their homes. Our team did an exceptional job saving lives."

During the same weather event, the unit's personal water craft (jet ski) operated alongside a Fire and Emergency NZ (FENZ) jet ski, searching a shallow river corridor. "We often train with FENZ for other roles, but this was the first time we'd worked in tandem on a jet ski search task," says Garry. "The strong relationships meant we were able to work together really well during that operation."

Prevention is another key SAR role, with Police staff promoting safety messaging to boaties during routine patrols. Outside of SAR work, the unit carries out a wide range of policing activities, water safety operations and provides support to other government agencies.

Overall, the success of the unit comes back to relationships. "The better the relationships we have with all our partners, the better we can respond to whatever incidents arise. Everyone at the Marine Rescue Centre is here for the same purpose, and there's a real power in having us all located together."

TOP
Tamaki Makaurau Auckland Police Maritime Unit. Supplied

Stranded on Sabre

Sabre Peak is a classic alpine rock-climbing objective, located among the sheer diorite walls of the Darran Mountains in Fiordland. In February 2022, a pair of climbers had summited, but as they began to abseil down, their rope became stuck, stranding them on a small ledge.

The following morning, the climbers activated their Satellite Emergency Notification Device, and the Rescue Coordination Centre New Zealand tasked the Wakatipu Alpine Cliff Rescue (ACR) Team and Southern Lakes Helicopters to respond.

It was a clear day, but quite windy. As the rescuers flew a reconnaissance, they realised the climbers weren't attached to the mountain. This presented a real risk of the climbers being affected by the combined wind and helicopter down-wash. Landing in the basin below, the team formulated their plans and prepared for the operation. Jono Gillan was the ACR team leader that day. "This was my first operation back as a volunteer, after time spent in a role with the Aoraki Mount Cook Alpine Rescue Team (AMCART)," says Jono. This situation had many similarities to the operations around Aoraki, using a helicopter and longline to rescue people from a sheer cliff with more than 500m of exposure below, so he was able to apply his experience on that windy day.

Using a 200-foot long-line to maintain separation from the cliff and reduce down-draft on the climbers, Jono was flown directly to their small ledge. Initially building an anchor to connect everyone to the mountain, he coordinated the rescue as each climber was recovered by an ACR member, using a tethered belay technique. "When using this technique, the personnel are briefly attached to both the helicopter's longline and the mountain." Jono continues to explain; "During that short moment of transition, if the helicopter can't maintain its position, the belayer needs to release them immediately from the mountain to prevent a catastrophe."

Five hours after the responders were tasked, both climbers were rescued and all the ACR personnel were off the mountain. After the operation, members of AMCART were invited down to Queenstown to conduct some mutual training on these complex techniques. "Using a helicopter in an alpine rescue is an extremely high-risk operation," says Jono. "Post-COVID, the ACR teams around Wānaka and Queenstown have been doing more operations similar to those at Aoraki. Spending the time to train together helps ensure our capability is maintained and standardised across the board."

It also helps the subject matter experts keep up with new techniques and equipment. "The Europeans are among the busiest alpine rescuers in the world. They've developed specialist hardware such as the PETZL Lezard, which performs the function of a tethered belay [as used in this rescue on Sabre Peak]. Collaboration gives us the chance to discuss these innovations, and begin the proper process to consider them for use in New Zealand SAR work."

"We're also grateful to the helicopter operators who've been really supportive of more training and collaboration, particularly in winching and long-line techniques. Standardisation across all teams and agencies means together, we have more flexibility to respond to alpine incidents, with a greater margin of safety."

Insight summaries

- **Collaborative training between groups and agencies promotes standardisation.**
- **Standardisation improves flexibility, efficiency and safety.**
- **Regular contact through collaboration keeps personnel in touch with innovations which could improve SAR outcomes.**

LEFT
Briefing for the operation near Lake Adelaide. The position of the stranded climbers is indicated by the yellow circle. Courtesy Jono Gillan

RIGHT
A sense of exposure, beneath a 200' longline in the Darran Mountains. Courtesy Jono Gillan

New Zealand SAR Incident Management Systems

Analysis of current systems and recommendations for future interoperability.

Matthew Wheble, Kaitohutohu Matua - Senior Advisor at the NZSAR Secretariat is leading a project to improve the information technology-level interoperability within the sector. Matthew commissioned an analysis of SAR incident management technology systems which was completed in February this year. The report identifies no fewer than 65 different platforms and supporting applications in current use. This poses risks including data security, operational effectiveness and the health and safety of field teams. "We knew there were a range of systems operating," says Matthew, "but the large number highlighted the complexity of the project ahead of us."

The Rescue Coordination Centre New Zealand currently operates a fit-for-purpose system for Category II SAROPS, but there is no centrally coordinated system for Category I SAROPS. The NZSAR Council has endorsed the recommendation to start a project to determine the current and future requirements as well as the feasibility of a single Incident Management System. "The aim is to find the best solution for the sector, to reduce the risks we're facing with the current array of systems," says Matthew. "We're very pleased to have strong support from the sector, as we start down the long road ahead."

For queries regarding this project, in the first instance please contact the NZSAR Innovation in Technology forum representative for your agency.

Or contact Matthew Wheble, m.wheble@nzsar.govt.nz

The 9 April 2023 report, New Zealand Search & Rescue Incident Management Systems: Analysis of current systems and recommendations for future is available on nzsar.govt.nz/sar-system-support/sar-research/

Aotearoa New Zealand Search and Rescue Sector Carbon Emissions Report

Setting a baseline for the sector's emissions and examining options for emission reduction.

