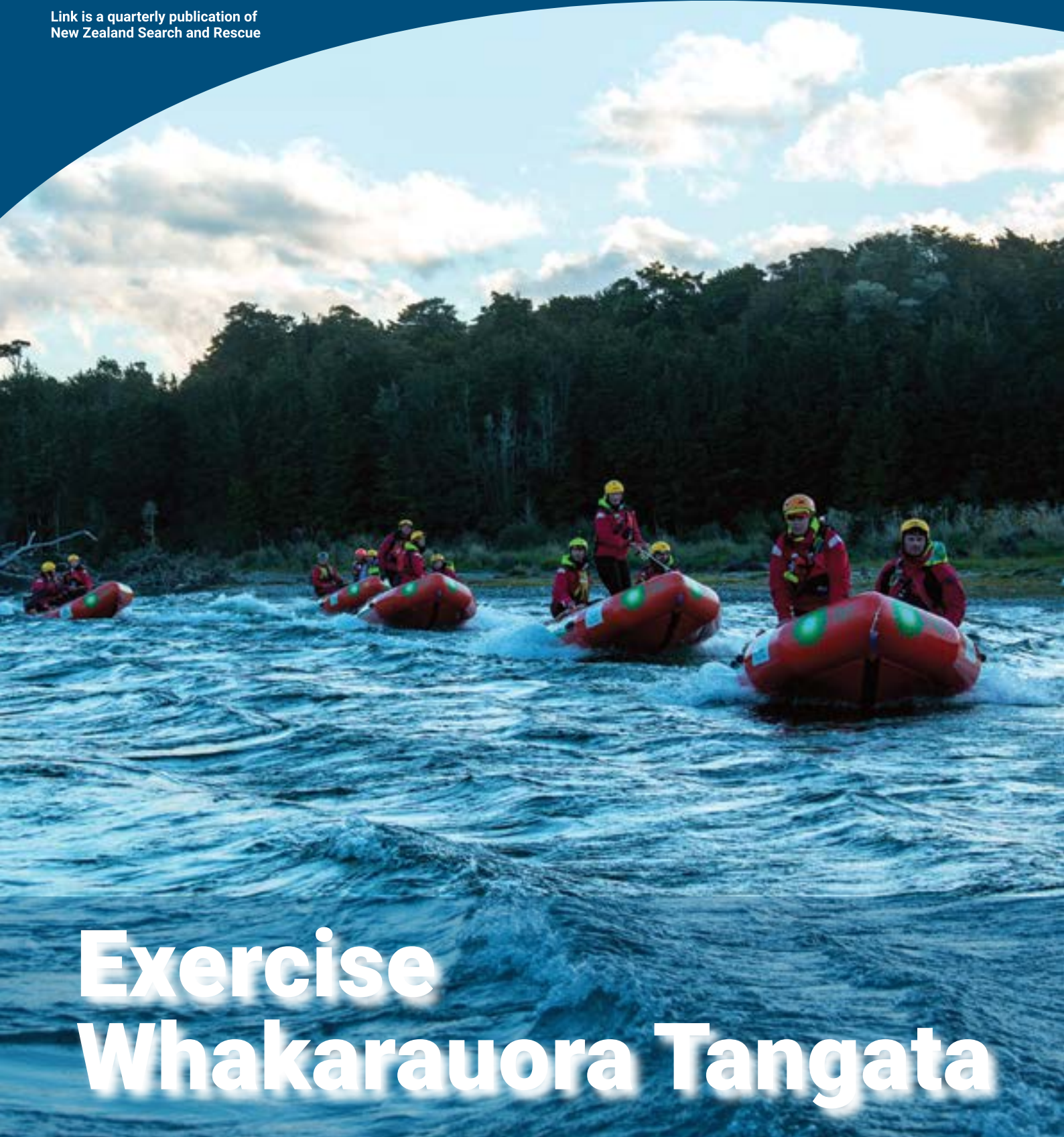




Connecting the search and rescue sector

Link is a quarterly publication of
New Zealand Search and Rescue



Exercise Whakarauora Tangata

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For feedback, contributions and subscription requests please contact info@nzsar.govt.nz



Duncan's desk

Kia ora koutou

While it might seem like the summer holidays weren't that long ago, the overnight temperatures in Wellington are reminding me that winter is just around the corner. Good news for skiers and alpinists, and a good chance for the SAR sector to reflect on the summer just been.

Summer 2023-24 was a very busy one for search and rescue. While SAR incidents in December were slightly lower than the previous year, January more than made up for it with a substantial increase in SAR operations. Based on the current data, we are projecting around 3500 SAR incidents for the year ending 30 June. So if you were thinking you'd been called out more often than usual lately, you'd be right! Thank you to everyone who was involved in or supported these operations.

2023 was also a busy year for training, with the number of courses and attendees both up 26 percent from 2022. Over 1500 people attended 133 courses run by Land Search and Rescue Training, which for the first time included SAR dog training camps and outdoor first aid. We've recently surveyed course attendees about their training experiences and will share the results with you later this year.

Regrettably, 2023 ended with 90 people drowned. In many cases these were avoidable tragedies. The ongoing impact on this preventable loss of life is immense with large numbers of families and communities hurting and whose lives have been irrevocably changed. The water safety sector is highly motivated to reduce this number with a range of initiatives being planned or delivered across the motu. You can read some insights from the World Conference on Drowning Prevention on page nine.

As you'll see in the following pages, there's been a lot going on across the sector. I particularly want to highlight the Kaihautū Leaders and Chief Executives Hui. The sector has made some great strides in better understanding and incorporating Te Ao Māori into our sector over the last few years, and a full-day hui was the next logical step. The gathering was an opportunity for sector leaders and kaihautū to come together for a full day to discuss the key issues and challenges for meaningful hapū/iwi engagement.

As the nights get longer and winter sports beckon, I hope you're able to take some time to reflect on your involvement in the SAR sector. I encourage you to seek support if you need it – the job you do isn't an easy one, but there are people who can walk alongside you if you need some extra help.

Stay safe,
Duncan Ferner
Director
NZSAR Secretariat

COVER IMAGE

SAR squads from Surf Life Saving New Zealand deploying on river for tasks during the Southern region SAREX.

New Year Honours List 2024

Several individuals were recognised for their services to search and rescue.