In 2021, the New Zealand Search and Rescue Council agreed that an assessment of the sector's carbon footprint should take place. This assessment began with the four SAR Non-Governmental Organisations (NGOs).

Many SAR volunteers in Aotearoa New Zealand are increasingly concerned about sustainability issues and expect their volunteer organisations to demonstrate high levels of corporate responsibility. The NZSAR Secretariat has supported each SAR NGO to measure their carbon emissions and to develop environmental sustainability strategies to reduce these emissions, within the context of their time and life-critical operational environment.

The Aotearoa New Zealand Search and Rescue Sector Carbon Emissions Report baselines the SAR sector's greenhouse gas emissions. The total emissions were 4,686 tonnes of carbon dioxide equivalent (tCO_2e), between 1 July 2021 and 30 June 2022. These include SAR-related emissions from the four SAR NGOs, New Zealand Police, the New Zealand Defence Force, Maritime New Zealand, and the NZSAR Secretariat.

The importance of helicopters, boats and vehicles to SAR operations means there is little room to reduce emissions in the near future and there is no desire to limit SAR responses from an emissions perspective. Likewise, a robust SAR sector requires face-to-face training, some of which requires air travel. However, longer-term opportunities such as advances in aviation power sources and superior location technologies could make it easier to reduce emissions.

The NZSAR Secretariat will measure the sector's emissions again this year. We will continue supporting SAR organisations across the sector to manage and, where possible, reduce their emissions.

Read the "Aotearoa New Zealand Search and Rescue Sector Carbon Emissions Report 1 July 2021 – 30 June 2022" at nzsar.govt.nz/sar-system-support/sar-research/

Nominations for the 2023 NZSAR Awards are open

All the information about the awards and nomination forms are available on our website nzsar.govt.nz/awards

Nominations close 31 January 2024, and early nomination is appreciated. If you are unsure about the process, or require help drafting the supporting text, assistance is available from the NZSAR Secretariat. Contact info@nzsar.govt.nz

Cave Search and Rescue

Volunteers responding to incidents underground.

The New Zealand Speleological Society (NZSS) is the national body for recreational caving, and since 1990, they have conducted a Deep Cave search and rescue exercise (SAREX) every three years. The 2023 Deep Cave SAREX was held over 10-12 March 2023, in Bulmer Cave; a complex of over 75 kilometres of passages, up to 750 metres beneath the surface of Mt Owen. Over 90 people participated, including six cavers from Australia. Cavers from the NZSS, plus personnel from the New Zealand Police, Land Search and Rescue, Fire and Emergency NZ, and two Squirrel helicopters from Murchison Heli Tours were involved.

"A rule of thumb is that it takes 10 times as long to move a patient in a stretcher, as it would for a single caver to move the same distance," says Paul Rowe, a cave search and rescue (CaveSAR) volunteer. Stretchers are carried, pushed and pulled through constrictions, and frequently travel on technical rope pathways. Complicated geometry for rope hauling, traversing and lowering demands high levels of skill and training, plus careful planning, leadership and teamwork on-site.

Coordination with the surface and between sites in the cave is complex too. Radios only work in line of sight, so special devices called Michiephones are used. When needed, these are alligator-clipped to a long single wire laid through the cave passage. Like an old telephone, a Michiephone can transmit down that wire to all the other Michiephones that are clipped in.

In addition to the road-end operations base, an advance camp with communications and catering was established at Lake Bulmer, a 45-minute walk from the cave entrance. At the entrance, CaveSAR volunteers and Police SAR squad members assisted with checking cavers in and out. Down in the cave's consistent four-degree Celsius chill, 'hot spots' were established with warm drinks and food for rescuers.

The second-ever Sump Rescue SAREX was held at Takaka Spittle Springs, over 14-15 January 2023. A sump is where water reaches the roof of a cave passage, which could range from a section a few metres long to a flooded cave network requiring specialist cave dive skills. "There are only a few people with the cave diving experience and skills to participate in this type of search and rescue," says Kip Mandeno, a member of the sump rescue team. "So establishing and re-visiting our rescue procedures is essential for the day we might have to respond."

On Saturday, Dr Richard Harris, a key member of the cave diver rescue team in the Thai caves incident, provided training to the participants. Also, online lectures were presented by overseas experts with cave diving rescue experience. On Sunday, a SAREX scenario involved two missing cavers trapped by flooding.

John Patterson, the NZSS President, is delighted with the recent signing of a memorandum of understanding (MOU) with the Australian Speleological Federation, representing the Australian Cave Rescue (ACR) commission. The MOU aims enhance the cave rescue capability of the two organisations regarding training and operations. Specifically, this recognises the specialist competency New Zealand has in deep cave rescues and the specialist competency Australia has in rescues which require diving through water. "Land Search and Rescue's ongoing support of this MOU is very much appreciated," says John.

The NZSAR Secretariat acknowledges the tragic loss of life at Abbey Caves, near Whangarei early in 2023. We extend our sincere condolences to the whānau, communities and responders involved. Volunteers from CaveSAR were involved in responding to this incident, reinforcing the importance of financially supporting the training they undergo.

ABOVE
2023 Deep Cave SAREX. Courtesy Gavin Holden

Surf Life Saving NZ Volunteer Strategy

In July 2023, Surf Life Saving New Zealand (SLSNZ) approved its Volunteer Strategy. This marked the midpoint in a three-year journey to increase the long-term resilience of volunteerism in the organisation, by better understanding its members and ensuring their needs are met.

The NZSAR Secretariat commissioned the Volunteer Study 2019, which updated previous research and gave a better picture of the volunteer workforce across the SAR non-governmental organisations (NGOs). "The report also provided insights about international trends in volunteering," says Chris Emmett, Chief Operations Officer of SLSNZ. "The message was clear; there are some headwinds coming and you'd better start preparing now."

The Volunteer Study 2019 provided insights into member attitudes, concerns and demographics, but SLSNZ wanted to delve deeper. "Our organisation is very diverse from an age point of view, with significant proportions of teenage volunteers, right through those in their 70's," says Chris, who has led the work on the Volunteer Strategy project. "These demographics are engaged across six key role groups, each with their own particular context. We needed more detail in the next survey to be able to provide tailored strategies for everyone."

Chris convened a diverse working group of subject matter experts, who worked for 18 months analysing the available data, and preparing for the upcoming 2022 Volunteer Engagement Survey that was commissioned by NZSAR. "As well as collaborating with the other SAR NGOs for the core volunteering questions, we engineered our survey architecture so we could cross reference the responses with our own previous internal surveys, as well as get insights from each of the role groups."

Some of the initial insights kick-started projects that were urgently needed. "After seeing a 40% satisfaction rating for our member wellbeing functions, we quickly prioritised the development of a new and comprehensive system," says Chris. "One year later, satisfaction ratings for wellbeing support were up at 90%, the biggest improvement in any area, for any project we've done in recent years."

The working group identified one key strategic pillar which underpins everything else. "This is the concept of Relationships (Whanaungatanga). It's a sense of kinship and connection gained through shared experiences and working together, which provides our people with a sense of belonging. This is central to the health of our volunteer organisation and is the most important aspect to get right," says Chris.

As well as providing centrally funded and led initiatives, the strategy provides guidance to help each Surf Life Saving club reflect and improve on aspects within the other pillars of Wellbeing (Hauora), Respect (Mana), Growth (Tipu) and Support (Awhi).

"Our mindset has also changed towards a partnership approach with our member clubs. This allows us to provide a much better targeted support where needed," says Chris. "Without each other, we can't achieve what we do, and it signals strongly that we expect and welcome open feedback." The draft strategy was socialised across the country, capturing views from the clubs which may have been overlooked. "A clear priority from many of our clubs is for SLSNZ to take more of a lead in sharing best practice across the organisation," says Chris.

Other key projects, either ongoing or planned, include a comprehensive review of the awards and honours system, developing cultural capability, supporting women through the Wāhine on Water program, a succession planning project and a deep dive into the factors and solutions for volunteer burnout.

"This has been a very considered and deliberate journey," says Chris. "We now have a robust strategy and framework, that allows us to be agile, with clearly defined projects to directly address the challenges we face. Working in partnership with our clubs and our volunteers, we're confident of significantly improving the volunteer experience of all our people and further strengthening the resilience of our organisation into the future."

The strategy, plus supporting survey results and insights can be viewed on the www.surflifesaving.org.nz website by searching 'strategy' or directly at www.surflifesaving.org.nz/club-management/member-consultation/volunteer-strategy-survey

Youth Search and Rescue

Welcome to our sector's newest Service Level Agreement partner.

With over 90 percent of those involved with SAR being unpaid volunteers, the recruitment, development, and retention of those volunteers is crucial for an effective and robust SAR sector.

Youth Search and Rescue (YSAR) was formally established in 2009, with the purpose of training the next generation of SAR responders and emergency management volunteers. From 1 July 2023, YSAR and the New Zealand Search and Rescue Council entered into a Service Level Agreement for funding. The investment enables YSAR to build systems and processes that will support new branches being opened across New Zealand.

"We've grown steadily since we began, but the next four years will be our biggest growth period," says Steve Campbell, YSAR CEO. "This investment by Government is crucial to achieving that plan."

YSAR delivers a three-year programme to high school students, within a safety management system audited by AdventureMark. During the first year, the training is focused on foundational bushcraft skills, but there is also an emphasis of cross-sector engagement. For example, students visit local Coastguard units and Police SAR squads, plus gain qualifications in marine VHF radio operation. The second year introduces emergency management skills, including geographic information systems, and students train to sit their Coastguard 'Day Skipper' ticket. By the third year, students are completing Coordinated Incident Management System (CIMS) courses and are responsible for running weekend YSAR SAR exercises.

"We're delighted that the NZSAR Council sees the long-term opportunities for YSAR to benefit the sector," says Steve. "Students arrive at age 14 or 15, complete the three-year programme and then often head off to university or apprenticeships. By the time they are in their mid-twenties, we find many are coming back and looking to get involved in the SAR sector as long-term volunteers. So, it takes five to 10 years for the sector to benefit from what we are doing today."

As well as learning core SAR skills, an important theme is innovation and technology relating to the sector. As a member of the NZSAR Secretariat's Innovation in Technology Forum, Steve can share concepts from across the sector with YSAR students. "The students develop their own ideas to use emerging technologies for SAR purposes and run their own research projects. On a case-by-case basis, we support those projects using local funding sources, which are open only to youth organisations. This helps our students run meaningful research projects without creating any funding competition with the SAR sector."

One of YSAR's key goals for the next 12 months is relationship building with local SAR sector units, branches, and groups. "We want to engage meaningfully and trust that we can demonstrate how we can work together to ensure the long-term sustainability of the volunteer workforce," says Steve. "Our students view operational SAR volunteers as their heroes and are eager to learn from them. Plus, SAR volunteers passing on their hard-won experience to the next generation can only add to their proud legacy of contribution."