Steven Campbell and Hamish McCrostie became Officers of the New Zealand Order of Merit.

Aaron Nicholson and Senior Sergeant Karl Wilson became Members of the New Zealand Order of Merit.

Congratulations and thank you for your service.

Surf lifesaving skills for Police SAR Squads

Canterbury Police SAR Squad cast the net wide to fill a safety skills gap.

The Canterbury Police SAR team is sometimes required to work around rocky cliffs and treacherous seas.

“Helicopter access often isn’t an option due to the instability of the cliffs, which means Police SAR members have to swim into the cliff areas from Coastguard vessels to recover remains,” says reserve SAR squad member Constable Tom Denman.

“It’s often in choppy and surging seas and requires navigation and entry from the water onto the rocky base of the cliffs. It can be dangerous and not everyone is confident in that environment.”

Tom and the Police SAR team reflected on the unique skills required for the job and put their heads together to see how they could fill the gap.

“We need Police SAR members who understand Disaster Victim Identification and SAR operational processes, but we also need people with experience and skill operating in this type of unique marine environment.”

A surf lifeguard himself, Tom identified the missing piece of the puzzle.

“Surf Life Saving New Zealand are experts in the inshore rescue space,” Tom says. “We already had three Police SAR members who were active surf lifeguards at their local clubs and we knew there were other people in the district who held their Surf Lifeguard Award.”

The Surf Lifeguard Award requires its members to prove their swimming competency in challenging surf and open water conditions. They also have a rock rescue training module that applies directly to the skills required for body recoveries around cliff faces.

“We decided the best option would be to use the existing skills from across the district and have a mix of Police SAR and general constabulary who can work together on these operations.”

Police, Surf Life Saving New Zealand and Coastguard, got together for their second combined training session in December 2023.

“All three organisations worked seamlessly together. I think it shows the importance of collaboration across the sector and the quality of outcomes that can be achieved as a result,” says Tom.

“The incident controllers can now also be confident that the staff who are heading into that environment are appropriately skilled and as safe as they can be.”

The Canterbury Police SAR team would like to thank the Sumner Taylors Surf Life Saving SAR squad and the Coastguard Sumner unit for giving up their time, facilitating the day and for all the work they do for their communities.

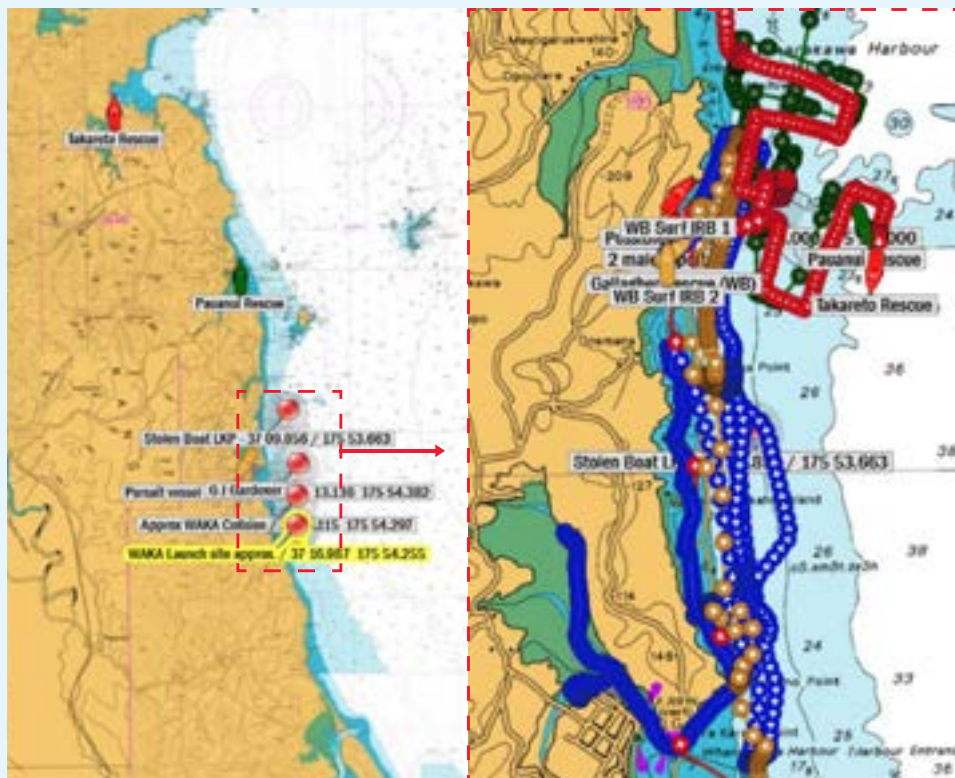
This article was first published in Police Ten-One magazine, and is adapted and republished here with permission.



The Rock Rescue training module involved a theory session, then two hours of practical in-water work practising rock entry and exits in surging water. Images courtesy Police

Sunken waka off Whangamatā

Reflections from the Waikato marine search and rescue exercise.



The IMT had a complex set of considerations to get the right assets to the right places at the right times. There were people in the water, a drifting support vessel and a stolen boat that would be trying to evade searchers.

Whitianga Coastguard's *Takareto Rescue*, Waihi Beach Coastguard's *Gallagher Rescue* and Pauanui Coastguard's *Pauanui Rescue* conducted creeping line search patterns. Meanwhile, Inflatable Rescue Boats crewed by Surf Life Saving NZ SAR squad members conducted shoreline searches. Live tracking screenshots, courtesy of Police

In late November 2023, SAR people from Coastguard, Police and Surf Life Saving New Zealand took part in the Waikato marine SAREX. The weekend was split into two parts – an IMT exercise on Saturday and an on-water exercise on Sunday.

“Having volunteers from Waikato as well as from the Coromandel Peninsula gave us diverse experiences to draw on,” says Sergeant Alton Trembl, Waikato Police District SAR Coordinator. “Each agency was encouraged to nominate a more junior volunteer to fill a position within the Incident Management Team (IMT), along with a more experienced nominee to act as a mentor through the weekend. Subject matter experts from the SAR agencies were also on hand to offer insights from their experiences.”

Refreshing standard Coordinated Incident Management System (CIMS) protocols was one of the key objectives of Saturday's IMT exercise. Altogether, around 25 people, including evaluators, exercise control and participant mentors, participated.