Steve thinks YSAR tends to attract genuine and motivated young people. "The majority of our students give me hope for the future of society. They are motivated, intelligent, community-minded and care deeply about helping others. They are an inspiration to work with; we hope volunteers from the SAR sector will see that too when the time comes to let a young person or two tag along on a SAR exercise or training evening."

Visit ysar.org.nz to learn more about Youth Search and Rescue.

Bouncing back from severe weather damage

Overwhelming support from all corners of the community enabled Coastguard Titirangi to return to operations just five months after a landslide wiped out their base and damaged their rescue vessel.

Thankfully no one was injured during the landslide, which happened at the start of the Auckland Anniversary weekend severe weather event. A little over a week after the storm ended, a massive clean-up was completed by volunteers, community groups and emergency services. Their first priority was to ensure the site was safe, then to salvage the unit's rescue vessel *LensesOnline Rescue* and equipment stored at the base. After proudly serving as the unit's home base for 45 years, the wreckage was finally demolished, ready to be cleared when safe.

Although the base was gone, the will of all those who valued the Coastguard's service to the communities across the Manukau Harbour was stronger than ever. And at each stage of the recovery process, the collaboration by all involved was exemplary.

Coastguard Titirangi President Maarten van der Zeyden said he and his fellow volunteers were overwhelmed by the quick offers of support from the local community, as well as from other Coastguard units keen to help their volunteers on the long road ahead.

Similarly, Coastguard New Zealand stood with them from day one. "As one of Coastguard's three units based on the Manukau Harbour [alongside Papakura and Waiuku], Titirangi plays a vital role in many search and rescue operations," said Callum Gillespie, Chief Executive Officer of Coastguard NZ. "We are committed to doing everything we can to get the unit back on its feet and out on the water saving more lives."

Repairs to the cabin top, mast and radar of *LensesOnline Rescue* were completed and the vessel was back on the water in early June, thanks to the quick actions of the insurance loss adjuster, Coastguard NZ, the Titirangi volunteers, the engineers at Fishing Boats NZ and the marine surveyor.

Facilities at the French Bay Yacht club and the Marine Rescue Centre on the Waitematā Harbour were made available, to keep up-to-date with training requirements and keep unit meetings happening. Similarly, Coastguard Auckland and Coastguard Papakura offered crew space on their vessels to keep the Titirangi volunteers current on the water. Meanwhile the unit's wide range of local supporters and community partners chipped in with donations, messages of solidarity and offers of help.

As the vessel was being repaired, the unit signed a lease with Eke Panuku Development Auckland, for a temporary home at the Onehunga Wharf. In early June, they moved into this base and returned to conducting operations. On one of the first weekends back in action, volunteers responded to two incidents. First helping a boatie in the Wairopa Channel who had run out of fuel and then another in the harbour with a flat battery, towing both to the Mangere boat ramp.

The long-term future of the French Bay site is uncertain, but Coastguard is committed to ensuring the debris is removed, and hopes to eventually return to the area.

"The past few months have been demanding for our small unit, but the outpouring of support from the community has been truly heart-warming," says Maarten. "Considering the challenges faced by our volunteers over the past five months, this turnaround time is quite remarkable and testament to our fantastic network of community supporters."

With permission, this article was adapted and developed from a series of stories on the Coastguard.nz website.

TOP
Coastguard Titirangi's base was ruined by a slip in January. Courtesy Coastguard NZ

Satellite connected cell phones

Monitoring the risks and opportunities for search and rescue in New Zealand.

The New Zealand Search and Rescue Secretariat's Innovation in Technolgy forum has been closely watching the rapid development of these technologies, which have been operating in various forms around the world since September 2021. Matthew Wheble, Senior Advisor – Kaitohutohu Matua at the Secretariat, is the convenor of the forum. "There are many exciting opportunities for the SAR sector and for public safety, but also there are risks as the technology is adopted and matures," says Matthew. "It is important that the SAR sector is involved in public education messaging, and that we proactively address any risks as they arise."

Regarding the technology itself, there are two broad models of connectivity:

Unmodified phones. Existing phones connecting with text and eventually data, to powerful newly-established satellite networks.

Modified phones. Next generation phones with specialised hardware, connecting to existing satellite networks to provide location sharing and two-way emergency text messaging.

In New Zealand, telecommunications company One NZ is partnering with satellite provider Starlink using the unmodified model. Their competitor, 2Degrees, has announced a trial with Lynk Global. At the time of writing, the other main mobile company, Spark, had not announced which satellite provider they would be working with. Companies pursuing the unmodified model are initially promising text messaging, with voice, data and broadband on the near horizon.

The Apple iPhone 14 uses the modified model, announcing satellite connectivity for emergency alert messaging and tracking functions on 15 May this year. Phone microchip manufacturer Qualcomm and satellite network provider Iridium have partnered to launch a similar functionality for the next generation Android phones, scheduled for the second half of 2023. Companies pursuing the modified model are essentially embedding the function of an existing Satellite Emergency Notification Device (SEND – e.g. Garmin InReach or SPOT) into a phone.

"As technology improves, the ability to communicate via satellite connected phones will lead to fewer situations where a person who is lost or in distress is unable to ask for help," says Matthew. "Likewise, improved connectivity between SAR assets and incident management teams is sure to benefit effectiveness during operations."