Two distinct IMTs were set up – one from Waikato and another from the Coromandel Peninsula. Each were given the same scenario: less than a kilometre offshore, a stolen boat had collided with a waka ama vessel, tipping the paddlers into the water. The waka ama support boat pursued the stolen vessel as it fled the scene northwards along the coast, but the support boat soon broke down. The scenario was deliberately written so it could be used by each IMT on their home coastline. The scenario aimed to establish a large search area, with an extra dimension of criminal activity to consider.

Allan Mundy, National SAR Manager for Surf Life Saving New Zealand was evaluating the activity on behalf of the NZSAR

Secretariat, who provided the exercise funding. “It was a really interesting situation to observe. Both IMT acted independently, but were provided the same exercise injects such as simulated call logs from the Police 111 system, as well as witness statements and evidence being found. They applied all that information to their home coastal environment to come up with a unique set of tasks and initial action plans.”

A debrief from the day's IMTEX was led by Alton and identified a number of lessons and solutions to address them during the on-water activities.

Unfortunately, on the Sunday, sea conditions at Raglan weren't safe enough to run the Waikato activities, so only the Coromandel Peninsula activities went ahead.

More than 50 volunteers from the Coastguard units and Surf Life Saving clubs in Whitianga, Whangamatā, Tairua, Pauanui and Waihi converged at Whangamatā to begin Sunday's SAREX.

“It was very pleasing to see agency representatives in the IMT working readily with unfamiliar faces,” says Alton. “Building strong inter-agency relationships is always one of the key objectives in any multi-agency SAREX. The feeling around the debrief was overwhelmingly positive, with lots of personal and agency level learnings, as well as a renewed connection between everyone involved.”

The evolution of SurfCom

From monitoring early regional radio networks to real-time national coordination, the Surf Life Saving Communications Centre (SurfCom) has come a long way.

The first regional radio networks for surf life saving clubs were set up around 1995, as the demand for lifeguarding services rose sharply in Auckland and Canterbury.

SurfCom was established at the Auckland Marine Rescue Centre soon after, supporting clubs in the Northern Region. Radio network infrastructure grew in stages, as funding and resources allowed. The 2022/2023 season saw a historic milestone: SurfCom was finally able to extend its support to all surf lifesaving operations, including 40 SAR squads and 74 surf life saving clubs operating across 92 patrol locations.

In peak season, a shift of four SurfCom Operators plus a Duty Officer provide monitoring and support, as well as initiating SAR operations. "Being co-located with the Police Maritime Unit and Coastguard Operations Centre is fantastic for multi-agency SAR operations," says Laura Beanland-Stephens, SurfCom Manager.

As well as providing nation-wide coordination and support, the Duty Officer can provide advice on policy and procedure. "Being aware of every operation across the country means we can ensure our member wellbeing follow ups are initiated. Likewise our media team knows what is going on, so they can issue timely press releases as well as tell our stories to help celebrate all the work our people do."

Nearly 30 years of infrastructure development has meant networks were established using the technology of the day. Now there are nine different radio networks across the country. "It's been a significant challenge to integrate these disparate networks into one

centralised system," says Laura. "Getting the appropriate funding and support to realise that capability was a major milestone for us as an organisation. But we see it as just the start of what we will be able to do in the future."

The evolution of SurfCom mirrors that of the surf lifesaving movement as a whole. "We're constantly developing to deliver the best support to our communities that we can."

Not all of the areas are connected with SurfCom via radio network yet. The central North Island coastal areas are due to come online in 2024. However, all services can reach SurfCom via phone as well as the Surf Patrol App. "The app was built and originally used by Surf Life Saving Northern Region. Last summer was the first time it was operating nationwide," says Laura.

"The Surf Patrol App provides incredible situational awareness for the organisation, allowing us to capture data, anticipate needs and support our people far more effectively than ever before. For our clubs, it significantly reduces the administrative load." SurfCom can see which surf lifeguards are on patrol plus their qualifications. Reported daily hazards are displayed as well as beachgoer numbers, incidents, preventative actions and so on. When surf lifeguards log on to the Surf Patrol App, the public-facing Safeswim.org.nz site updates to show that the beach is patrolled, along with any relevant safety warnings. Further integrations in the SAR space, such as group callout and reporting functions are in development.



Different radio networks, developed as funding allowed over the last 30 years. Voice and data is sent from radio repeaters via fibre and cellular technology. All incoming information is integrated onto a cloud-based computer system and delivered to the workstations of a team of SurfCom operators.

SurfCom is staffed and available 24/7. SAR coordinating authorities and partner agencies can call SurfCom directly to activate a response from Surf Life Saving New Zealand. Representatives should contact surfcom@surflifesaving.org.nz for the direct phone number. Members of the public who require urgent help should still dial 111 and ask for Police.

Southern Phase of Exercise Whakarauora Tangata complete

Responders and regional incident management teams tested during the latest activities in the Nationally Significant SAREX series.

During the table-top exercise lead by the Rescue Coordination Centre New Zealand (RCCNZ) on 11 October 2023, participants played out a response to a Nationally Significant Category II SAR incident. The incident involved a boutique cruise ship foundering near the entrance to Doubtful Sound, with multiple casualties and missing people. The scenario was highly relevant to Southland; over 129 cruise ships visit the waters of Fiordland each season.

Using the response plan developed during that activity, the Exercise Whakarauora Tangata planning team were able to tailor a comprehensive exercise control plan for the activities that followed. This was used to create a much more realistic exercise for participating agencies. On 18 November 2023, over 200 people from multiple agencies participated in a functional SAREX, conducted in the Lake Manapouri and Lake Te Anau area. A crew from TV 1's *Seven Sharp* programme attended and produced a report which aired on 21 November.

A range of actors, mannequins, other vessels and even floating soccer balls were used to test the frontline-responders and incident management personnel.

"We deployed around 20 soccer balls onto the lake to simulate drifting items of interest," says Nathan White, National Police SAR Coordinator. "When search teams found them, each had useful snippets of information which was fed back to the Incident Management Team to refine the response."

The Incident Management Team exercise was led by NZ Police, and held at the Environment Southland Emergency Operations centre on 7 December. "This activity focussed on on-scene coordination and responding to requests from RCCNZ," says John Dyer, Lead Planner for Exercise Whakarauora Tangata. "Next they transitioned to managing the reconciliation process for the 257 people who were on the cruise ship."