However, there are risks that some may place an over-reliance on this new technology until the real-world capabilities and limitations are widely understood. An example of such a limitation is the requirement for line of sight between the phone and the satellite; something which is not always achievable in rugged terrain. Also, the limitations of the phones themselves are often overlooked. These include worse battery life, less ruggedisation and more complex user interface when compared with contemporary distress beacons. For these reasons, satellite connected phones should be considered an added safety measure, rather than a replacement for a distress beacon.

At the SAR sector interface, more commercial intermediaries between persons at risk and SAR coordinating authorities raises implications around trusted contact data sharing and reliable handover processes. Likewise, more people with better access to an alerting device could result in more requests for assistance and higher workloads on emergency services.

More broadly, we have seen how the SAR sector is becoming increasingly involved during civil emergencies. Having direct phone to satellite connectivity in the future should provide additional communications resilience during these events, but if everyone tries to message at once, will the system be able to cope?

Overall, if the systems work as the manufacturers claim, this technology could provide a significant boost to public safety. As the technology beds in, the NZSAR Secretariat will continue to support public education and SAR prevention messaging to address these issues, as well as facilitate collaboration between our sector and the technology providers.

TOP
Satellite connected phones should be considered an added safety measure, rather than a replacement for a distress beacon. Courtesy Dan Clearwater

Training the Australian Antarctic Division

Each year, Land Search and Rescue delivers a five-day rope rescue course to the field training officers of the Australian Antarctic Division. Held in Coles Bay, Tasmania, the course continues a long collaboration with the Australians who work on the ice.

This partnership dates back to 2006 when the Search and Rescue Institute of NZ (SARINZ) was invited to facilitate SAR training for the New Zealand and United States members of Antarctica's Joint Search and Rescue Team. The Australians heard about the training, and asked to be involved.

"The New Zealand SAR sector had more people with a deeper experience in alpine rescue operations," says Grant Prattley, the Land Search and Rescue instructor at the most recent rope rescue course. "It made sense to help train the Aussies, and it has been a positive collaboration ever since."

The course is part of a comprehensive training program for the Australian Antarctic Division. Over the years, Land Search and Rescue has facilitated a series of bespoke manuals, technical testing and instruction to support that program.

These days, the training is delivered by Land Search and Rescue, and covers both technical rope rescue and leadership of rescue teams. "Over winter, these field training officers could be the only people with a strong alpine rescue background available to respond," says Grant. "They might find themselves leading a team of electricians, scientists and plumbers, so we put a lot of emphasis on standard briefings, clear leadership and rope rescue techniques which are as simple as possible."

The Antarctic Search and Rescue Response Plan in action

Three National Antarctic Programmes successfully worked together last summer season to deliver an unwell crew member to safety.

The trouble started when a New Zealand-flagged fishing vessel, in the Southern Ocean fishing for toothfish, reached out to the Rescue Coordination Centre New Zealand (RCCNZ) to assist in getting an unwell crew member home for treatment.

This is easier said than done in Antarctic waters and when time is of the essence. RCCNZ assessed the different options for transferring the crew member, looking at ice breakers, research and re-supply vessels, as well as cruise ships.

The Italian ice breaker *RV Laura Bassi* agreed to rendezvous with the New Zealand fishing boat five days later to take the crew member to the Italian base. The transfer was made by a fast rescue boat in calm conditions, and the crew member was taken to Mario Zucchelli Station where he was cared for.

From there, the Italian Antarctic team arranged for the crew member to travel via Italian Antarctic Programme Basler aircraft to the US Antarctic base at McMurdo Station. After receiving more care, the crew member was then flown by a ski-equipped C-130 Hercules to Christchurch on 20 January.

Christine Wilson, Search and Rescue Watch Leader and Antarctic SAR Planning Lead for RCCNZ, says the collaboration and response by the three Antarctic Programmes involved was critical to completing this mission.

"This was an example of the Antarctic Search and Rescue Plan in action. We're thrilled with how the rescue played out and, most importantly, that the crew member made it home safely."

Republished with permission, from the Maritime NZ publication Seachange.

TOP
Australian Antarctic Division Rope Rescue training in Coles Bay, Tasmania.
Courtesy Grant Prattley

WeChat

A success story from Drowning Prevention Auckland's engagement with the Asian community.

Around one-fifth of the drownings in Auckland from 2017 to 2021 were people of Asian descent, predominantly when land-based fishing and swimming.

"In July 2020, we hired an Asian Advisor, as part of a tailored response to reduced drownings in the Asian community," says Nicola Keen-Biggelaar, Chief Executive of Drowning Prevention Auckland (DPA). "Who were we to say what the Asian community needed to hear? Or what the best way to engage with them was? Resourcing our team with a respected person from the community was essential to make progress on the issue."

Madison Chang is a native Mandarin speaker, who also speaks Korean. As soon as he was hired, he recommended that DPA began a WeChat channel. "At first I didn't even know what WeChat was, and it required us to trust Madison's advice whilst we invested the time and money to get it up and running," says Nicola. "WeChat is roughly the Chinese equivalent of Facebook. Due to the political sensitivities of a Chinese-based platform, I had to provide a lot of my own credentials to start a WeChat page in DPA's name. This could be a barrier to entry for other agencies, but the efforts have been well worth it."

Leveraging off DPA's usual monthly e-newsletter, Madison translates the content, and adapts it to give an 'Asian flavour' with more storytelling, humour and quirky information. For example, evidence-based drowning prevention messages around crab fishing methods were delivered with details about the life cycles of crabs. "It's a totally different way of communicating," says Nicola. "The level of engagement we've been getting really demonstrates the value of having an authentic voice from the community we're trying to support."

"I feel proud to support Asian ethnic communities to gain knowledge and experience," says Madison. "We can really see the confidence being built amongst those who used to be in fear of water. They have changed their perceptions and behaviours after our DPA programme."

DPA's WeChat page has reached nearly 24,000 Asian/Chinese Aucklanders, with an average of 1,138 monthly reads of their newsletters. The April school holiday drowning prevention workshops were sold out within 24 hours of being promoted on WeChat, and a Maritime NZ-sponsored lifejacket giveaway was one of the most popular posts to date.

"Madison helped us understand the value that Asian communities place on trusting the leadership," says Nicola. "I usually prefer to lead from behind the scenes, but he encouraged me to meet with senior members of the Asian community, and speak at public events. Once they build trust in the leadership, they are far more receptive to our organisation and engage with our messages."

With the COVID-19 pandemic and recent severe weather events, it has been difficult to compare changes in drowning statistics year to year. But Nicola is convinced the efforts are putting things on the right trajectory. "It's a long journey, which requires courage to commit the time and funding. But genuinely understanding the cultural values and engaging with the community will almost certainly lead to better outcomes in the long term."

TOP
Drowning Prevention Auckland water safety education events. Supplied

INSET
"Wear a lifejacket for crab fishing." DPA WeChat screenshot. Supplied

SAREX

Exercise Whakarauora Tangata underway

Exercise Whakarauora Tangata is the Nationally Significant SAR Exercise, preparing for a high-consequence, low-probability SAR operation. In the past few months, planning has been focused on developing the scenario in preparation for the first activity in the series. This was an Incident Management Team Exercise (IMTEX) held on 26 July 2023 in the Bay of Plenty. We look forward to sharing with you how it went in the next issue of Link magazine. The Secretariat has also conducted an initial scoping visit to Dunedin and had preliminary discussions around a further IMTEX in Fiordland in late November.

During our consultations with key SAR agencies and those who might be called in to support a nationally significant SAR response, it has been great to see the level of interest being shown to either participate in or alongside the exercise. A number of agencies want to use the exercise to validate their own plans and procedures. This is within the context of the reconciliation and welfare response requirements, mass arrivals plans and transport investigation requirements. The Bay of Plenty IMTEX saw several agencies establishing emergency operations centres to support the management of medical, welfare and reconciliation needs for the victims. While the NZSAR Secretariat's focus is on the SAR response, if we can, we will accommodate other agency participation to ensure the investment in the exercise achieves maximum benefit.

The wider Coordinating Instruction together with General Instruction for the Bay of Plenty Phase can be found on the Exercise Whakarauroa Tangata page on the NZSAR website.

For more information, visit www.nzsar.govt.nz/natsigsarex or contact Lead Planner John Dyer, j.dyer@nzsar.govt.nz.

International SAR

Preventing search and rescue in U.S. National Parks

AdventureSmart.nz inspires the United States National Park Service Trip Planning Guide.

Over 300 million people visit U.S. National Parks each year to enjoy the amazing natural and cultural resources they have to offer. Visitors have many recreational opportunities available to them. Each of these activities comes with inherent risks that can end in unintentional injury or death. Unintentional fatal injuries account for 53 percent of reported deaths in U.S. National Parks. Many of these injuries happen when visitors are unprepared, engage in an activity that exceeds their experience or fitness level, or do not understand or follow hazard warnings.

The National Park Service's (NPS) Public Risk Management Program (PRMP) advises and works to prevent accidental visitor injuries. PRMP discovered AdventureSmart.nz after working with the NZSAR Secretariat in 2016. Inspired by the way that the AdventureSmart.nz website addressed poor trip planning and preparation, PRMP began a collaborative partnership with the NZSAR Secretariat that continues today.

Born of this collaboration, the NPS launched a Health and Safety website in 2018. Modelled after AdventureSmart.nz, the site provides safety tips on activity type, outdoor hazards, and the NPS Trip Planning Guide. This hub of safety information helps visitors plan for a safe adventure. Park managers also use the site to strengthen their own safety messages. Accessed over 335,000 times since 2019, the site is instrumental in helping visitors plan and prepare for their visit in more than 400 National Parks across the United States.

Thank you to Cynthia Hernandez, National Park Service spokesperson, for this article.

The NPS Health and Safety website is a hub for the NPS Trip Planning Guide and safety information for US national park visitors. www.nps.gov/healthandsafety

TOP
A screen shot from the exercise scenario videos, depicting a breaking news story about a stranded cruise ship.

Day in the life of a SARO

A glimpse into the work of the Search and Rescue Officers (SAROs) at the Rescue Coordination Centre New Zealand (RCCNZ).

Located in Lower Hutt, RCCNZ coordinates all Category II SAROPS within New Zealand's 30 million square kilometre search and rescue region. These SAROPS include all the offshore maritime and aviation search and rescue missions, and land missions that start with a distress beacon activation.

During an average shift, two SAROs each manage a range of alerting, tracking, mapping and logging systems from their workstation. Google Earth is the primary geographic information systems tool, used for developing search areas, analysing terrain and tracking assets. The SARO's have topographical, aviation and maritime chart layers available to them.

Alerts come from a range of sources, such as the Global Maritime Distress and Safety System. This includes VHF and HF radio, the Cospas-Sarsat distress beacon system and other methods of satellite alerting from vessels, aircraft and individuals.