Feedback from both exercises confirmed that participants valued the opportunity to work together and benefited from learning from each other. The venue also showed its suitability to host a multi-agency integrated Incident Management Team and the support provided by Environment Southland was greatly appreciated.

Following from the success of the Bay of Plenty and Southern Phases of the exercise series, the planning team is working hard to refine the exercise to ensure that lessons to date are incorporated into the future activities.

The Wellington IMTEX took place on 20 March 2024, with the Eastern district activities due to take place in May. To watch the *Seven Sharp* feature video and learn more about the exercise series, visit nzsar.govt.nz/natsigsarex



Participating agencies

- New Zealand Defence Force
- Southern Lakes Helicopters
- NZ Police
- Surf Life Saving New Zealand
- Coastguard
- Land Search and Rescue
- Amateur Radio Emergency Communications
- Hato Hone St John
- New Zealand Red Cross
- Emergency Management Southland
- Te Anau Water Response Team
- Fire and Emergency New Zealand
- Southland Health/Te Whatu Ora
- NZ Customs Service
- Southland Harbour Master
- Rescue Coordination Centre NZ





“The squad’s main role is evidential searches underwater, but we also contribute to SAR operations. Being able to find and recover a person from underwater is really important for the families, as well for gathering evidence for subsequent Coronial or Police inquiries.” – Senior Sergeant Bruce Adams, Officer in Charge of the Police National Dive Squad. Images courtesy Police

Police National Dive Squad

Centrally located in Wellington, the Police National Dive Squad supports the SAR sector with underwater searches and recoveries.

The squad is comprised of 5 full-time members, plus 16 officers who split their duties between the Dive Squad and other front-line Policing roles in Wellington. There are also several Dive Squad members around the country. “Having Police divers around the country means that they can offer local expertise quickly to incident controllers,” says Senior Sergeant Bruce Adams, Officer in Charge of the Police National Dive Squad. “It also gives us the opportunity to ask technical questions, so we can pack the right equipment before deploying.”

Taking the right gear is important, and the Police National Dive Squad have plenty to choose from. “Taking everything we need and nothing we don’t is especially important if we have to travel by commercial airline for a job,” says Bruce.

Each diver has their own full set of equipment for each type of diving operation. Wetsuits are most frequently used, paired with relatively standard SCUBA equipment. Everything is commercial grade, including specialised full-face masks. These have an integrated communication system, which connects wirelessly to another diver, or to the surface support vessel. For cold or contaminated water operations, drysuits and advanced masks are available.

At the top end of the spectrum, diving helmets can receive air via an umbilical from the surface that also supplies communications, video feed and power for lights. Helmets can also connect to a fully rubberised dry suit for hazardous liquid dives, such as when searching sewerage ponds.

Often visibility is extremely poor when conducting a search. The divers use a sonar device about the size of a household microwave oven to accurately scan the area around them. To aid data recording, the device can log the position of any point of interest by deploying a floating GPS antenna to the surface. The antenna

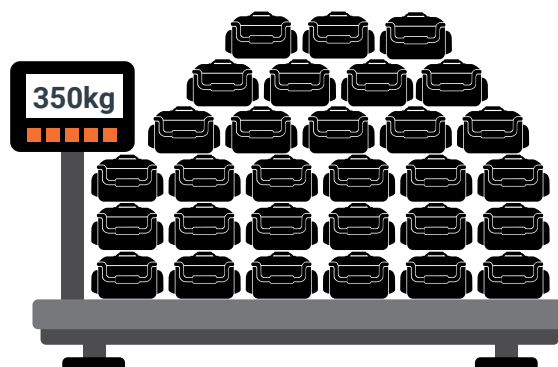
is attached by a cable, so by pulling the cable tight, accurate coordinates can be determined.

The Dive Squad also investigates all the diving fatalities in New Zealand and works with the recreational and commercial diving sectors to spread safety and prevention messaging.

Last year, the Police National Dive Squad were recognised, alongside others, with two NZSAR Awards: one for the *Enchanter* sinking, and the other for the recovery of a missing tramper from a gorge near Milford Sound.

“To get to the gorge dive site, we had to catch an overnight Cook Straight ferry, drive to Christchurch, fly to Queenstown and then helicopter to Milford Sound. From there, we deployed with the Wanaka Canyon SAR team to the start of the gorge and with their help, abseiled down a series of waterfalls. It was one of the more complicated journeys to a task we’ve had in the last few years, but it shows the lengths our team goes to bring people home to their families.”

On average, the squad takes around 30 bags, adding up to nearly 350kg.



Tiny lights near Tauranga

Teamwork, tenacity and technology came together for a successful outcome in the search for a teenager lost in the Bay of Plenty bush.

“The activation call came from Police about 7.30pm and we deployed to the search area with very little information,” says Nic Hume of Tauranga Land Search and Rescue. “All we knew was that a ‘boy had gone walking with a dog’ and failed to return.”

Although the weather was relatively stable, it was late winter, so temperatures were dropping quickly. The missing person was not equipped to spend the night, and searchers were very concerned for his welfare.

Nic was part of a ‘hasty team’ intended to search the highest probability areas quickly and methodically. At the scene, they met with a police officer and an informant.

“We were given coordinates for the last known point of the missing person,” says Nic. His team headed off to search that area, which was off a different road and about 600 metres into thick bush. The team included a tracking dog and handler, so when the dog couldn’t find a scent, they queried the information. “Updated intelligence confirmed that particular location was from a well-meaning but incorrect assumption from the informant.” says Nic.

Further enquiries confirmed the correct location where the missing person had begun their walk, so the teams redeployed and began processing the last known point for clues. The dog quickly indicated a scent, which the team followed through thick, steep bush. Meanwhile, the missing person had kept walking to stay warm. The dog was able to track for about three kilometres, but it lost the trail around 3am.



“The temperature was continuing to drop, so when we lost the scent, we knew we needed to request a helicopter with night vision capability to improve the chances of finding the missing person quickly,” says Nic.

“VHF radio coverage was patchy considering the nearest repeater location, so we found ourselves using a combination of VHF, InReach satellite messages and mobile phone messages to communicate with the incident management team.”