For each response, a SAR Mission Coordinator is in charge, with the rest of the watch contributing. However, sometimes multiple situations can be unfolding simultaneously, each with their own SAR Mission Coordinator. Every action is logged on RCCNZ's incident management system, which supports operational review. This also enables shift handovers, as some incidents can take multiple days to resolve.

In the quiet periods, SAROs work on a variety of projects, such as developing training packages, updating SAR plans for distinct regions like Antarctica, or delivering SAR training to Pacific islands within New Zealand's search and rescue region.

Across the hallway is the Maritime Operations Centre, where a team operate a suite of radio and satellite communication gear. They provide the tactical communications with SAR assets and those in distress, whilst the SAROs provide the strategy, planning and decision-making.

Many SAR volunteers will be aware how RCCNZ coordinates land-based and close-to-shore responses to distress beacon activations. However, a lot of the incidents occur hundreds or thousands of kilometres offshore, such as a 'Man overboard' situation on an international fishing vessel. For example, when involving a Chinese-flagged vessel, SAROs work closely with the English speaking team at the Maritime Rescue Coordination Centre China, to coordinate search patterns with other vessels in the area that are looking for the missing person.

When a New Zealand registered distress beacon is activated overseas, RCCNZ contacts the local authorities to ensure a response is underway. Last year, a Kiwi on a dive trip in Mexico activated his beacon when the vessel they were on ran aground in the night and began sinking. RCCNZ was able to liaise with the US Coast Guard and the Mexican authorities, and with the help of an interpreter, found out that the rescue was underway and the New Zealand citizen safely accounted for. SAROs were able to relay this information to the man's family back home, which they greatly appreciated.

Often small fishing vessels from Kiribati are reported missing. In the last five years RCCNZ have been notified of these situations on average once a month. Kiribati is located in the Fiji search and rescue region, but adjacent SAR authorities such as Australia, United States and New Zealand take turns supporting Fiji with long-range SAR aircraft to aid in the search. There's a lot of international liaison, with a very positive attitude to the shared goal of saving life.

Altogether, a minimum of two of the 16 SARO's at RCCNZ are on duty at any given hour of the day or night, ready to use their skills and experience to assist those in distress within New Zealand's search and rescue region; an area roughly the size of the continent of Africa.

Thank you to Samantha Mildon, Watch Leader and Michael Clulow, Manager Operations at RCCNZ for their support producing this article.

TOP
RCCNZ Operations room. Supplied

SAR Statistics

Incidents coordinated by RCCNZ

How busy has the Rescue Coordination Centre New Zealand (RCCNZ) been over the last 13 years?

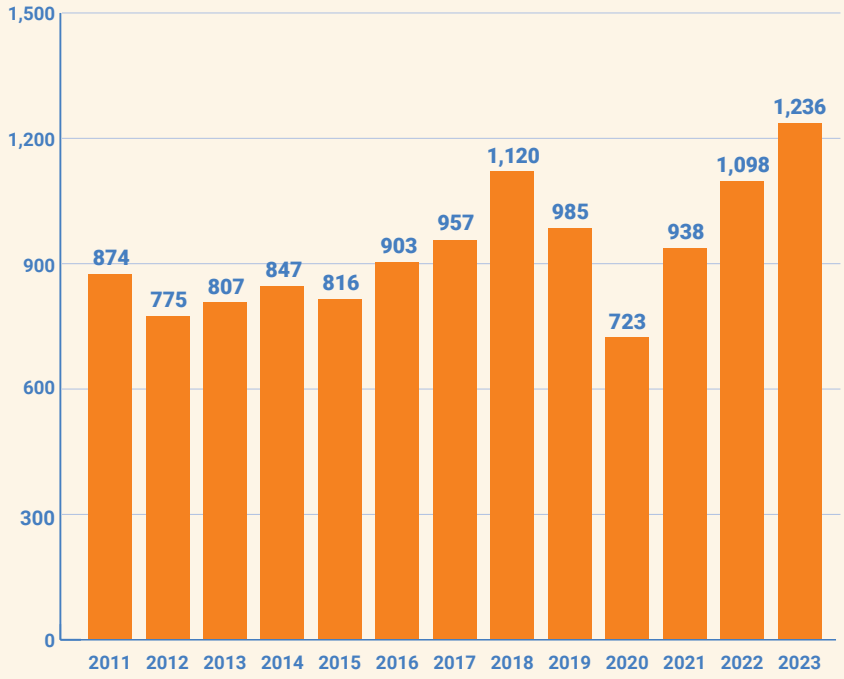
A day in the life of a SARO depends a lot on the volume of incidents they are required to coordinate. Each requires investigation to determine the nature of the situation, and if necessary, initiate and coordinate a SAR operation. Presenting trends of incident numbers is a simple way to approximate RCCNZ's relative workload over the years.

Any number of factors could be contributing to the changes in the number of incidents over time. During the 2010's, the number of incidents remained relatively consistent, apart from 2018, which showed a marked increase above average.

Although the COVID-19 global pandemic spanned the period where incidents decreased, New Zealand was in a period of restricted movement until 2021, when numbers returned towards pre-pandemic averages.

The significant increase in incidents for the reporting year ended 30 June 2023 matches the sentiment around the sector; that we've been busier than ever. Time will tell if 2023 is another outlier like 2018, or whether the trend will continue upwards.

Number of incidents coordinated by RCCNZ per calendar year.



Incidents include responses involving a SAROP, initial investigations only, or unresolved alert, with no SAR action required.