Thirty minutes after arriving on-scene, the helicopter crew noticed a faint light from the missing person. The missing person’s quick thinking to shine the Bluetooth light from his headphones at the helicopter captured the crew’s attention. This enabled the helicopter crew to direct the field teams to the location of the light.

“We were close but couldn’t pinpoint the missing person. So, we asked the helicopter to move away, then used a sound search to find his exact location.” The missing person and the dog were both cold but otherwise unharmed. They were assisted by Nic’s team to the nearest road, concluding a successful multi-agency search and rescue operation.

Insights

Confirming intelligence may mean a short delay in tasking and deployment but can result in a more efficient search.

Using the PACE communication strategy enables search teams to operate in difficult locations. Primary – VHF radio via repeater. Alternate – InReach satellite. Contingency – Mobile phone. Emergency – Personal Locator Beacon.

Night Vision Goggles amplify the available light by thousands of times. Even the smallest light source can be detected from considerable distances. Probability of detection (POD) is increased on darker nights where small lights give more contrast. POD is decreased by vegetation cover and high humidity, or larger particles in the atmosphere such as rain, dust, or smoke. After this operation, the Tauranga Land Search and Rescue group purchased a set of Night Vision Goggles to aid in future night searches.

Tracking the scent during the SAR operation. Courtesy Nic Hume

World Conference on Drowning Prevention

Delegates from Surf Life Saving New Zealand (SLSNZ) presented eight papers on prevention initiatives to a conference of over 700 people from 50 countries.

The 2023 edition of this biennial conference was held in Perth, Australia from 5 to 7 December. Papers presented by SLSNZ included rip current identification using artificial intelligence, the Safeswim integrated online beach safety platform, research into surfers' roles in drowning prevention plus the Ngāi Porou Life Saving Club mission to encourage Māori participation in surf life saving and to reduce the Māori drowning rate through education and prevention.

The conference is run by the International Life Saving Federation, with paper abstracts and more information available online: wcdp2023.com



Kaihautū Leaders and Chief Executives Hui

Supporting relationship building and knowledge sharing between SAR agencies, recreational safety organisations, and iwi.

The inaugural Kaihautū Leaders and Chief Executives Hui was held in November 2023 in Wellington. Around 45 kaihautū (liaison person), hapū/iwi representatives and chief executives attended, focussing on whakawhanaungatanga (relationship building) and sharing of mātauranga (knowledge).

This was the first time these groups had come together in one place to discuss their perspectives and understand the key issues, challenges and barriers for hapū/iwi engagement.

Sessions were either arranged for the entire hui, or as parallel sessions for kaihautū leaders and chief executives respectively. "We were able to tailor the sessions to the audience, to quickly bring the attendees up to speed with recent developments and fundamental issues," says Rob Hewitt, Kaihautū for the

New Zealand Search and Rescue Secretariat. "That gave us a better base to build on during the whole hui sessions."

A wide range of presentations were balanced with panel discussions as well as plenty of deliberately informal kanohi ki te kanohi (face to face) engagement.

"The hui helped us identify a range of key issues from many perspectives," says Rob. "The overwhelming theme is a strong desire to understand each other better, and to work together for better outcomes for the safety of all New Zealanders. The first hui has set a very positive foundation, and iwi are looking forward to holding the next hui on a marae."

ABOVE

The first Kaihautū Leaders and Chief Executives Hui.
Courtesy Phil Greig /Philmhaus

The YSAR GIS programme

Youth Search and Rescue (YSAR) is supporting the next generation of Geographic Information Systems (GIS) users.

Spatial analysis is an important skill for incident management in many SAR situations. A collaboration between YSAR and New Zealand-based Eagle Technology Ltd is providing access to professional geo-spatial software for the next generation of volunteers. Steve Campbell, CEO of YSAR, says that GIS has been incorporated into the YSAR curriculum since 2009.

“While paper-based maps remain an important backup for field teams, GIS can integrate data from various sources, offering improved situational awareness, efficient resource allocation, real-time tracking, data-driven decision-making, and a platform for seamless collaboration.”

GIS is embedded in the organisation at many levels. Initial training involves YSAR students learning the software, with support from tech-savvy peers and tutors. Projects such as mapping community predator trapping lines and storm damage assessments for local councils, give the students real-world challenges, whilst contributing in a meaningful way to their communities.

Senior students utilise GIS within incident management roles at YSAR exercises and training camps, both for real-time tracking of field teams, as well as deployment planning and operational control. Incidents, accidents and debriefs from these activities are recorded within the system, aiding lesson management and reinforcing the utility of the tools to the students.

Recent projects have included thermal imagery ortho-mosaic processing, which involves collating a series of high-resolution images into a single large, map-quality image. “These skills have many applications in the search and rescue and emergency management sectors, and YSAR is pleased to be fostering them in the next generation of volunteers.”



Some YSAR branches are planning to work with nearby Land Search and Rescue groups to record and display their geospatial knowledge. This includes the locations of access points, suitable repeater locations, lost party decision points, helicopter landing zones, hazards, sensitive areas and tapu (sacred) sites for iwi. “GIS is a great way of capturing institutional knowledge and supporting the Incident Management Team’s need for comprehensive, up-to-date geographical intelligence,” says Steve. “We began this initiative in the Kaimai Ranges in 2014, and in 2024 hope to expand it through some of our other branches.”
Image courtesy Adrian Malloch

Farewell to Michael

Michael Bassett-Foss came to the end of a four-year term as Independent Member of the NZSAR Council in December 2023.

The NZSAR Council provides strategic leadership to the sector, and his role was to represent the interests of the non-government agencies. "It has been a daunting task to amplify the voices of nearly 10,000 courageous and passionate front-line professional volunteers," says Michael. "It has been a privilege to be welcomed at SAR exercises around the country and to see the great work being done by talented and dedicated people."

"I began the role with a special interest in inter-agency coordination, and elevating the relevance of volunteers in that space. One thing that quickly became clear to me, is the huge respect that members of the government agencies have for those volunteers."

Developing sector connection with tangata whenua has been a particularly memorable aspect of his tenure. "The first Kaihautū Leaders and Chief Executives Hui was enormously powerful. I'm confident that together we're heading in a very positive direction."

Likewise, guiding the nationally significant SAREX series: "The outcomes from Exercise Whakarauora Tangata will have far reaching benefits for all of New Zealand. It's been a privilege to help our sector contribute at such a scale."

He hopes the knowledge and connections he's gained will enable him to keep supporting the sector after he formally steps down.



But for now, Michael is looking forward to spending more time as a front-line surf lifeguard and coach at the Waimarama Surf Life Saving Club.

On behalf of the sector, the NZSAR Secretariat sincerely thanks Michael for his dedicated service on the NZSAR Council.

The NZSAR Council has appointed Giuliana Petronelli as the new Independent Member. She is an Associate with a Christchurch law firm with experience in employment law and governance.

Giuliana also has practical experience in governance sitting on several boards in the sports and business sectors. She volunteers for Land Search and Rescue and is training to become an operational search dog handler.

New Zealand's SAR response system gets major upgrade

The New Zealand ground station satellite facility that receives and processes signals from 406MHz emergency distress beacons has had a successful upgrade to enhance its function within the Cospas-Sarsat System.

The Cospas-Sarsat System is a global cooperative that uses satellites to detect and locate the distress beacon signals that initiate search and rescue operations.

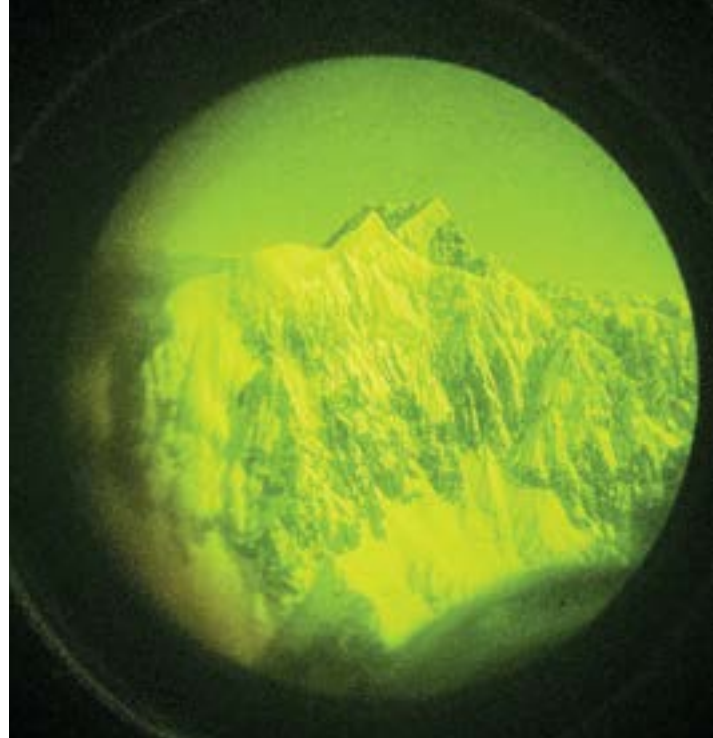
There are three types of satellite which comprise the Cospas-Sarsat system; Low Earth Polar orbiting (LEOSAR), Medium Earth Orbiting (MEOSAR) and Geostationary Earth Orbiting (GEOSAR). Signals from distress beacons are picked up by these satellites, then transmitted to a Local User Terminal (LUT) and then onwards to the staff at the relevant Rescue Coordination Centre.

The updates also integrate a return-link system which lets people know that their beacon activations have been received. New Zealand will now be able to share our six receiving antennae information with Australia's six, which enhances our joint coverage area and improves the accuracy of the system.

This is a very important step in New Zealand's contribution to this unique international organisation.



The installation, showing the six covered MEOSAR dishes, and two uncovered GEOSAR dishes. Upgrades to the NZ MEOLUT (MEOSAR Local User Terminal) allow it to process notifications from new generation beacons, as well as autonomous distress tracking alerts from aircraft which have been upgraded in the years following the loss of Malaysian Airlines MH 370. Courtesy Maritime NZ



HeliOtago operates the latest Airbus H145D3 (shown above), as well as the legacy BK117 B2 evolutions. All are twin-engine, with cruising speeds of up to 130 knots (240 km/h) and modern avionics such as GPS navigation, autopilot, traffic collision avoidance system (TCAS) and terrain avoidance warning system (TAWS). They also have access to Forward Looking Infrared (FLIR) cameras which can detect heat from a missing person and display a thermal image of a scene. Image courtesy HeliOtago

The introduction of Night Vision Goggles (NVG) has been the single most important advance in night flying operations for rescue helicopter services in decades and has significantly enhanced the overall safety of the flight crew, while allowing for a better operational capability. The image above shows a crew member's perspective through NVG of Aoraki/Mt Cook during a SAR operation. Image courtesy HeliOtago

Otago Southland Rescue Helicopter Service

Providing search and rescue and emergency medical services across southern New Zealand.

The Otago Southland Rescue Helicopter Service is called on to support missions as far as Aoraki/Mt Cook to the north, the Haast Pass in the west, the Waitaki valley to the east and all the way south to the Subantarctic Islands.

In a search and rescue context, the service is primarily operated by Helicopters Otago, which has three dedicated helicopters at its Taieri Rescue Base and two dedicated helicopters at its Queenstown Rescue Base.

The dedicated helicopter and crews are on call 24/7, ready to be airborne within 10 minutes by day, or 20 minutes by night. Each helicopter deploys with at least one pilot, and two paramedics, one of whom is also the winch operator. Onboard is a suite of high-level medical equipment, including ventilators, oxygen, splints, automatic CPR machine and suction units. "The Corpuls Monitor/Defibrillator is the most utilised piece of medical equipment," says Jodie Burton, Intensive Care Paramedic/Team Leader at the Queenstown Rescue Base. "It enables the crew to monitor patients' heart rhythm, blood pressure, oxygen and carbon dioxide levels. It also has the ability to pace and defibrillate."

"Most of our work is classed as emergency medical services. This includes collecting and delivering patients with time-critical medical needs from a known location to hospital, or transferring patients between hospitals," says Jodie. "We average five or six

jobs a week to inaccessible or mountainous locations. About two or three of those are responding to beacon activations on behalf of the Rescue Coordination Centre New Zealand." Depending on the terrain at the beacon location, the helicopter can deploy with Land Search and Rescue field teams, specialist Alpine Cliff Rescue teams from Queenstown or Wanaka, or the Aoraki/Mt Cook Alpine Rescue Team.