SAR Research

Volunteering New Zealand 2023 Volunteer Study

Review of the 2019 recommendations and update.

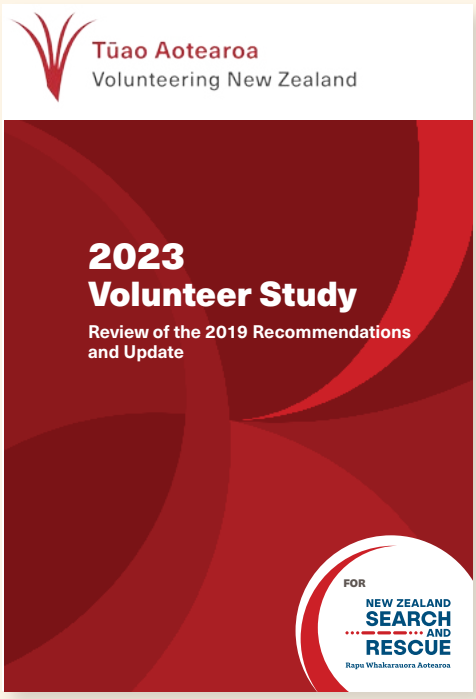
The fact that 89 percent of the SAR sector personnel are volunteers underpins the vital, ongoing work of the NZSAR Secretariat to support those people and the agencies they work with. The long-term aim is sustainable volunteerism over the whole sector, adapting to challenges and societal trends over time.

The recommendations from previous studies and surveys have formed the basis of the NZSAR Secretariat's volunteerism workstream over the last couple of years. Of the 14 recommendations in the 2019 Study, nine were fully actioned, four partially actioned and one not actioned.

The evaluation of this progress provides a series of next steps for the NZSAR Secretariat, in the key areas of workforce planning and sector resilience, diversity and inclusion, wrap around volunteer support and volunteer leadership.

The study goes on to discuss emerging national and global volunteering trends. For example, the amount of time New Zealanders are spending on formal volunteering is decreasing, and more people are doing informal or spontaneous volunteering. In the context of increasing volumes of SAR operations, plus growing contributions to severe civil emergencies, the challenge is how to best adapt to the trend for the benefit of the sector, without impacting the efforts of trained, long-term volunteers.

Although there are still many opportunities to further improve the way our sector enables and supports volunteerism, overall, this latest report tells the story of a very successful sector which continues to adapt and rise to the challenges it faces.



The Volunteering New Zealand 2023 Volunteer Study is available to download from nzsar.govt.nz/sar-system-support/sar-research/

10 questions with …

Matt Shelton

Coastguard North Shore wet crew and Coastguard Comms North radio operator

Matt draws on his background in amateur radio and IT to excel as an operations room volunteer. He was the winner of Coastguard's 2022 Communication / Incident Management Team Volunteer of the Year Award, and here he tells us about his Coastguard journey.

What inspired you to volunteer?

Since I was about eight, I've been in the Scouting movement, where community service was a major theme. I enjoyed it so much that I returned as an adult to volunteer as Scout leader, so I guess I've been volunteering most of my life! The idea of giving back is really important to me.

So how did you end up choosing Coastguard Tautiaki Moana?

My flatmate was already a volunteer, and they encouraged me to come along and check it out. I had a little bit of water and boating experience through Scouts, just enough to know that it interested me.

What was it like, turning up with only a little boating experience?

I guess it just meant my learning curve was a bit steeper than some of the other new recruits! Everyone was really welcoming and encouraging, plus we received excellent training and support. For me, it was a two-year process to complete all the training modules before I was qualified to be operational on the vessel.

Which parts of the training were the best?

It was the opportunity to meet and work with other people who had a similar interest and shared goal, but who came from really different backgrounds. My work background is in Information Technology, and I enjoyed making friends with people I probably wouldn't have without Coastguard. It really is like being part of another family!

There's lots of support from other team members and the Unit. We keep an eye on one another while we are at Coastguard, as well as during our normal lives.

How did you broaden your involvement into being a radio operator?

Another Coastguard friend knew about my background as an amateur radio enthusiast and IT professional, so he suggested I take a look around the operations room at the Auckland Marine Rescue Centre. My background, matched with the experience I'd gained on the water, made it a logical progression.

Can you paint us a picture of a normal day in the operations room?

We commit to a certain number of six-hour shifts each month. There's a lot of non-SAR functions we provide, such as logging boaties' trip intentions, monitoring vessels as they cross bars and coordinating requests for a tow when someone runs out of fuel. There's a good amount of friendly banter, time for catching up as well as training others in the downtime. When a distress call comes in, we're the first point of contact with those boaties, getting all the right information and initiating a response to help them out.

What was it like winning Coastguard's 2022 Communication / Incident Management Team Volunteer of the Year Award?

A surprise! It was a national volunteer award, and I had no idea I'd even been nominated! It was humbling to be recognised for the contributions I've made over the years.

Can you tell us about a memorable SAROP?

I've been involved in plenty of operations, from simple engine breakdowns, to fatalities in the water. I guess none stand out in particular, but the satisfaction of being able to help turn someone's bad day around is what sticks in my memory.

What is the best thing about being a Coastguard volunteer?

The people! We all have our quirks, but with the shared goal, we just seem to gel together. I've made some really great friends through volunteering.

Do you have advice for others who might be interested in Coastguard, but don't have lots of boating experience?

There's so many different roles within Coastguard, which means there's something for just about anyone. You don't need to be an expert to start, just a positive attitude! They provide great training and mentoring to build you up. Just go check it out!