Missions are often conducted at night or in poor weather. "Our machines and pilots are capable of flying under Instrument Flight Rules (IFR) which means flying safely through clouds and low visibility, on a prescribed flight path," says Jodie. "Most IFR routes are designed for passenger aircraft flying between airports. Beginning in 2017, HeliOtago led the establishment of IFR routes specifically for rescue helicopters, between the southern region's hospitals and a number of regional towns. This dramatically improves our ability to get to where we need to go in bad weather."

At night, crews have access to a 30-million candle power Nightsun spotlight and the latest generation AN/AVS-9 Night Vision Goggles. This technology was originally developed by the United States military. Helicopters Otago were instrumental in introducing the technology to civilian operators in New Zealand back in 2005, which required approvals from the US Department of Defence, as well as the Prime Minister of New Zealand.

Feedback from the NSW Flood Symposium

Sharing ideas and strengthening relationships with our Australian counterparts.

In early October 2023, flood rescue experts from around the world gathered at the Whitewater Training Facility in Penrith, Sydney, to practise their skills and share knowledge. Three representatives from Surf Life Saving New Zealand (SLSNZ) attended. "It was affirming to see that we are heading in the right direction," says Allan Mundy, National SAR manager for SLSNZ. "All our people were able to sync right in with the Incident Management Team and Strategic workshops. Likewise our flood technicians were almost completely aligned with the techniques used by our Australian peers."

The New South Wales State Emergency Services is invested in applying a proactive approach to flood emergencies, working closely with regional councils and responding agencies. Detailed flood water depth over roading predictions allow plans for road access during flood events. Pre-approved media campaigns get the message out to the public on how to prepare and behave in flood events. State governments provide significant funding for introduction, currency and interoperability training activities. "This reinforces the importance of New Zealand investing in our readiness for flood events," says Allan.

"As our Australian counterparts agree, supporting the volunteer sector with suitable training, equipment and infrastructure is key for effective flood response."

One interesting point of difference was the use of flood-specific emergency management protocols, which are significantly different from other civil emergency protocols. A Flood Area of Operations (FLAO) would be requested by any flood responding agency, and authorised by the State government. This would unlock extra resources, in a similar fashion to our declared states of emergency here in New Zealand, but also activate flood specific protocols.

The SLSNZ team presented their Flood Work Plan. "The 2017 Edgecombe floods were the first time SLSNZ had been formally tasked by Police to help in a flood situation," says Allan. "Afterwards we had a major review of the operation, and realised we needed a strategy to better prepare our people for future incidents. We presented our progress so far; identifying learning materials, teaching the teachers, sourcing suitable equipment and developing capability across the country."

Another Kiwi contribution to the symposium was a workshop on the Rescue Flood Boat Towing Bridle. "By the end of the symposium, all the Australian teams had tried our system and they were impressed at how well it worked," says Allan.

The next SES Flood Symposium is in November 2024, and a larger contingent from New Zealand is planning to attend.



The Rescue Flood Boat Towing Bridle.

In a flood rescue situation, Inflatable Rescue Boats (IRBs) often need to get close to people trapped on structures by strong currents. When the IRB is alongside the structure, there's no space to effectively use its engine to manoeuvre or stabilise itself. If the IRB becomes pinned between the structure and current, it could easily capsize, with potentially serious consequences.

To avoid this, a second IRB is positioned upstream with a connecting line attached to the Rescue Flood Boat Towing Bridle. Using its motor against the current, the upstream IRB acts as a stationary 'anchor', which gives stability to the rescuing IRB. A quick release mechanism (the white line in the photo) provides the option for crews to detach from one another in an emergency. Courtesy Surf Life Saving NZ



Coastguard increases volunteer numbers

Government investment and national coordination of workforce planning boosts recruitment and retention.

“We knew that we were facing challenges with maintaining our volunteer workforce,” says Matthew Rea-Rankin, Head of People and Capability at Coastguard New Zealand. “But it wasn’t until the 2019 Volunteer Study that we knew the scale of that challenge.”

Between 2013 and 2017, on average three volunteers left Coastguard for every one new recruit.

– Volunteering New Zealand Volunteer Study, February 2019

Historically, recruitment and retention activities were coordinated locally, with little strategic oversight. Working with the NZSAR Secretariat, Coastguard was able to secure Government investment for nationally coordinated workforce planning.

Addressing retention challenges was the first task. “We conducted our first comprehensive volunteer survey in 2022,” says Matthew. “Our volunteers wanted more support from head office and improved training programmes, so we quickly began a comprehensive training review project to address those concerns.” In 2023, they were a finalist in the Human Resources NZ Awards for that project.

Among other benefits, a healthy organisational culture promotes retention. “Culture is driven by leadership,” says Matthew. “Historically we didn’t have any leadership training. Now we have a regular leadership development programme, for 16 of our skippers at a time.” Meanwhile, resources and training programmes are being built to support unit governance for volunteers.

With a significantly improved training program, Coastguard began its first nationally-coordinated recruitment campaign in 2022.

Prior to the launch of the next recruitment campaign in 2023, volunteer Unit Crew Coordinators participated in a six-week series of evening workshops covering recruiting soft skills, community engagement, inductions and onboarding as well as use of the national recruiting software for the volunteers at the units. Also, a ‘Unit Crew Coordinator Guide’ was produced to support units with their recruitment.

“Telling our stories well was a big help,” says Matthew. “The story of a family who were rescued and are now Coastguard volunteers was picked up by TV show *Seven Sharp*. By week two of the recruiting campaign we had over 600 applications.” When the campaign ended after 10 weeks, there were a total of 906 applications. Over 200 candidates began onboarding and induction, with another 170 on a waitlist for when units have the capacity to accept them.



The Coastguard marketing and communications team prepared tiles for use in social media campaigns. They also developed a range of print advertisements and brochures, including versions in te reo Māori and other languages for units to hand out at community events.

“With the large number of applications being received daily, it was a mammoth task to engage and process every potential volunteer,” says Matthew. “Unit Crew Coordinators had their work cut out for them and did an amazing job throughout the recruitment campaign”.

Reversing the historic trend, for the 2023 year there were 1.2 new recruits for every volunteer that left.

Future campaigns will still be nationally coordinated, but be more targeted towards smaller localities and under-represented demographics. “It’ll be a few years until we reach 2,500 volunteers, which is the number we need to comfortably sustain outputs,” says Matthew. “We can be proud as an organisation for responding to this challenge. There’s still a long way to go, but we’re finding out what works for us, and the results speak for themselves.”

Better boating on the bar

A look at Coastguard's nationally-supported initiative to engage with boating communities and reduce preventable drownings on bars.

"In the last decade, 31 people drowned due to incidents on bars," says Nātia Tucker, Community Engagement Manager for Coastguard New Zealand.

The Coastguard Bar Awareness Project aims to prevent future tragedies through resources, education and community outreach programmes. Some initiatives such as safety signage at boat ramps and integration of web cams into condition assessments are still in development. Meanwhile, Coastguard's nationally-coordinated Bar Awareness seminars and videos were rolled out successfully during 2023, with 539 people attending 11 seminars from Kaipara in the Far North to Kaiapoi in Canterbury.

"In the past, bar education was provided by individual Coastguard units," says Amy Natrass, from Coastguard's Community Engagement Team. "Last year, we took care of the bulk of the administrative burden of promoting and running the seminars, leaving the delivery on the day to the experts from the local units. We also provided training on presentation techniques for volunteers who wanted the support." Engagement with stakeholders such as local councils, harbourmasters, fishing clubs and Maritime New Zealand brought extra support, resources and knowledge to the seminars.

The Bar Seminar series presented new opportunities to engage with mana whenua. "We were delighted when local mana whenua agreed to open some seminars with mihi whakatau (formal welcomes)," says Nātia. Coastguard developed a series of bar-specific and general bar awareness videos. Mana whenua representatives

share during the videos about bar safety and historic incidents.

"European and Pasifika males aged 40-55 are our key audience," adds Nātia. "The support from mana whenua builds on our Māori and Pasifika strategic goal that Coastguard has strong respectful relationships with iwi, hapū and whānau." Coastguard is working on targeted approaches for other demographics, as well as groups such as the game fishing community.

The bar awareness videos were first shown at the 2023 seminar series, then refined through feedback before being released publicly. "Although the seminars were highly successful, we knew we needed ways to reach people who weren't able to attend," says Simon Marshall, Bar Safety Project Lead. "The videos will complement the e-learning resources that we're developing. As the project matures, there will be a wide range of options for the public to access the knowledge, improving the chances that people will take it on board."

The aim is to continue the seminars on an annual basis and expand the support to other units with nearby bars. "We're here to offer all the support we can to our Coastguard units who would like to host a seminar," says Nātia. "The feedback from attendees has been overwhelmingly positive, delivering a real benefit for public safety and SAR prevention."



Bars are found outside the mouth of a river or harbour. They are a build-up of silt and sand deposited by the river outflow or tidal currents. These form shallow areas with rough conditions and large waves which can capsize or swamp boats. Tides and weather influence the bar condition, and shifting sands mean that bars are constantly changing, making each bar unique. Crossing a bar is difficult and hazardous, even for experienced boaties. Coastguard developed a series of bar-specific and general bar awareness videos to help reduce preventable drownings on bars.

The video resources are available at: coastguard.nz/boating-safety/bar-awareness/



10 questions with ...

Belinda Slement

Belinda is the National Education Manager for Surf Life Saving New Zealand (SLSNZ), and a long-term volunteer with the Wainui Surf Life Saving Club and the Gisborne SAR Squad.

How did you get involved with Surf Life Saving?

I grew up at Wainui Beach, near Gisborne. From a young age, I spent most of my spare time swimming, surfing and then once I gained my Surf Lifeguard Award, patrolling and competing with the Wainui Surf Life Saving Club.

Can you tell us about your day-job?

My current role is the National Education Manager for SLSNZ, based in Gisborne. My role involves managing all SLSNZ's qualifications, education framework and our community education programs. We relocated to Gisborne from Wellington seven years ago to start a family and give our kids the same sort of upbringing that we had.

How did working remotely go pre-COVID?

When I relocated, that was my first experience in remote working. SLSNZ were really supportive of this and gave it a good go. Back then, it was really uncommon, but these days I'm managing a team of remote staff all across the country.

How did you get involved in SAR?

At the time, there wasn't a formal SAR squad in our region. After a few incidents where our senior surf lifeguards were asked to assist on searches, a few others and I saw the need to re-establish and formalise an area squad. The Gisborne SAR Squad was re-established in 2018.

What was involved in developing the SAR squad?

There are five Surf Life Saving clubs in our area, which are all relatively small so it made the most sense to build a squad of senior members from the area. We began SAR-specific training and developed our relationships with the local Coastguard and Police. The more the Police saw what we could do and our capability, the more we were tasked to respond.

What are the usual types of SAR operations you're involved in?

We have quite a variety of SAR operations in our area, ranging from missing divers, overturned boats to flood operations. Sadly, some of those jobs become recovery operations, but our squad takes comfort in helping reunite a family, to assist with their grieving process.

What are the challenges of being a paid staff member as well as a volunteer?

I love everything to do with the beach and surf lifesaving, but trying to find that balance so I don't burn myself out with too much of a good thing is a challenge. Having perspective from across the organisation is hugely beneficial in both my roles, and hopefully for the people that I work with.

Can you tell us about a memorable SAR operation?

As a foreign flagged container ship entered Poverty Bay, one crew member decided to put on his drysuit and jump overboard during the night. He wasn't reported missing until the next morning, sparking a large interagency operation with Coastguard, Police, Land Search and Rescue, RCCNZ, Eastland Port and Eastland Rescue Helicopter. I was the initial coordinator for our SAR squad, and we worked closely with Police on shoreline and coastal searches. Given the circumstances, there were a lot of questions about the man's motives. Was this part of criminal activity? Could that mean he was dangerous to us? It was a complex and challenging operation.

What aspects of SAR are you passionate about?

I help run our local Wāhine on Water training days for women to upskill with Inflatable Rescue Boats (IRB). I'm also a huge advocate for empowering our women to take up roles in SAR and in surf lifesaving in general. We've come a long way since I started as a volunteer with the organisation. It's fantastic to see more balance slowly coming in and more female role models in our SAR squads.

What is your advice to surf lifeguards wanting to be involved with SAR?

The right attitude is important, it's not about putting on a superhero cape! We do have happy outcomes, but a lot of the time we're reuniting people with deceased loved-ones. It's about being there for your community, 24/7, and providing your skills to help families, just like yours.